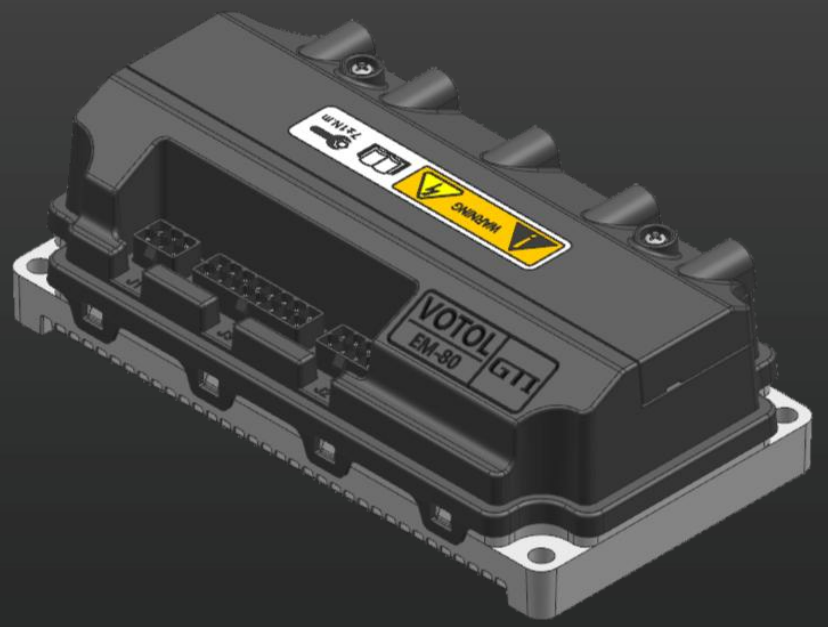
SiAECOSYS®

Controller Debugging Manual

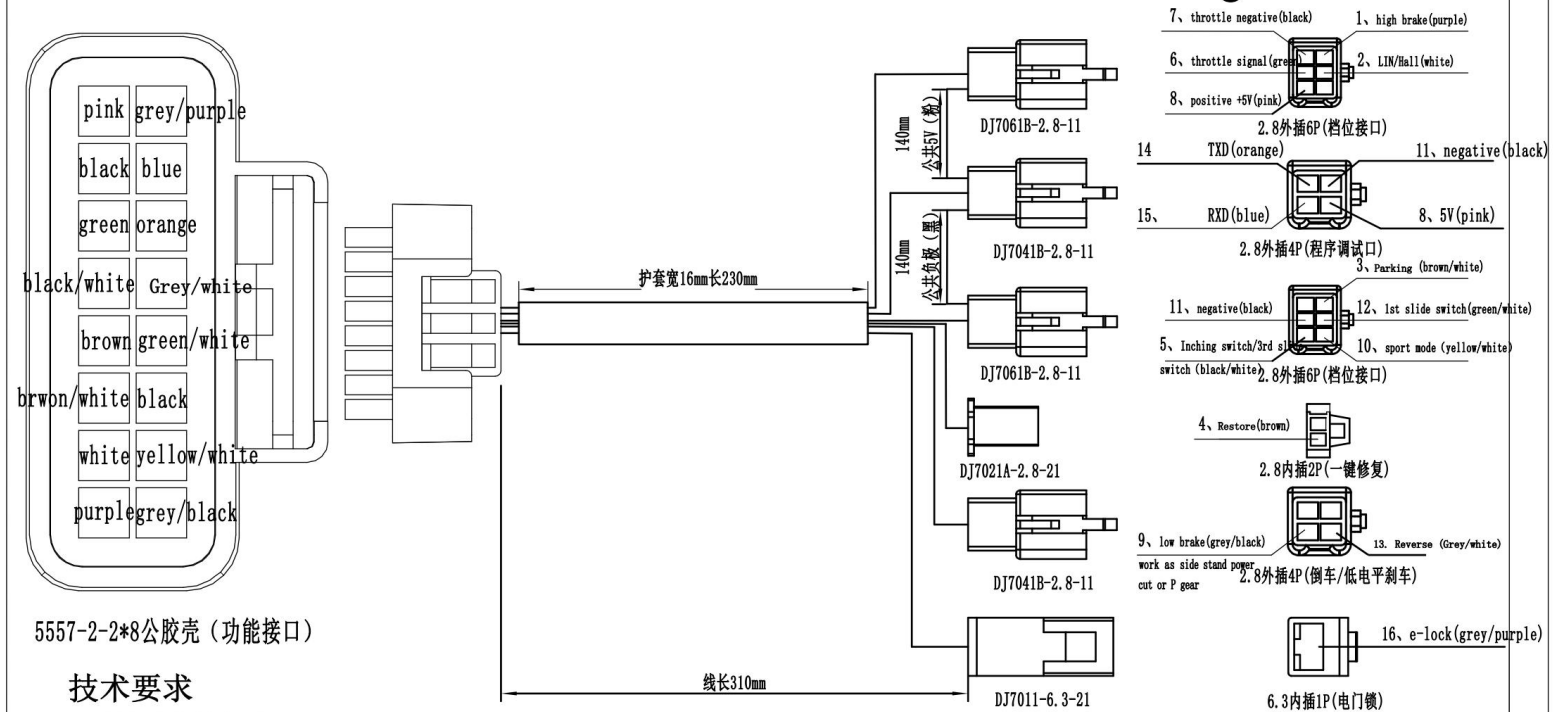
2023.05.01

contents

Wiring instructions



SIAECOSYS 2x8 main function wiring



5557-2-2*8公胶壳（功能接口）

技术要求

1、所有电线线径采用0.3mm2。
2、所有插件采用镀磷铜插件；
