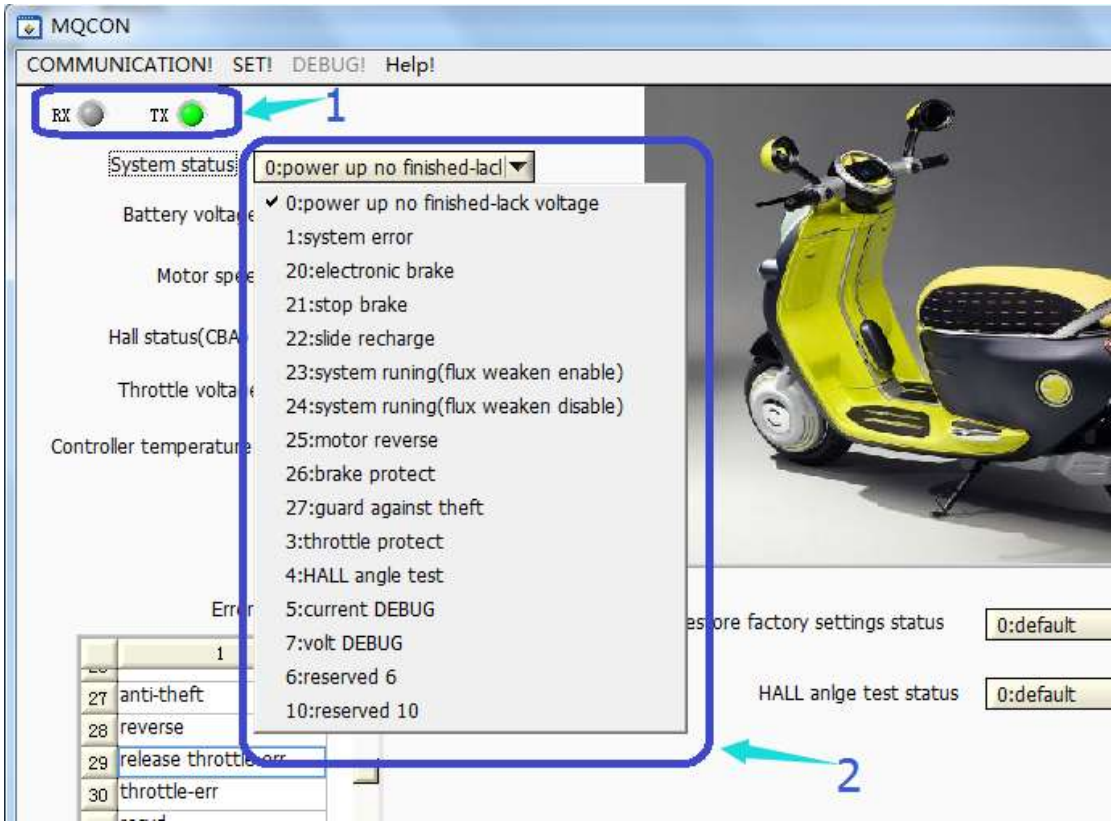
一、 Main Intrerface

The information on the main interface describle the controller real status and error list ,it cann't be edit.

