Enjoy the ride

POPAL

At Popal we make bicycles for daily use. Bikes that you can count on, and will never leave you out in the cold. For us, it's not just about the fastest route, but about the journey itself. The journey is where you can enjoy your favourite music, appreciate conversation or simply see the beauty around you. In short, moments that are important to you, are important to us and that's why we make sure you are able to rely on our bikes. No excuses here: we always make the best bicycles, for the best prices, with the care and love that our riders deserve.

Ready for your journey.

Care for your battery!
Our batteries are of high quality, but be aware, even very good batteries are vulnerable when misused. Make sure to read our tips to secure a long live cycle and to protect it against fatal deep discharging.
→ Always charge your battery when nearly empty
→ Switch the system off, if you're battery runs out of power during your ride
→ Store your battery at room temperature and keep the charging level at 30%-70%
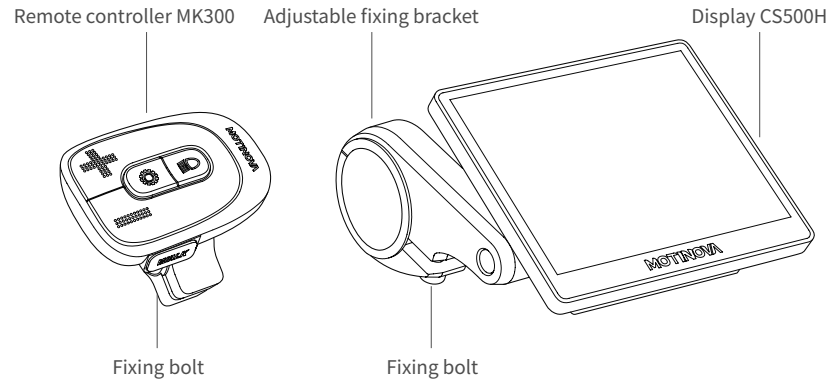→ Check the charging level once a month

For more tips and tricks or information regarding warranties and terms and conditions please visit: popal.com/klantenservice
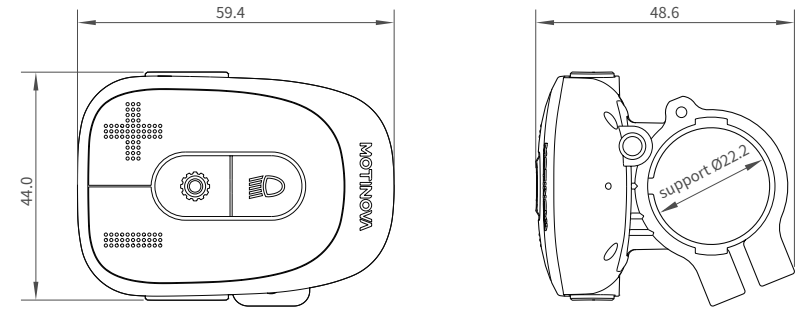
CS500

Standard Specification

Model	CS500
Voltage	24 V / 36 V / 48 V
Adapted Handlebar Diameter	Remote controller: Ø22.2mm Display: Ø22.2mm / Ø25.4mm / Ø31.8mm
Protocol	CAN
IP Grade	IP56
Display Unit	3.5" FSTN
Storage Temp.	-30°C～80°C
Working Environment Temp.	-20°C～60°C
Storage Humidity	30%～50%
Certification	CE、RoHS

