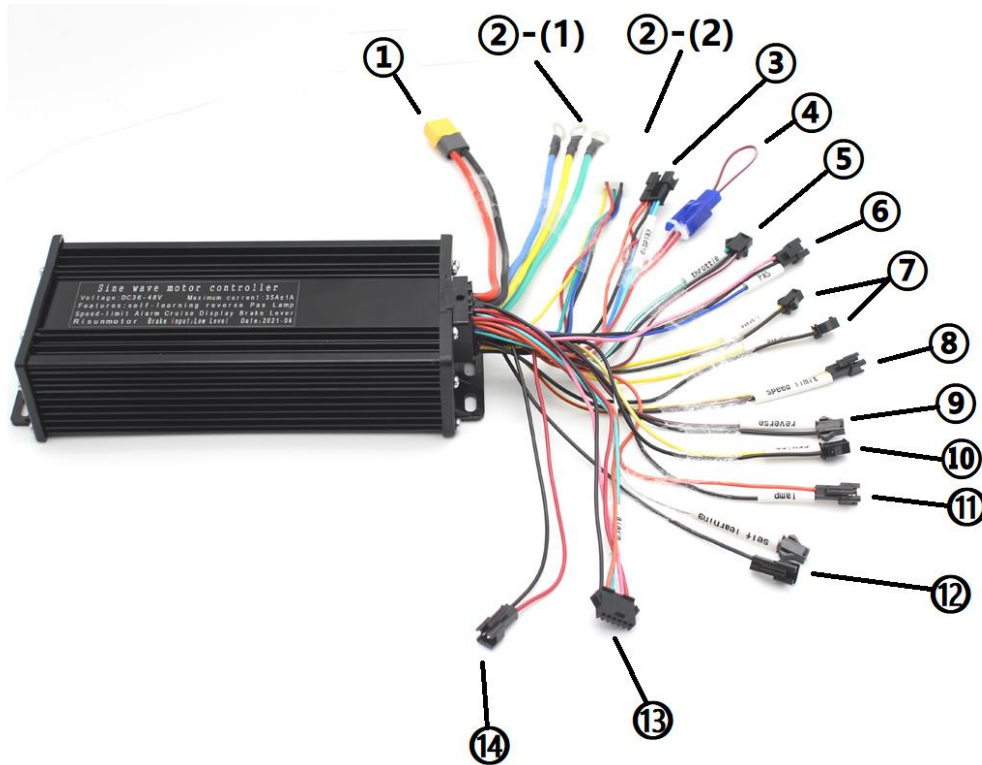


Controller Connection Manual



Very Important Notice:

Before you connect controller with your motor wheel, please disconnect self-learning plugs (No.12):



How to match controller and motor for first time use:

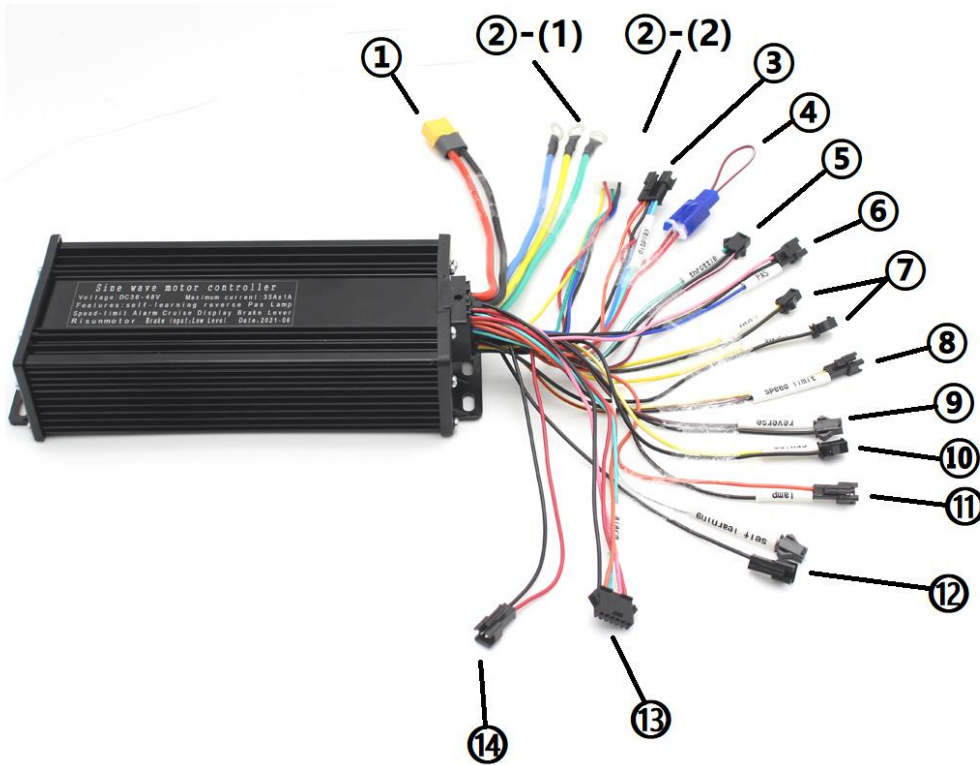
1. **Lift your motor wheel off ground (very important)**
2. If you connect with display, please make sure PAS/Throttle Speed Level is at any level **more than 0 level**
3. Connect Self-learning plug 6-8 seconds
4. You will see motor wheel rotate slowly
5. Please check whether rotation direction is correct
 - (1). If correct direction, then keep 6-8 seconds, then disconnect
 - (2). If reverse direction, then disconnect and plug again till get correct rotation direction, then keep 6-8 seconds, then disconnect
6. **Motor and Controller Pairing finished!**