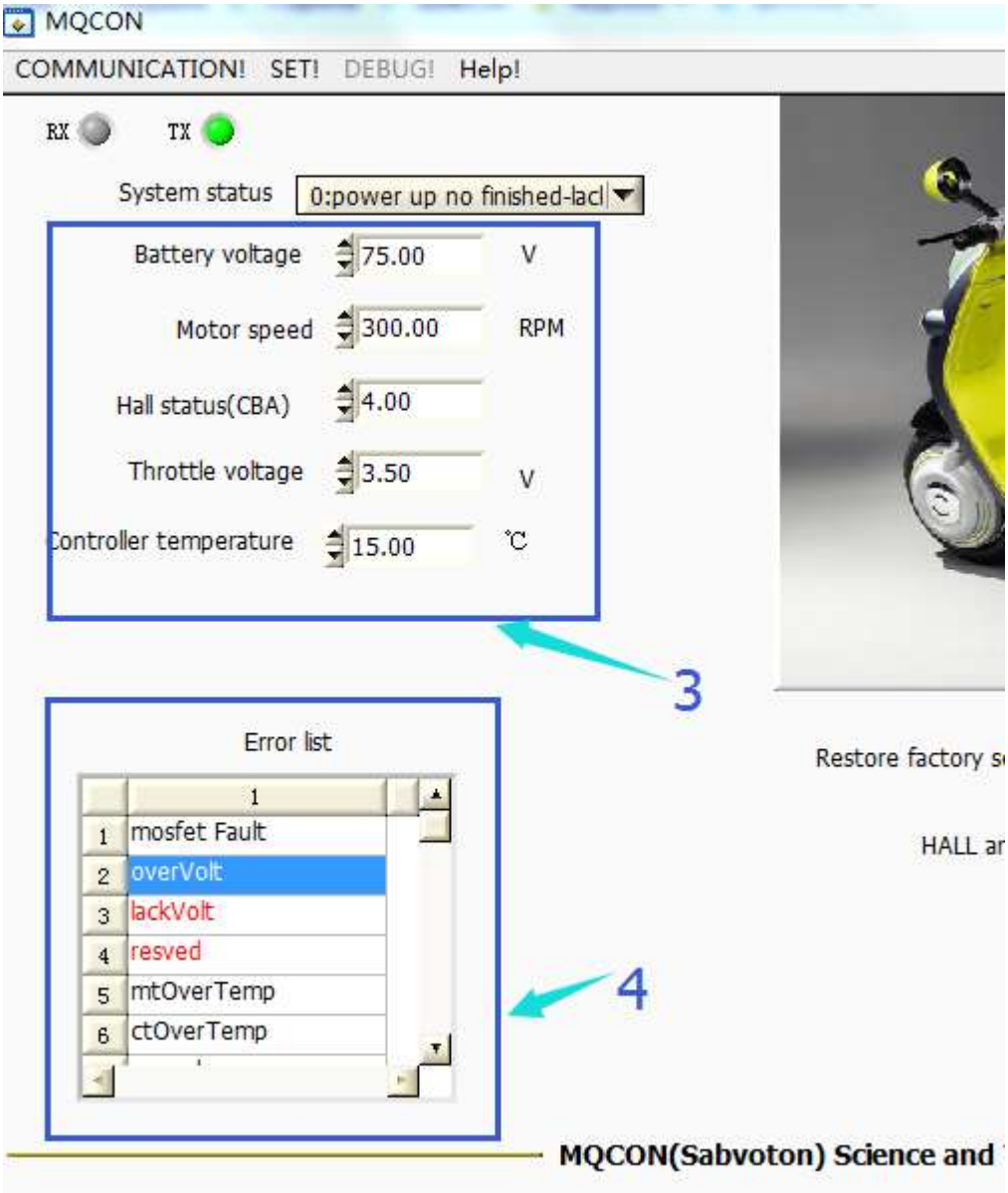


1- When RX and TX twinkle alternately ， the communication is successful ,the data on the interface come from the controller setting. If only TX twinkle， the communication is invalid, the data is unmeaning。

2- "system status" describe current status and error of controller，it help the users to find controller error and resolve problem easily.

Status	**description**
0：power up no finished	When power on，if the controller detect battery voltage is lower than the lack voltage setting ，for example the lack voltage setting is 60V，it detect the battery voltage is 50v,then it will show "power up no finished"
1：system error	When the controller detect errors , it will show that，the specific error can be found from the error list （the red font in the error list is current error）
20：electronic brake	The controller enter e-brake mode and the throttle input is invalid（while in e-brake

	to stop the motor ， the controller will charge for the battery）
31：stop brake	The controller is in brake mode and the throttle input is invalid and the controller close the pwm output
23：system runing（flux weaken enable）	Controller is in normal running mode and it can enter flux weaken at high speed
24：system runing（flux weaken disable）	Controller is in normal running mode and it can not enter flux weaken at high speed
25：motor reverse	The reverse signal is valid and controller enter reverse mode ，if throttle input is valid the motor will spin in reverse direction
26：brake protection	The throttle is invalid and must be release
27：guard against theft	The anti-theft input is valid and the controller lock the motor
3：throttle protect	While power on，controller detect throttle voltage is higher than the min valid throttle voltage setting ,it will enter throttle protect
4：hall angle test	Controller is in hall angle test mode



3- After communication is ok，the data in picture 3 will be refreshed(for some type controller ,the data only be updated when motor is still or speed in very low)：

Battery voltage： the battery voltage

Motor speed： uint is RMP，that is“ r/min”,the data is relate to polar pairs setting

Hall status(CBA)： the value only show any one of 1 2 3 4 5 6 ；if it show 0 or 7，the motor hall is wrong or the controller hall circuit is wrong