Outline and Dimensions

Remote controller MK300   Adjustable fixing bracket   Display CS500H

Fixing bolt   Fixing bolt

Remote controller MK300：

59.4

44.0

48.6

support Ø22.2

Display CS500H：

51.5

63.6

3.5" FSTN

MOTINOVA

77.2

7

15.5

Installation

Front wheel direction

5-M4×10

Locking torque: 2～2.5N·m
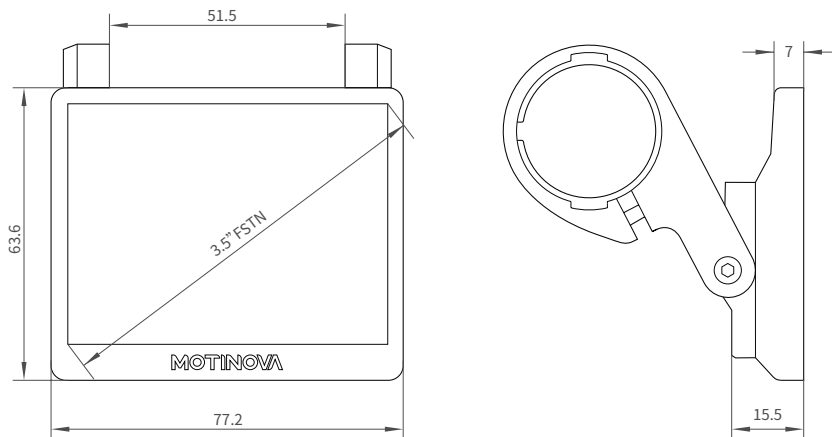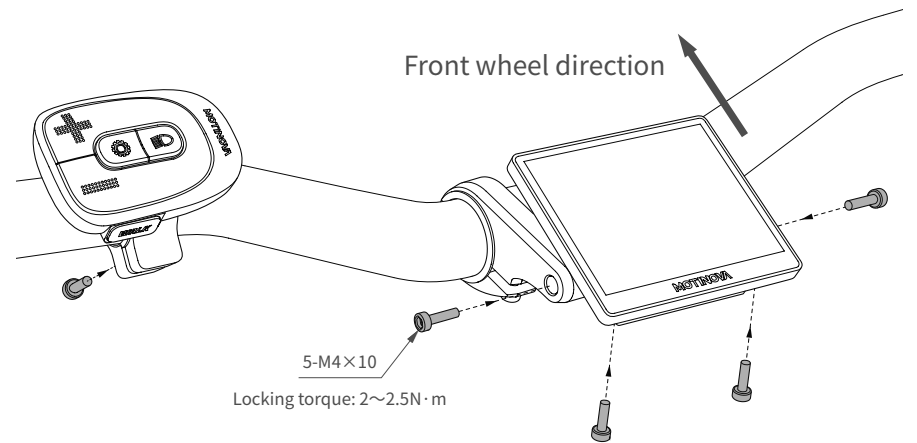
Cable Connection

Remote controller

Display

Motor

Display cable   Extension cable

L2

5 cores (plug)   5 cores (socket)

Remote controller cable

L1

5 cores (socket)   5 cores (plug)
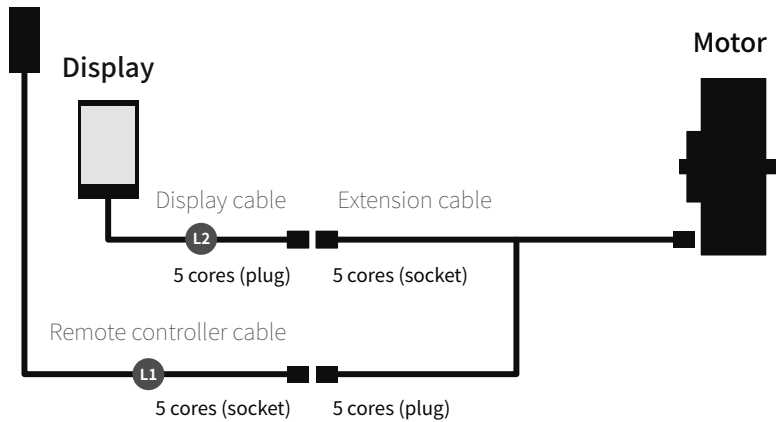
Connector of remote controller