Why 3-mode Controller?

1. Support Hall Sensor Mode (Sine Wave Mode)
2. Support Non-Hall Mode (If your motor hall sensor burned or not match, controller will still work in square wave mode)
3. Support both 60° and 120° Hall Sensor
4. Self-learning Function: Even wrong 3-phase combination between motor and controller, doesn't matter, above self-learning process can correct it!

Connection Diagram



1. Power Supply Connection: XT60 Male Plug

Controller Side	Definition
XT60 Male	Power Input Connector
Red (Positive)	Positive Pole
Black (Negative)	Negative Pole

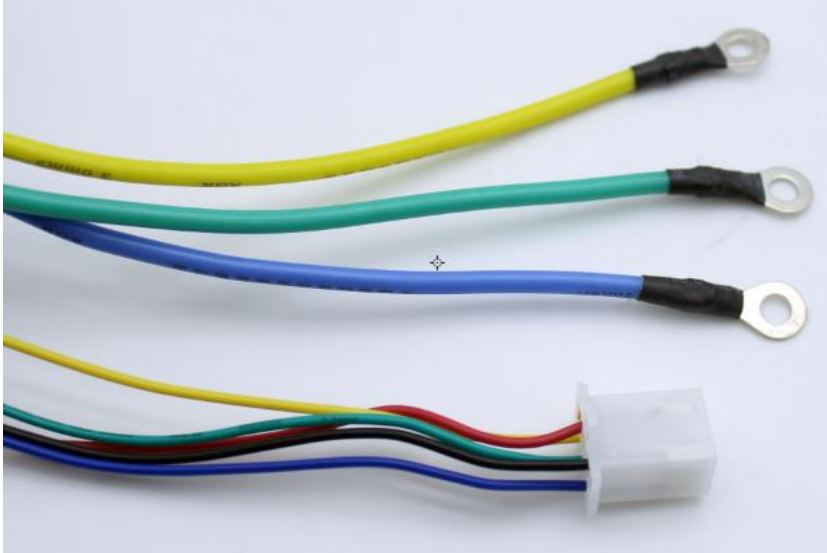


2. Motor Cable Connection (3-Phase + hall sensor):
 (1). Motor 3-Phase: "O" rings, use yellow "O" ring connection box

Controller Side	Definition
3-"O" Rings	Motor 3-Phase Connector
Yellow	Motor Phase-A
Green	Motor Phase-B
Blue	Motor Phase-C

(2). Motor hall sensor: White DJ7061-2.8-21 Female Plug

Controller Side	Definition
DJ7061-2.8-21 Female	Motor Hall Sensor Connector
Red	5V+ Positive
Black	Negative
Yellow	Hall Sensor Signal
Green	Hall Sensor Signal
Blue	Hall Sensor Signal



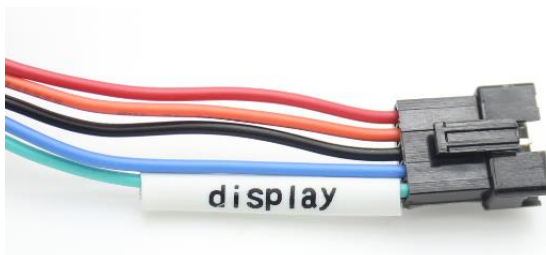
If you want motor rotate as reverse direction with original speed, then just exchange two wires of phase and hall sensor wires:

3-Phase Wire: exchange Yellow and Blue

Hall Sensor Wire: exchange Yellow and Green

3. LCD Display Connection: Black SM-5A Male Plug

Controller Side	Definition
SM-5A Male	LCD Display Connector
Red	Power input positive
Pink	Electric Lock
Black	Negative
Blue	TxD
Green	RxD

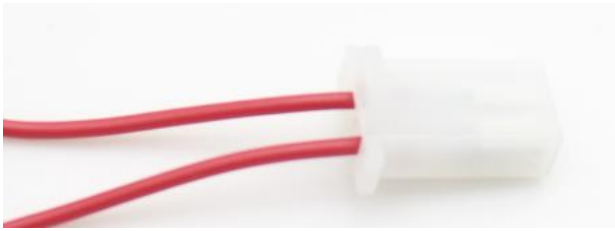


If you don't want to use LCD, please just plug the connector as follow photo (connect red and pink):



4. Electric Lock Connection: White 2.8B-2 Female Plug

Controller Side	Definition
2.8B-2 Female	Electric Lock Connector
Red	
Red	



If you use your own throttle and without electric lock, then please just connect jumper plug as follow photo:



5. Throttle Connection: Black SM-3Y Female Plug

Controller Side	Definition
SM-3Y Female	Throttle Connector
Dark Red	Positive
Black	Negative
Green(Signal)	Hall Sensor Signal



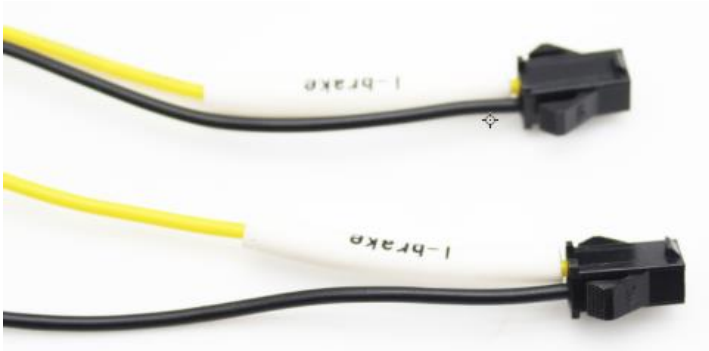
6. PAS Connection: Black SM-3A Male Plug

Controller Side	Definition
SM-3A Male	PAS Connector
Pink	Positive
Black	Negative
Blue(Signal)	Hall Sensor Signal



7. Brake Levers Connection: 2 x Black SM-2Y Female Plugs

Controller Side	Definition
2x SM-2Y Female	Brake Connector
Black	Negative
Yellow	Signal



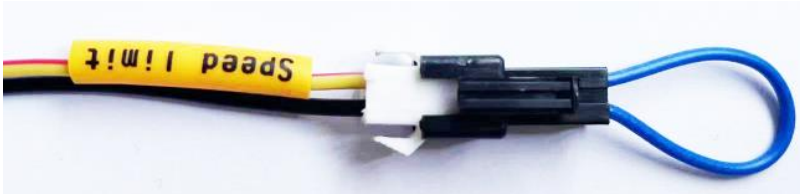
8. Speed Limit Connection: White SM-2Y Female Plug

Controller Side	Definition
SM-2Y Female	Cruise Connector
Black	
Red+Yellow	

(1). Without jumper plug/Switch: No any speed limit



(2). With jumper plug connected: Speed is limited



(3). With switch (Switch on/off):
Switch on: Speed is limited



Switch off: No any speed limit



9. Reverse Connection: Black SM-2Y Female Plug

Controller Side

Definition

SM-2Y Female

Reverse Jumper/Switch Connector

Brown

Black

(1). Without jumper plug/Switch: Rotate forward



(2). With jumper plug connected: Rotate backward



(3). With Switch (Switch on/off):

Switch on: Rotate backward;



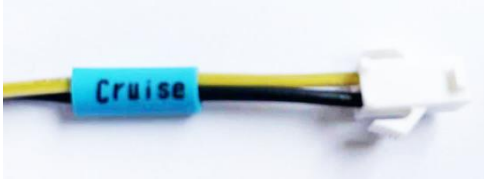
Switch off: Rotate forward



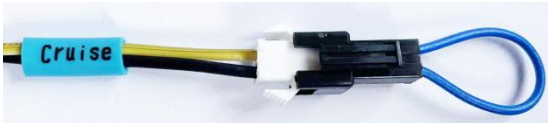
10. Cruise Connection: White SM-2Y Female Plug