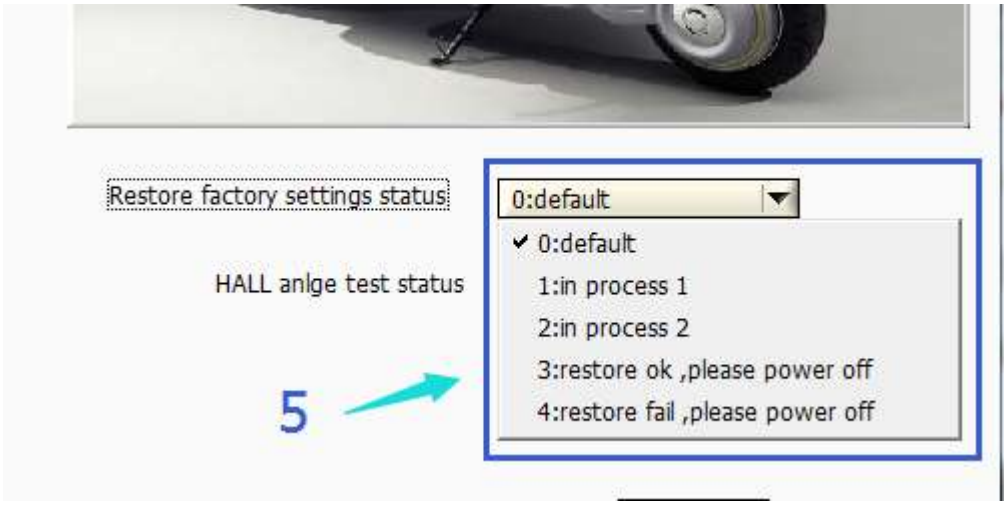
Throtle voltage： throttle voltage real voltage ,while spin the throttle ,the value will change

Controller temperature: the temperature of controller

4- Error list，only red font is the current fault or status which should be attention：

Error number ,that is green led twinkle times	Description and solution
1 mosfet fault	

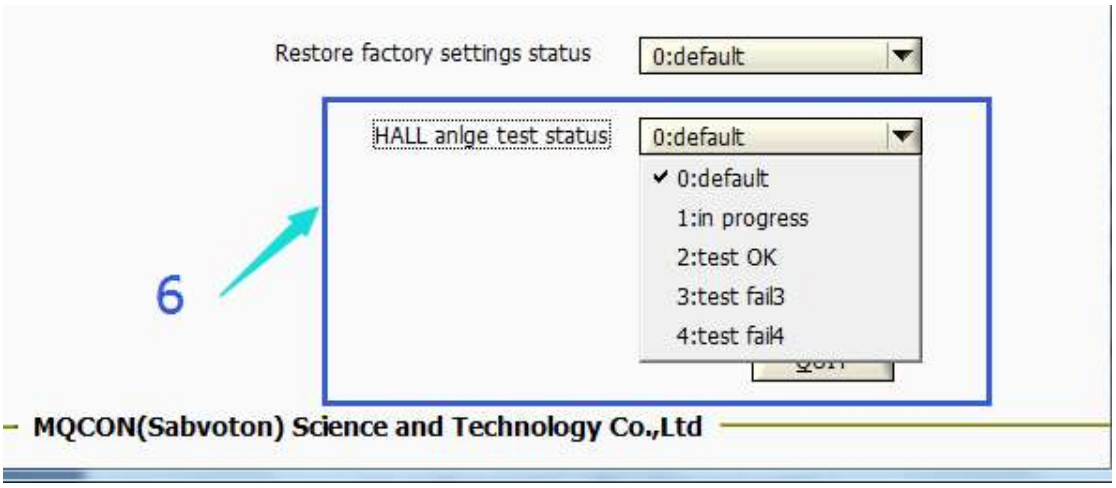
2 overVolt	Controller detect battery voltage is higher than overvoltage setting
2 lackVolt	Controller detect battery voltage is lower than lack voltage setting
5 mtOverTemp	
6 ctOverTemp	Controller temperature is higher than protect temperature setting.
8 overCurrent Voltage	If the controller show this error when power on ,maybe the controller is broken; if the error occur when driving, maybe some setting isn't proper, such as: 1- hall angle setting should use right angle 2- the accelerate or decelerate time setting should set right value
9 overload	When the controller run with big load for 30 minutes ,it will show overload
11 store fault	Maybe the store circuit is broken
13 hall fault	If hall error occur when power on，1- please check the motor hall， 2- please check the 5v of the hall connector If hall error occur when driving ,please contact with controller supplier.
20 block protect fault	When the real phase current is higher and the motor speed is zero. It will show this error.
21 unInitEeprom	Click the "restore factory setting" in SET->DEBUG tab to solve the error, if the error cann't be cancel ,the modified parameters cann't be stored.
25 power up no finished	after power on，if the controller detect battery voltage is lower than the lack voltage setting ，
26 brake	It is not a fault information, it mean the controller enter brake mode
27 anti-theft	It is not a fault information, it mean the controller enter anti-theft mode
28 reverse	It is not a fault information, it mean the controller enter reverse mode
29 release throttle error	Release the throttle to solve the error
30 throttle error	While power on，controller detect throttle voltage is higher than the min valid throttle voltage setting ,it will enter throttle protect