L1=300mm →

type：F-Z508DM

yellow — red
blue
green — black

Connector of extension cable

←

type：F-Z508DG

red — yellow
blue
black — green

Connector of Display

L2=150mm →

type：F-Z508DG

green — black
blue
yellow — red

Connector of extension cable

←

type：F-Z508DM

black — green
blue
red — yellow

Yellow	Blue	Green	Red	Black
CAN-H	POWER-ON	CAN-L	VCC	GND

Cycle Computer Operation Instruction

"POWER" button
"+" button
"SETTING" button
"—" button
"WALK" button

"BIKE LIGHT" button
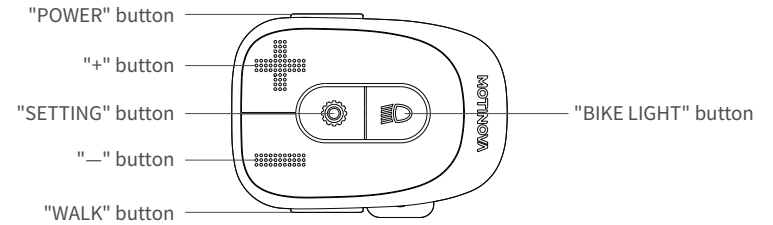
	"+"	"-"	"BIKE LIGHT"	"SETTING"	"POWER"	"WALK"
Power off condition (long press for 1s)	----	----	----	----	Power on	----
Under main interface(click)	Increase power level	Decrease power level	Bike light ON/OFF	Shift to show the endurance mileage、trip mileage、total mileage	Power off	Enter walk mode enquiry
Under main interface(long press over 1.5s)	Enter smart mode	----	----	（when the speed is 0）Enter the setting interface(long press Setting to exit setting interface)	Power off	----
Under setting interface(click)	Cursor right/value increasing	Cursor left/value decreasing	Bike light ON/OFF	Confirm/sava the value and return to setting interface	power off	----
Under setting interface(long press over 1.5s)	Cursor right/value increasing	Cursor left/value decreasing（current trip status，clear off trip data)	----	Confirm/save the value and return to setting interface, power mode is OFF	Power off	----
Under smart mode(click)	Exit smart mode,back to the previous power level	Exit smart mode, back to the previous power level	Bike light ON/OFF	Shift to show the endurance mileage、trip mileage、total mileage	Power off	Enter walk inquiry mode
Under smart mode(long press over 1.5s)	Exit smart mode,back to the previous power level	Exit smart mode, back to the previous power level	----	Exit smart mode, back to the previous power level	Power off	----
Under walk mode(click)	----	Exit walk mode, back to the previous power level	Bike light ON/OFF	Exit walk mode, back to the previous power level	Power off	Exit walk mode,back to the previous power level
Under walk mode(long press over 1.5s)	Long press to provide 6km/h power; release to stop providing power	Exit walk mode, back to the previous power level	----	Enter setting interface	Power off	----

Main UI

② Bike light indication   ③ Time

① Battery capacity   ⑥ Unit

④ Power mode

⑤ Speed

⑧ Endurance mileage

⑦ Power level

⑥ Unit

① **Battery indication：**

Rest capacity of battery to be shown by bars.

When it shows "▯▭" icon, it means battery is low voltage, which should be charged instantly;

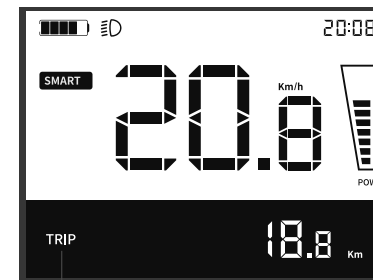When it shows "▭" icon, it means there is too low capacity to power on the system.

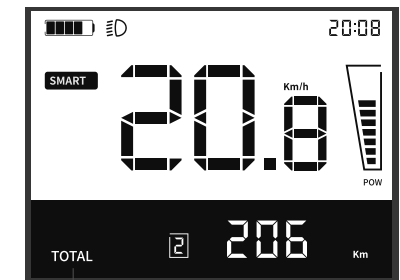| Bars	Percentage
Full (five bars)	85%～100%
Four bars	65%～85%
Three bars	45%～65%
Two bars	25%～45%
One bar	5%～25%
One bar flashes	0%～5%
Empty icon flashes	0%

② **Light:**

Control the bike light. When bike light is on, the light icon "ᗡ" displays, while the bike light is off, the light icon disappears.

③ **Time：**

Display the current system time.

④ **Power mode：**

Six power modes：OFF、ECO、NORM、SPORT、TURBO、SMART.

Default OFF when system is powered on, OFF level without outputing power.

Smart mode: long press "+"1.5s for entering. Once entering smart mode, short press "+" or "-" to exit smart mode.

⑤ **Speed：**

It displays the real time speed information. The accuracy of speed display is one decimal point, and the maximum speed display is three digits.

⑥ **Unit information：**

A unit showing speed and mileage. The metric Km or British Mile display can be set. When the speed unit changes, the mileage unit changes automatically.

⑦ **Power level：**

The power levels are displayed by progress bar with 10 grids.

⑧ **Endurance mileage：**

It displays the endurance mileage(max. three digits) under the current power mode. Under walk mode or OFF level, it displays "-".

（Note: This data is for reference only. The actual mileage is affected by road conditions and other factors.）

⑨ Subtotal mileage   ⑨ Total mileage

⑨ **Mileage statistics：**

The total mileage and subtotal mileage can be counted according to the speed information.

In total mileage, single digit displays in the box and 4 digits displays after the box

The total mileage shows by 4 digits and 1 digit in the box. When the total mileage is less than 9,999 km,the box and the value in the box will not display. When the total mileage is over 9,999 km, the box display and the value in the box is 1 which means 10,000km, and the value after recount again from 0. When the total mileage is over 9,999 km again, the value in the box is 2, and the value after recount again from 0. Reciprocating. (maximum in-box value is 9)

Subtotal mileage can be cleared manually or automatically when it reaches 9999.9km. The total mileage can not be cleared manually

Walk Mode
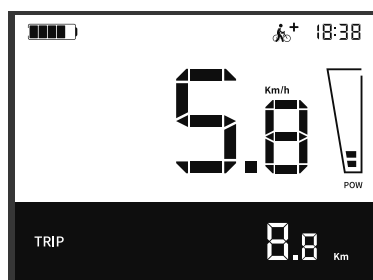
Under Walk mode, the Walk mode icon displays on the right corner. The system will provide within the power 6 km/h.

