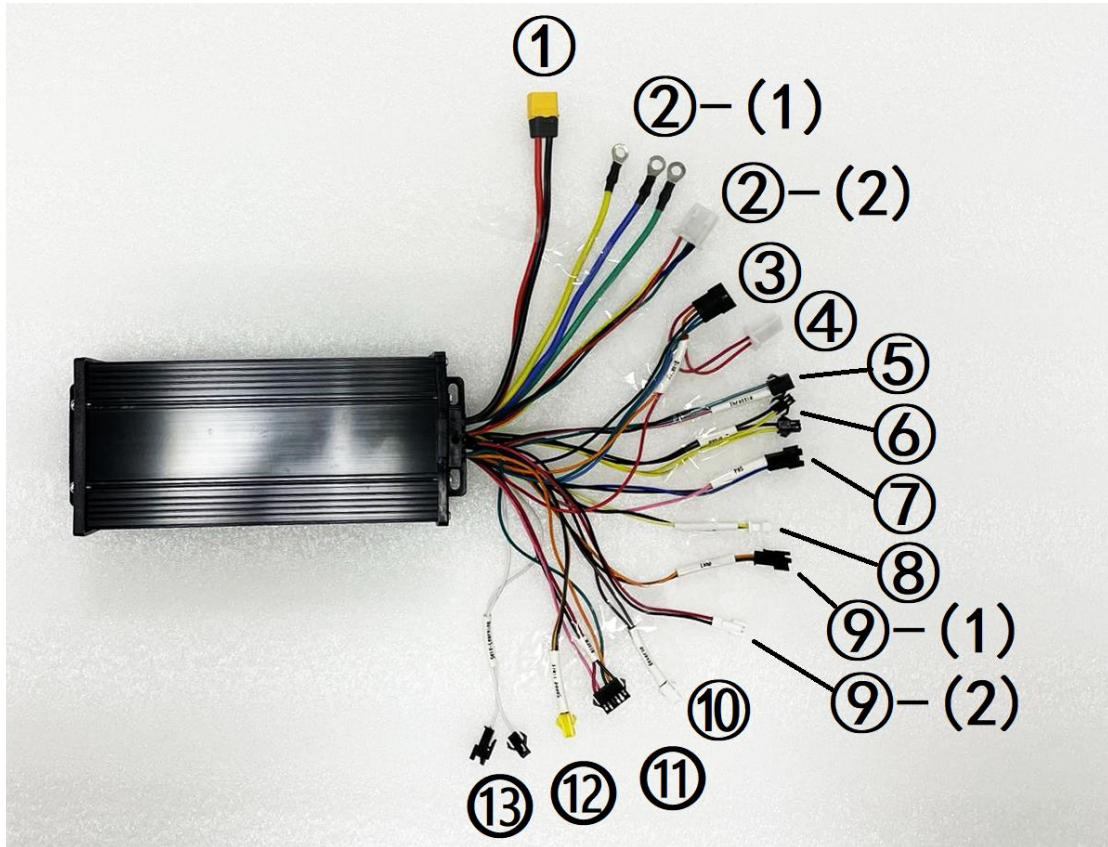


Controller Connection Manual



Very Important Notice:

Before you connect controller with your motor wheel, please disconnect self-learning plugs (No.13):



How to match controller and motor for first use:

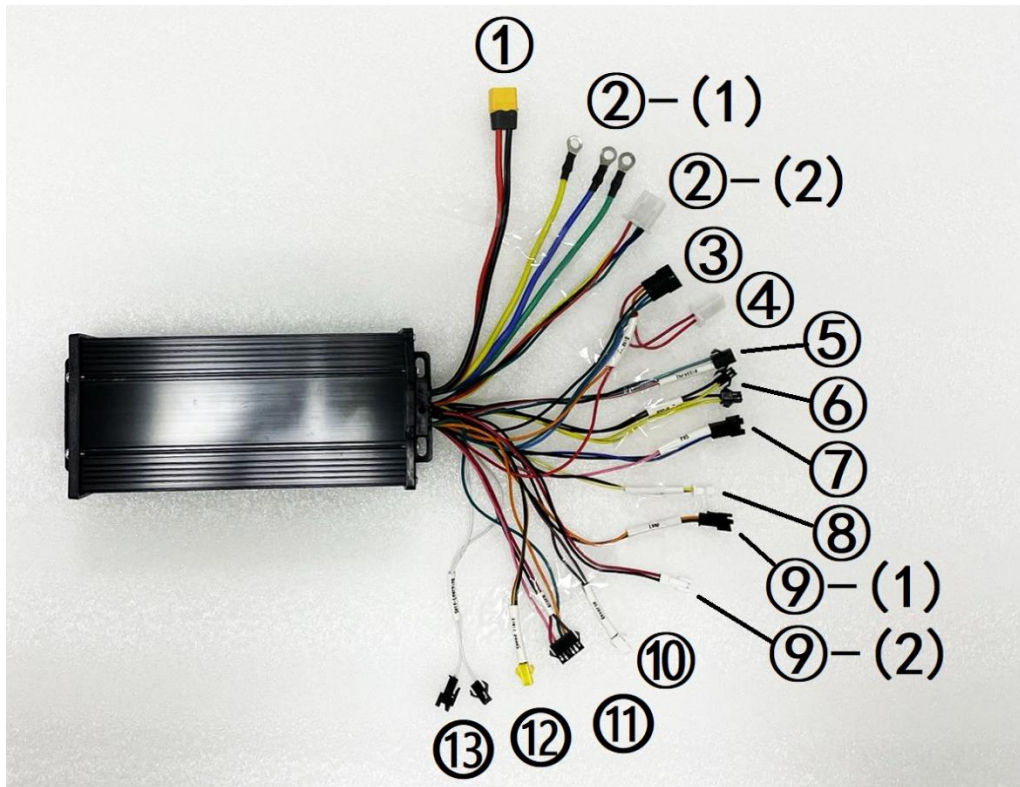
1. **Lift your motor wheel off ground (very important)**
2. Connect Self-learning plug 6-8 seconds
3. You will see motor wheel rotate slowly
4. Please check whether rotation direction is correct
 - (1). If correct direction, then keep 6-8 seconds, then disconnect
 - (2). If reverse direction, then disconnect and plug again till get correct rotation direction, then keep 6-8 seconds, then disconnect
5. 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. 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 Plug (Power input to Controller): Yellow XT60 Male Plug

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



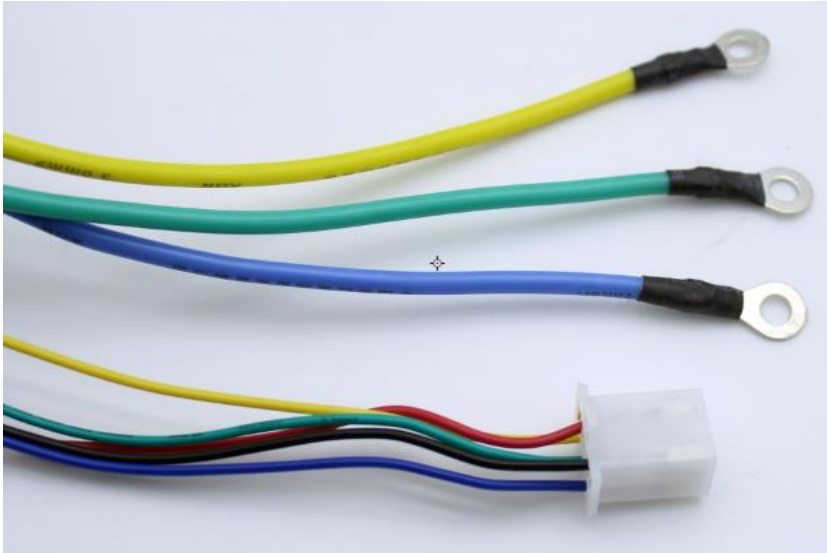
2. Motor Cable Plugs (3-Phase + hall sensor):

(1). Motor 3-Phase Plug: "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 Plug: White DJ7061-2.8-21 Female Plug

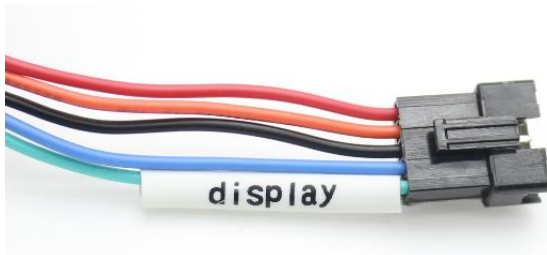
Controller Side	Definition
DJ7061-2.8-21 Female	Motor Hall Sensor Connector
Red	5V+ Positive
Black	Negative
Yellow	Hall Sensor Signal
Green	Hall Sensor Signal
Blue	Hall Sensor Signal



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 Plug: Black SM-5A Male Plug

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

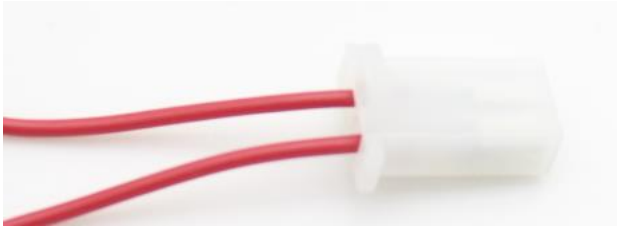


If you don't want to use (or don't have) LCD display, please just plug the jumper connector as follow photo (connect red and pink):