5- When execute“restore factory setting” in SET-DEBUG tab，the main interface will show the steps of the restore ，

finally, if it show “3：restore ok”,please reset the controller。

Finally ,If it show “4：restore fail”, maybe the store circuit is broken, please contact the supplier。

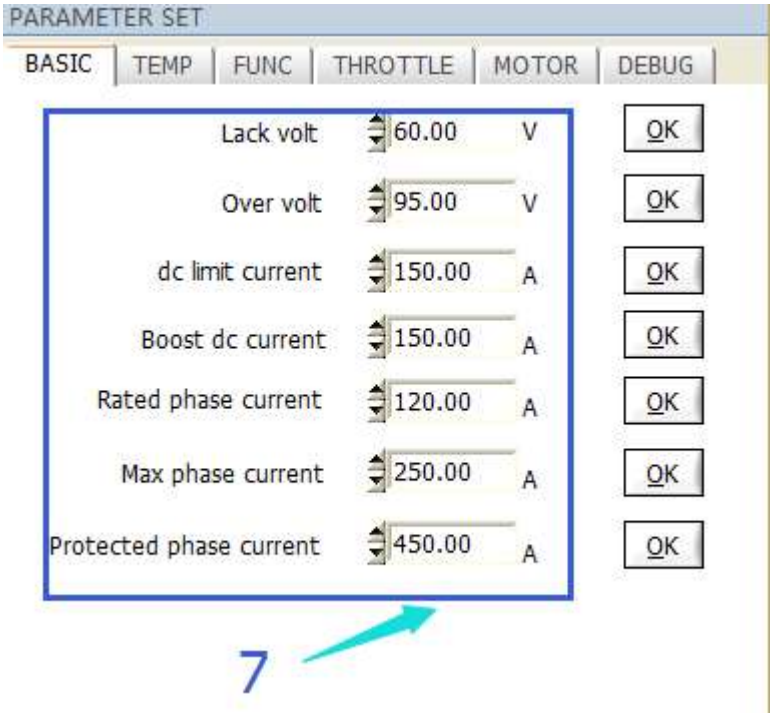


6- When execute hall angle test ,the step and result will be showed as picture 6，

Finally, if show:“3：test failed” or “4：test failed 4”, please use bigger test given current(such as 25A or 30A) in SET-DEBUG TAB to redo the hall angle test. If it still failed ,please exchange any of two phase wire to redo the hall angle test

二、 Parameter Set Tab

Any modification should be set ok, otherwise the controller will not receive the new setting. If it need to be saved, the" parameter store" in SET-DEBUG should be executed after all modification.

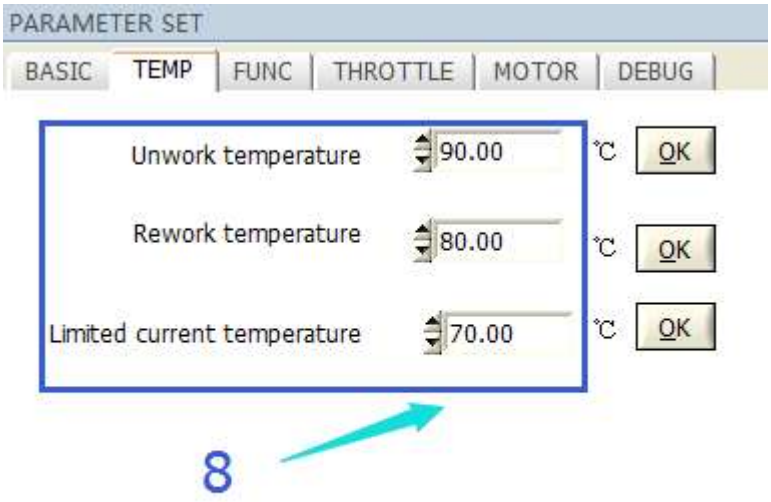


三、 Picture 7 show the basic setting，if the user setting exceed the parameters range, the controller will ignore that setting.