1、Click WALK button to enter Walk mode enquiry, the Walk mode icon displays and the "+" sign on the icon flashes.

2、Long pressing "+" button, the "+" icon on the display stop flashing and the system outputs power; when loosing "+" button, the system stops providing power and the "+" icon on the display flashes again.

3、Under Walk mode, if you do not press "+" button at 3s, the motor will exit the Walk mode automatically, and the interface will be restored to the previous Power mode. You can also click any button (excluding "+" button) to exit the Walk mode automatically, and the interface will be restored to the previous Power mode.

Under Walk mode, the Power mode will not be displayed.

Smart Mode

Under system power on, long pressing "+" button for 1.5s to enter smart mode. When entering the smart mode, click "+" or "-" button to exit the smart mode and the system will recover to previous power mode.
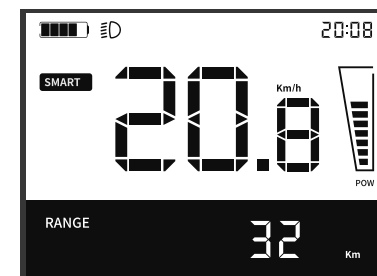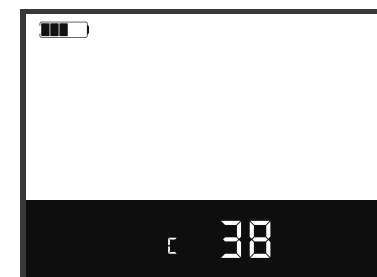

Charging

If the cycle computer is on, it shows the charging interface during battery in charge. If the cycle computer is off, it will show the charging interface after turn on the cycle computer during battery in charge.

During in charge, the battery icon is five bars incrementing cycle display. "C" stands for "Charging" and the next number is percentage of charging capacity. When the charge is full, the battery icon is five bars and the battery capacity percentage is 100.

(Note: When the battery is charging with charger, no matter the battery is full charged or charging, the cycle computer only can be powered on or off and but cannot control the motor. When remove the charger, cycle computer exit charging interface and back to normal user operation interface with the default power mode OFF.)
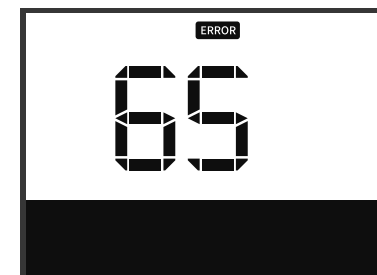
Fault Information Interface

It displays the fault code and prompt of motor, battery and cycle computer.

When the fault exists, the fault code displays on the interface only, while all the other icons disappear.

The interface will resume normal until the fault disappears.

When the multiple faults occur, the fault codes are displayed in a 1s interval loop.

Fault Code List

Code	Source	Fault description	Solution
10	MC	Over Current Protect	Automatic recovery after 5s
11	MC	Under Voltage Protect	Charging for battery
12	MC	Over Voltage Protect	Change the proper battery
13	MC	Rotor Locked	Power off and restart
14	MC	Over Heat Protect	Power off and restart after 30min
15	MC	NTC Fault	Depot repair
16	MC	Speed Sensor Fault	Check or change speed sensor
17	MC	Torque Sensor Fault	Depot repair
18	MC	Motor Fault	Depot repair
19	MC	BMS Check Fault	Change new battery
20	MC	PBU Check Fault	Change the cycle computer button
21	MC	HMI Check Fault	Change the cycle computer
22	MC	Phase Line Fault	Depot repair
23	MC	Cadence Sensor Fault	Depot repair
24	MC	Gas Sensor Fault	Change throttle
25	MC	MOS Short Circuit	Depot repair
26	MC	Abnormal Voltage Fluctuation	Change the battery
27	MC	Motor Controller Fault	Depot repair
28	MC	Circuit Fault	Depot repair
29	MC	TE MCU Fault	Depot repair
30	MC	TE Circuit Fault	Depot repair
40	BMS	Over Current Alarm (After the failure disappears, HMI delay display 3s)	Stop riding
41	BMS	Charge Over Voltage Alarm	Stop charging or change the charger
42	BMS	Discharge Under Voltage Alarm	Charging in time
43	BMS	Charge Over Current Alarm	Change the charger
44	BMS	Discharge Over Current Alarm	Automatic recovery after 5s
45	BMS	Charge Over Heat Alarm	Stop charging
46	BMS	Charge Low Temperature Alarm	Stop charging
47	BMS	Discharge Over Heat Alarm	Use after shutdown and standing for 30min
48	BMS	Discharge Low Temperature Alarm	Recommend stop using
49	BMS	MOS Over Heat Alarm	Automatic recovery after 5s
60	PBU	"+" Button Fault	Check or change the button
61	PBU	"-" Button Fault	Check or change the button
62	PBU	"Setting" Button Fault	Check or change the button
63	PBU	"Light" Button Fault	Check or change the button
64	PBU	"Walk" Button Fault	Check or change the button
65	PBU	"Power" Button Fault	Check or change the button
66	PBU	MCU Fault	Depot repair
67	PBU	MOS Short Circuit	Depot repair
68	PBU	Voltage Test Fault	Depot repair
69	PBU	HMI Communication Fault	Depot repair
70	PBU	MC Communication Fault	Depot repair
80	HMI	MC Communication Fault	Check circuit or change parts
81	HMI	PBU Communication Fault	Check circuit or change parts