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

Controller Side	Definition
White 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, otherwise controller will have no power:



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

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



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

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



7. PAS Plug: Black SM-3A Male Plug

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



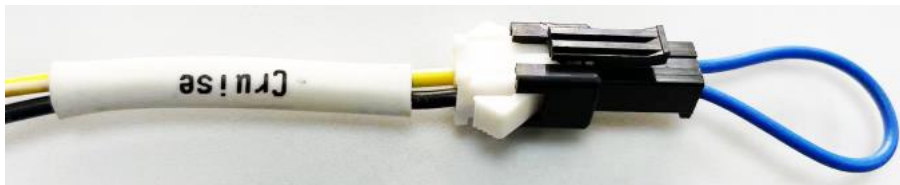
8. Cruise Plug Connection: White SM-2Y Female Plug

Controller Side	Definition
White 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





9. Head Light Plugs: Black and White SM-2A Male Plugs

(1). **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
Black SM-2A Male	Headlight Connector
Orange	Your head light positive wire
Black	Your head light negative wire



(2). **White SM-2A Male Plug:** head light will be **controlled by switch**, you can connect switch to control your light, 36V or 48V output (according to battery you use), can take **2A** current, **100W** light.

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



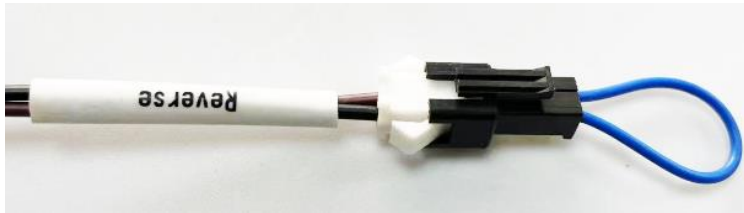
10. Reverse Plug: White SM-2Y Female Plug

Controller Side	Definition
White 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



11. Alarm Plug: Black SM-6Y Female plug

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



12. Speed Limit Plug: Yellow SM-2Y Female plug

Controller Side

Definition

Yellow SM-2Y Female

Speed Limit Jumper/Switch Connector

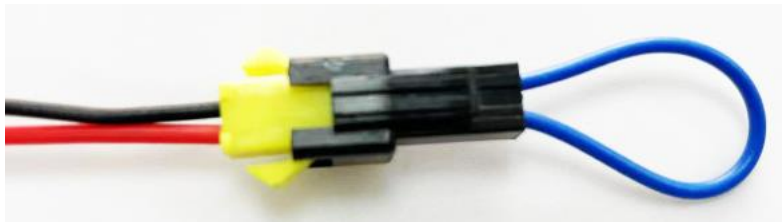
Red

Black

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

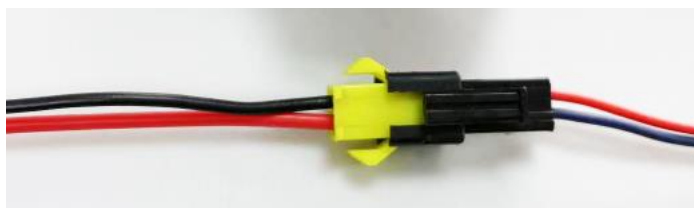


(2). With jumper plug connected: Speed be limited under 25km/h

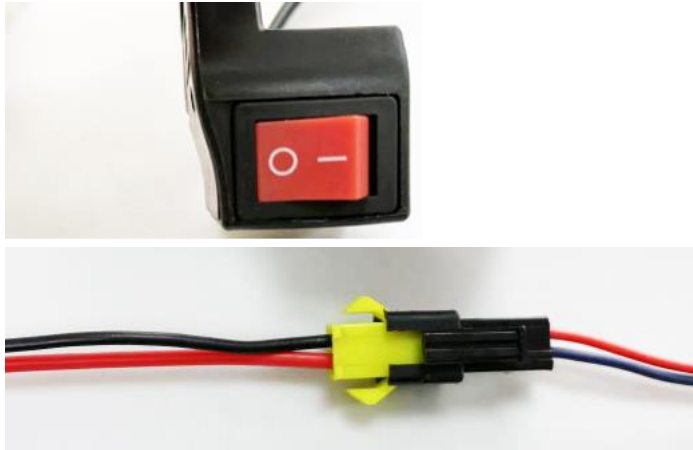


(3). With Switch (Switch on/off):

Switch on: Speed be limited under 25km/h



Switch off: No any speed limit



13. Self-learning Plugs: White SM-2A Male plug and SM-2Y Female plug

Controller Side

Definition

White SM-2A Male

Self-learning Connector

White SM-2Y Female

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 plugs)

Before you connect motor with controller, please be sure these two plugs are disconnected