Parameter Name	**Description**
Lack volt	If controller detect the battery voltage is lower than the setting ,it will stop work . Generally, if battery is 72V,the setting is about 60V; if battery is 60V,the setting is about 50V; if battery is 48V,the setting is about 42V
over volt	If controller detect the battery voltage is higher than the setting ,it will stop work . Generally, if battery is 48v or 60v or 72V,the setting is about 95V;
dc limit current	It limit the max dc input current to controller ,that setting is according to controller type; For example : 72250 setting is no more that

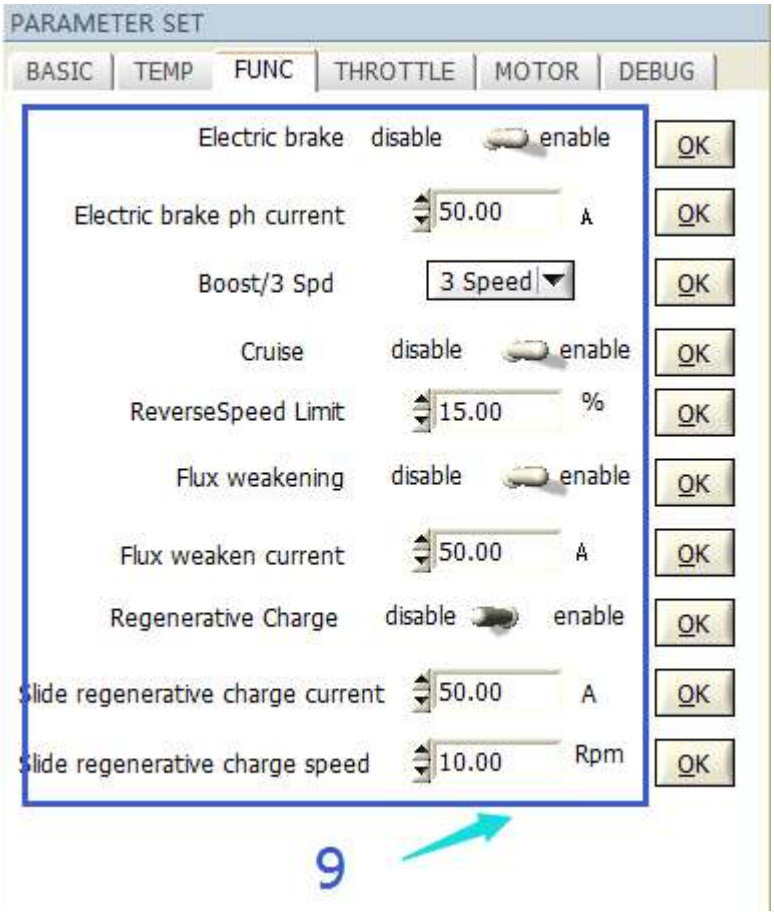
	250A;SVMC72150 setting is no more than 150A;SVMC72100 setting is no more than 100A; SVMC7280 setting is no more than 80A; SVMC7260 setting is no more than 60A; SVMC7245 setting is no more than 45A
Boost dc current	It limit the dc input current in boost mode ; that setting is according to controller type; For example : 72250 setting is no more that 250A;SVMC72150 setting is no more than 150A;SVMC72100 setting is no more than 100A; SVMC7280 setting is no more than 80A; SVMC7260 setting is no more than 60A; SVMC7245 setting is no more than 45A
Rated phase current	that setting is according to controller type; For example : 72250 setting is about 250A;SVMC72150 setting is about 150A;SVMC72100 setting is about 100A; SVMC7280 setting is about 80A; SVMC7260 setting is about 60A; SVMC7245 setting is no more than 50A
Max phase current	When the throttle is in max position, the controller output the max phase current. that setting is according to controller type; For example : 72250 setting is no more that 550A;SVMC72150 setting is no more than 350A;SVMC72100 setting is no more than 250A; SVMC7280 setting is no more than 200A; SVMC7260 setting is no more than 175A; SVMC7245 setting is no more than 140A
Protected phase current	The controller will stop running when it detect the real phase current exceed the setting that setting is according to controller type; For example : 72250 setting is no more that 650A;SVMC72150 setting is no more than 450A;SVMC72100 setting is no more than 300A; SVMC7280 setting is no more than 250A; SVMC7260 setting is no more than 225A; SVMC7245 setting is no more than 175A

四、 Controller temperature setting，any setting about temperature should not exceed 100°



Parameter Name	**Description**
Unwork temperature	When controller temperature exceed the value,it will close the pwm and stop running We recommend about 90, it should be smaller than 100
Rework temperature	When controller enter temperature protected ,the controller stop running ,then the temperature will come down ,when it is under the value , the controller can running again in limit current mode. We recommend about 80, it should be smaller than the unwork temperature
Limited current temperature	When controller temperature exceed the value ,it will limit current output, and the motor torque will be limited” We recommend about 70, it should be smaller than the Rework temperature