Controller Side	Definition
SM-2Y Female	Cruise Connector
Black	
Yellow	

(1). Without jumper plug/Switch: Without cruise function

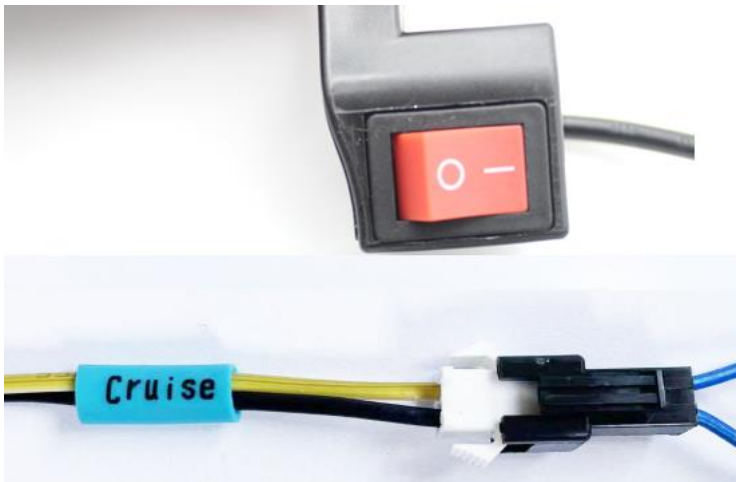


(2). With jumper plug connected: Cruise function is activated (if you keep throttle at definite fixed speed 6 seconds will activate cruise function)

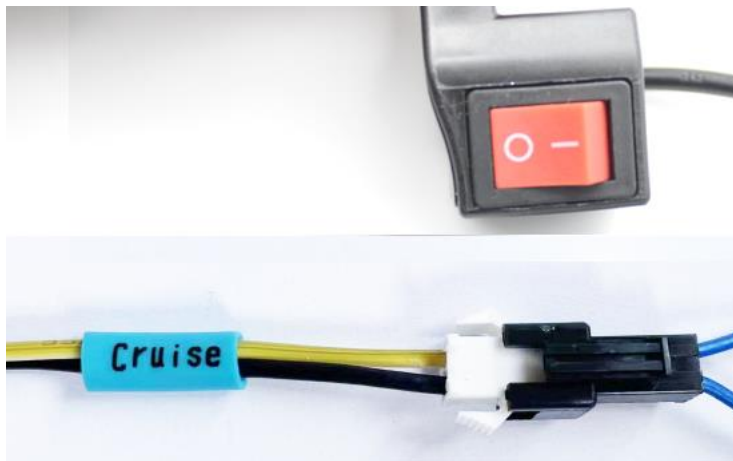


(3). With switch (Switch on/off):

Switch on: Cruise function is activated (if you keep throttle at definite fixed speed 6 seconds will activate cruise function)



Switch off: Without cruise function



11. Head Light Connection: Black SM-2A Male Plug

Black SM-2A Male Plug: head light will be **controlled by LCD Display**, 36V or 48V output (according to battery you use), max current **150mA**, max power 7W. Otherwise will be burned.

Controller Side	Definition
SM-2A Male	Headlight Connector
Orange	Your head light positive wire
Black	Your head light negative wire



12. Self-learning Connection: White SM-2Y Female Plug and White SM-2A Male Plug:

Controller Side	Definition
SM-2Y Female	Self-learning Connector
SM-2A Male	
White	
White	

(1). Connected: Active self-learning

Before use this function, please lift your motor wheel off ground (very important)



(2). Disconnected: Deactive self-learning (after self-learning, please disconnect these two plugs). Before you connect motor and controller, please make sure these two plugs are disconnected.



13. Alarm Connection: Black SM-6Y Female Plug

Controller Side	Definition
SM-6Y Female	Alarm Connector
Red	Power Positive (+)
Pink	Wheel Movement Alarm
Green	Alarm Signal
Orange	Electric Lock
Black	Power Negative (-)



14. Power Output Connection: Black SM-2A Male Plug

This is power output plug, you can use it as lights (lamps) which can be **controlled by switch**, you can connect switch to control your light, 36V-72V output (according to controller and battery you use), can take 2A current, 100-150W light.

Controller Side	Definition
SM-2A Male	Power Output Connector
Red	Your switch/head light positive wire
Black	Your head light negative wire

