

Parameter Setting and Function adjustment

BASIC

-DC limiting current

Take SVMC072150 for example, the limiting current is 150A, it means, under the enough battery capacity condition it can output 150A to the controller at maximum; The DC current will affect the climbing torque.

1, If there is no “3 various speed” or “boost” in the controller, or these 2 functions are not valid, the “max DC current” is not effective, the rated DC current can be equal to the max DC current.

-----1) For controller with 60A as a limiting DC current, the rated DC current is 20~60A.

-----2) For controller with 80A as a limiting DC current, the rated DC current is 20~80A.

-----3) For controller with 100A as a limiting DC current, the rated DC current is 30~100A.

-----4) For controller with 150A as a limiting DC current, the rated DC current is 50~150A.

If “boost” or “3 various speed” function is required, the max DC current should be 50% higher than the rated DC current so as to get better performance.

-----1) For controller with 60A as a limiting DC current, the rated DC current can set 30A, while the max DC current set “60A”

-----2) For controller with 80A as a limiting DC current, the rated DC current can set 40A, while the max DC current set “80A”

-----3) For controller with 100A as a limiting DC current, the rated DC current can set 50A, while the max DC current set “100A”

-----4) For controller with 150A as a limiting DC current, the rated DC current can set 80A, while the max DC current set “150A”

-Phase current adjustment,

Rated phase current

This value is just for users' reference, usually they don't need to modify it. “Rated phase current value” is usually set by our engineer to protect our controller. It works like this, when the controller detects the present phase current is more than the “rated phase current” for 3 minutes, this situation will be regarded as an “overload” fault. To protect itself, the controller will stop work. And to get rid of this problem, one need to turn off the power. Normally, the rated phase current could be set around 50% of the max working phase current.

The max working phase current means the max current the controller can output in a short period, it can last for 60 seconds, the overtime output will shut down the controller because of the block protection, to get rid of this status, one need to turn off the power, and re-power up.

Throttle max volt corresponds to the max phase current, the max phase current corresponds to the max torque output and it can affect the starting acceleration and climbing torque.

The recommended setting of max phase current for different models are as below,

-----1)For the controller with the limiting DC current 30~50A ,the rated phase current setting is 50~90A.The max phase current setting is 90~150A,the “protected phase current” is 180A.

-----2) For the controller with the limiting DC current 60~80A ,the rated phase current setting is 60~100A.The max phase current setting is 100~200A,the “protected phase current ” is 250A

-----3)For the controller with the limiting DC current 100~120A ,the rated phase current setting is 80~120A.The max phase current setting is 120~250A, the “protected phase current” is 300A

-----4)For the controller with the limiting DC current 150A ,the rated phase current setting is 100~180A.The max phase current setting is 180~350A,the “protected phase current” is 450A

(Remark: the above setting is for your reference. One can adjust the parameter as per personal preference)

TEMPERATURE

-The default setting of the “Unwork Temperature” is 100°C,which means if the temperature of the controller reaches 100°C,to protect the motor and the controller, it will stop work.

-The default setting of the” Rework Temperature” is 90°C which means the controller will start to work again, when the controller has cool down to 90°C after a “over-temperature protection”

-The default setting of the “limited current temperature” is 80°C which means the if the controller reached 80°C during the runtime, to protect the controller in advance, the controller will start to limit the phase current output. So the max working phase current at this moment will automatically be limited to the rated phase current value, so as to reduce the temp rise.

FUNCTION ADJUSTMENT

E-brake

Enabled: The controller will output the e-brake signal ,if it is activated. afterwards, the motor will generate the reversing field to achieve flexible braking, in the meanwhile, the controller will start to recharge the battery .

And while the e-brake is working, the general brake shall be disabled first.

Cruise

Enabled: When pressing the cruise button, after the throttle has been in a fixed position for 2 seconds, the e-scooter will come to the cruise status. And this status will disappear while one uses the throttle again or pull the brake.

BOOST

Take SVMC048080 as an example,
If the rated DC current set “35A”, it is better to set the max DC current “80A”. After the boost is enabled, pressing the button for 2 seconds, and the boost function will come. After one minute the boost will automatically disappear or it will exit if one pull the brake or cut off the power as well. (It is for instant acceleration)

Reverse speed adjustment

Take the vehicle weight and the loading weight into consideration, adjust the reverse torque and speed by adjusting the reverse current; the reverse current is between 10~150A, the set current could not exceed the max phase current of the controller.

Flux weakening

Enable the flux weakening and increase the flux weakening current, so as to raise the running speed. However, the higher the flux weakening current is, the more power it will consume. Basically, the flux current value is 10~100A. The high flux weakening current is, the more power consumption it is.

Slide Recharge

It is one of our regeneration mode which works like this: when the controller detects the scooter is running with the throttle totally released (downhill), then the controller will give the motor a braking force and recharge the battery. By setting different values of "Slide recharge ph current" in our software, the braking force can be adjusted. And the "slide recharge speed" means when the speed decreased to this value, the braking force will disappear.

Throttle

Throttle min volt means the inspecting voltage when the throttle position is “0” after power on.

Throttle max volt means the inspecting voltage when the throttle is fully twisted after power on.

The throttle min volt should be set at least 0.1V higher than the voltage which was inspected when the throttle position is “0” after power on, or the controller will suffer

throttle protection fault when power on.

Starting torque adjustment.

The throttle max volt should be set the same as the value which was inspected when the throttle was fully twisted after power on.

Improve the starting torque by reducing the value of “throttle middle volt” which is between “3.5V~2V”.And by raise the throttle middle phase current one can improve the starting torque as well.

-----1)For the controller with a limiting DC current is 60-80A, it is recommended to set the throttle middle phase current 60-120A.

-----2)For the controller with a limiting DC current is 80-100A, it is recommended to set the throttle middle phase current 80-150A.

-----3)For the controller with a limiting DC current is 100-150A, it is recommended to set the throttle middle phase current 80-200A.

The acceleration or deceleration time

The less the “acceleration time” or “deceleration time” is, the faster the throttle will response ,(It is forbidden that the time set over 2000ms); One could adjust the parameter to suit own driving habit within the range (less than 2000ms)

Motor

Motor direction,

After the motor hall is matched, if the motor spins backwards, you could change the direction by changing the value here(switch from 0 to 1 or from 1 to 0)

Motor Pn,

Two magnet steels will be counted as a pair of pole; For example Motor pn is “20”for a motor with 40 pcs of magnet steel;

Motor LMD

This parameter is only useful to our engineer during the adjustment, so normally the customer can ignore this value.

Speed limit

Intern speed

For each of our controller, user can limit the maximum speed in our software. If the “motor limit speed set” is 50% it means the current maximum speed is limited to 50% of the original maximum speed.

Extern limit

Some users need to limit the maximum speed during their driving, in this case, we will offer a “speed limiting” function cable, that when the cable is connected with a ground 0V,the speed limiting is enabled.

Debug

Current loop kp

For 12,13 or 14 inches motor ,the current loop kp is normally around 299,For 10 inches motor, the value is normally around 999.The parameter will be different for different motors as the technique and craft is different too. One could adjust the value by himself to suit their motors. But this value shall not exceed 3000.

There is no need to adjust the “current loop ki” normally.

ID cmd

(cmd is short for command ,and "id" is also a parameter used by our engineer in our algorithm)

It is only useful when the users are performing the hall angle test, for different motors ,the value can be different too. Normally user can start with the value 10~15,if the motor spins, it is OK; but if the motor is still, increase the value to“20” “30”or more one by one until the motor starts to spin. Normally the value should not exceed 30.