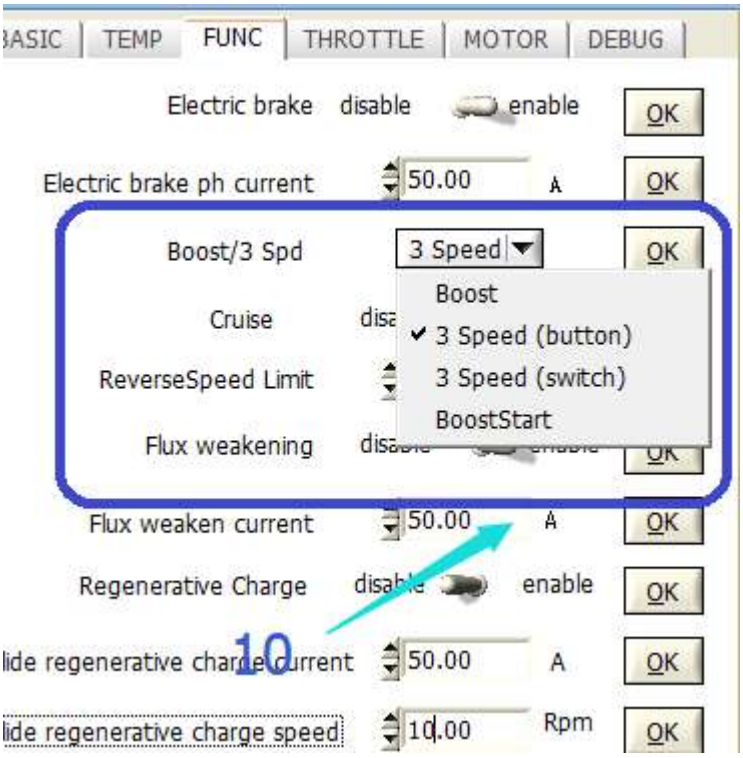
五、 FUNC TAB: function setting

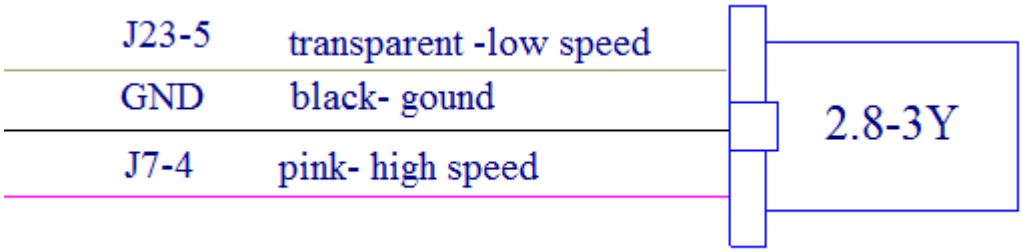


Parameter Name	Description
Electric brake disable or enable	if enable the electric brake, when brake switch is valid, the e-brake try to prevent the motor running and charge the battery; if disable the electric brake, when brake switch is valid, the controller just close the pwm output and let the motor to speed down by itself
Electric brake ph current	It set the strength of the e-brake ,it base on the motorcycle weight and driver feel. The bigger the value ,the stronger the brake effect. We recommend about 50a,it should not exceed the max phase current.
Boost/ 3 spd	If the controller does run in limit speed mode , it will belong to one of the set mode here
Reverse speed limit	Limit the speed in reverse mode . it does not limit the reverse torque. Value range：0~100%

Flux weakening enable or disable	If disable ,the max speed will reduce about 10~15%, and will extend the max mileage greatly. If enable ,the max speed and max dissipative current will be improved about 10~15%t the factory set is enable.
Flux weaken current	When the value is below 50, it will improve the max speed with economic dissipative current , when the value exceed 50 , controller will consume much more current to improve speed ,and the controller temperature will rise very fast. Value range : no more than 80A , we recommend about 50A.
Regenerative charge	If enable ,the controller will prevent the motor when release throttle. If disable ,the controller just close the pwm output and let the motor speed down by itself when release throttle.
Regenerative charge current	The value is valid only when the regenerative is enabled. The value decide the strength to prevent the motor . it base on the motorcycle weight ,motor speed and driver feel. range ： 0A~max phase current, we recommend 50A
Regenerative charge speed	The value is valid only when the regenerative is enabled. When motor speed exceed the value ,controller will prevent the motor . if speed is under the value , controller stop to prevent the motor range：1~1000rpm , we recommend 10

六、 Boost /3 spd





The picture is 3 spd connector。 The black is battery negative ,we call ground wire

Boost mode：

if boost mode is selected, when the pink wire connect to ground wire and disconnect after about 1 second(use a button). the controller will enter boost mode and limit dc current according to the" boost dc current "setting. it will quit the boost mode after 30 second automatically.