Setting Function

User setting

①Time setting
②Unit setting
①Clear setup
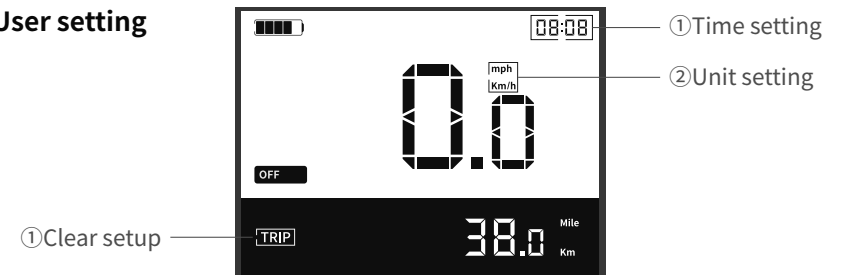
① **Time setting:**

System time can be adjusted. Operations as below:

1. When speed is 0, long pressing "Setting" button for over 1.5s to enter setting interface.

2. After entering setting interface, click "+" button or "-" button to select "hour" or "minute", then pressing "Setting" button to confirm, the value of "hour" or "minute" flashes.

3. Pressing "+" or "-" button to adjust the value, click "Setting" button to save. After the adjustment is completed, short pressing the "Setting" button to save, or long pressing the "Setting" button for over 1.5s to save and exit the settings interface.

② **Unit setting：**

Speed and mileage unit can be adjusted. You can choose km or mile in setting. When the speed unit changes, the mileage unit changes accordingly. Operations as below:

1. When the speed is 0, pressing the "Setting" button for over 1.5s to enter the setting interface.

2. After entering the setting interface, pressing the "+" button or "-" button box to select the "unit", and then click the "Setting" button to confirm, the selected unit flashes.

3. Then pressing the "+" button or "-" button to adjust the unit. After the adjustment is completed, short pressing the "Setting" button to save, or long pressing the "Setting" button for over 1.5s to save and exit the settings interface.

③ **Clear setup：**

The subtotal mileage can be cleared, while total mileage cannot be cleared. Operations as below:

1. When the speed is 0, long pressing "Setting" button for over 1.5s to enter the setting interface.

2. After entering the setting interface, click the "+" button or "-" button to select the subtotal mileage, and then click the "Setting" button to confirm, the subtotal mileage value flashes.

3. Then long pressing "-" button for over 1.5s to clear the value (this operation is irrevocable). After the adjustment is completed, short pressing the "Setting" button to save, or long pressing the "Setting" button for over 1.5s to save and exit the setting interface.

Factory setting

Ebike manufacturer can visit www.motinova.com to download the after-sales service software to update or re-configure the cycle computer.

Other Functions

Cycle computer and battery check function

After boot-up, the system will check the cycle computer and battery. If you use the unauthorized batteries, the cycle computer will prompt with default code and cannot start the motor.

Cycle computer power off automatically

If there is no communication command within 5 minutes, the system will automatically shut down (the battery will not shut down at this time). Please press the power button of the cycle computer to start up the system, and the default gear mode is OFF after starting up.

If there is no communication command for 30 minutes, the battery will shut down. Please press the battery power button to start up the battery, and then press the cycle computer power button to start up the system, and the default gear mode is OFF after starting up.

→ popal.com

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