Boost start mode：

If booststart mode is selected, every time when the motor spin from zero speed, the controller will limit the dc current according to the" boost dc current "setting. after about 3 second, it will limit dc current according to "dc limit current" automatically

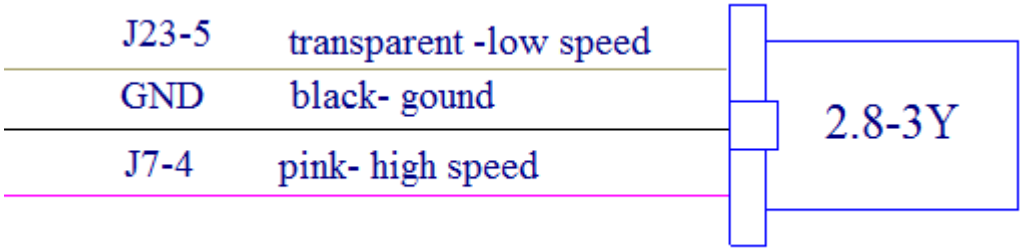
3 speed (button)：

If 3 speed (button) is selected.

Use a button(which can be reset by itself) to connect the pink wire and ground wire.
push it and release ,the speed gear will change according as follows:：
3-2-1-2-3-2-1-2-3-……
When power on ,the controller is in 3 gear mode (high speed mode)

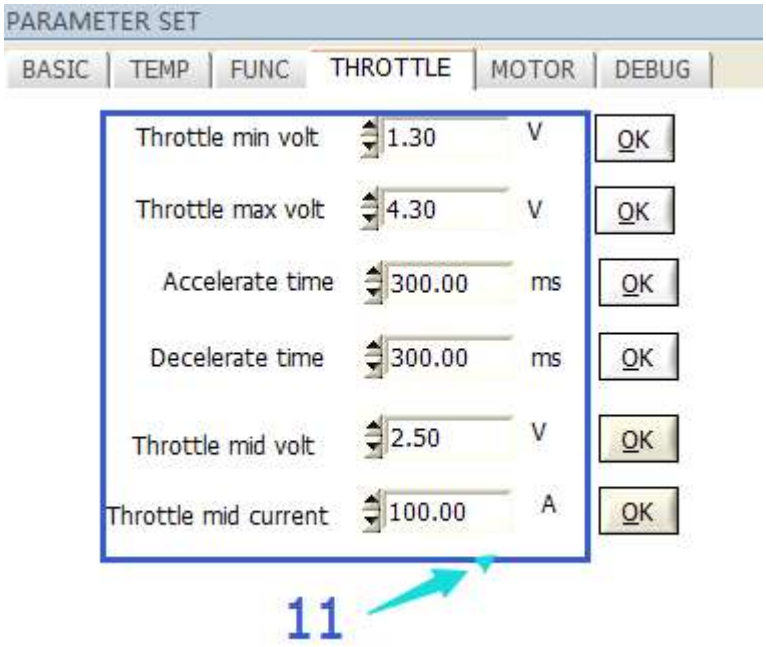
3 speed (switch)：

Use such switch to realize the 3 speed(switch) mode.

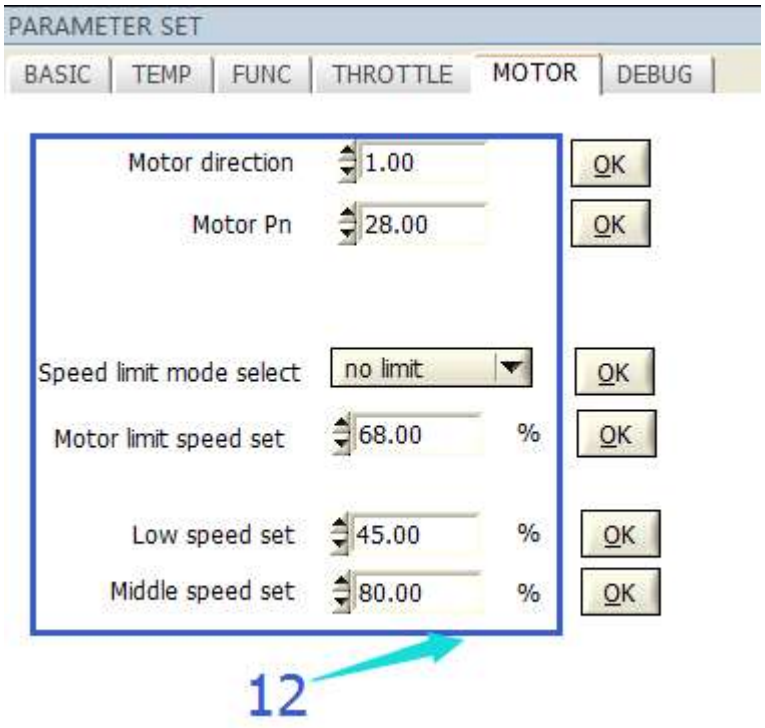


if 3 speed (switch) mode selected,
Connect the pink and ground wire. Enter high speed mode
Connect the transparent and ground wire. Enter low speed mode
Disconnect pink ,transparent wire and ground ,enter middle speed mode

七、 THROTTLE TAB



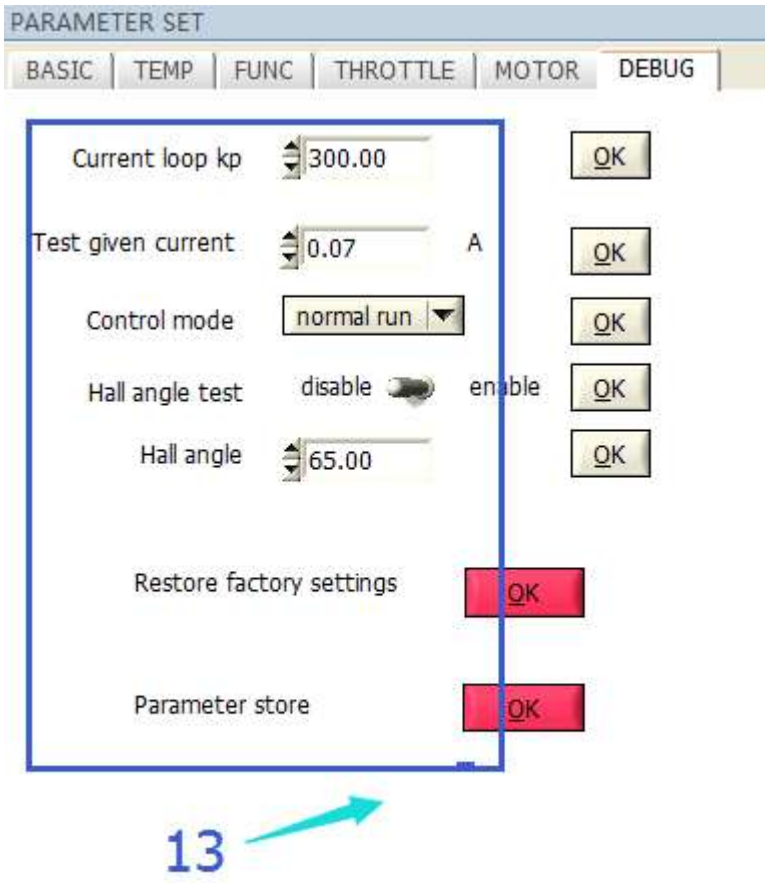
Parameter Name	Description
Throttle min volt	It mean throttle min valid voltage, only throttle real voltage is higher than the value, the controller will output pwm. How to set the value? It should be 0.3~0.5V higher than the throttle value on the interface when release throttle .
Throttle max volt	It should be 0.3~0.5V lower than the throttle value on the interface when throttle is in max position .
Accelerate time Decelerate time	If motor direction is 0. The smaller the accelerate time, the accelerate faster The smaller the decelerate time, the decelerate faster If motor direction is 1. The smaller the decelerate time, the accelerate faster The smaller the accelerate time, the decelerate faster Value range：10~800
Throttle mid volt	Value range：2.0~2.5V
Throttle mid current	The value distribute the output phase current command. The bigger the mid current , the bigger the output torque in first half throttle span. vice-versa Value range: 1⁄3~2⁄3 of max phase current



八、 Motor tab

Parameter Name	**Description**
Motor direction	Only 0 or 1 can be set. It is used to change the spin direction of motor
Motor pn	According to the real motor pole-pairs
Speed limit mode select	Intern set: the max speed will limited according to the "motor limit speed set" Extern set: if the extern speed limit switch is valid, the max speed will limited according to the "motor limit speed set" No limit：the speed will be limited according to the gear in 3 spd mode
Low speed set	Under 3 spd mode, the low speed will be limited according to the low speed set
Middle speed	Under 3 spd mode, the middle speed will be limited according to the middle speed set

Remark : to use 3 spd mode, " no limit" must be selected



九、 DEBUG TAB

Parameter Name	**Description**
Current loop kp	If the driver feel shake obviously ,maybe we can modified the value to have a try. Generally ,for 10 inch hub motor ,use 1000 ,other type motor use 300
Test given current	Value range:10~30A, generally use 15A to do test. If the motor with great reluctance force, just improve the value to make it spin evently
Control mode	Normal mode or hall test mode selected
Hall angle test	
Hall angle	When main interface indicate the hall angle test ok , the hall angle will be updated after switch another tab(not DEBUG TAB) and then back to BEBUG TAB. If we know the hall angle in advance ,input the angle directly without hall angle testing.

Reset factory setting	If execute the command, Controller will use the factory setting
Parameter store	If execute the command, all modified parameters will be saved after next powered on