所有插件采用“振特”品牌。
3、线长按照图纸标示。
4、塑料插件为增强尼龙。
5、线头拉脱力要求45~60N之间。
6、端子与公交壳拉脱力要求60N以上。
7、所有5557插头端线束必须打胶。
8、所以5557插头端必须放置专用防水硅胶垫。

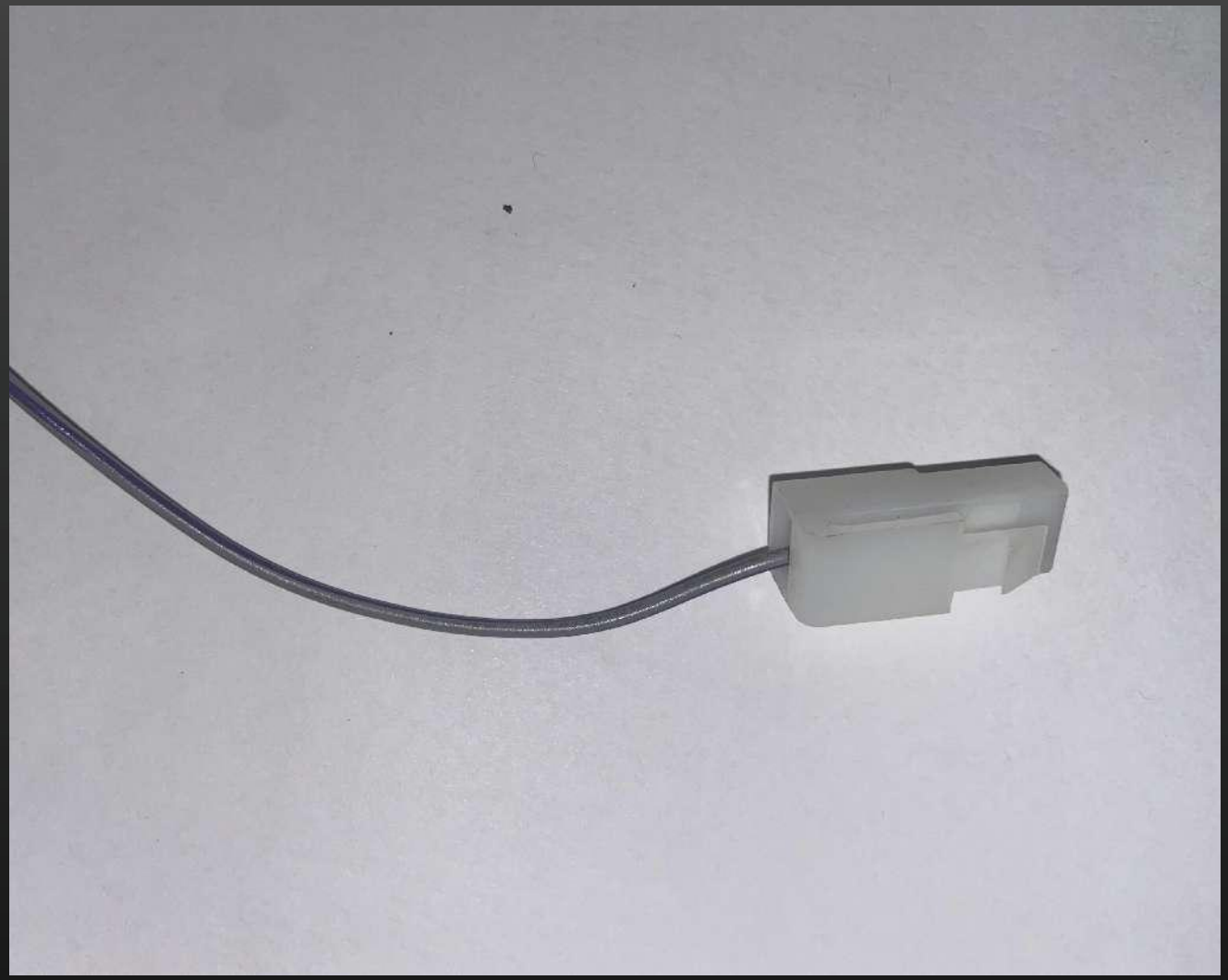
5557-2（2*8主线缆）		
客户：	技术：	
	生产：	日期: 2020.05.07
客户编号：	质检：	单位：mm
备注：		
客户单位确定 签字盖章 (销售部)		

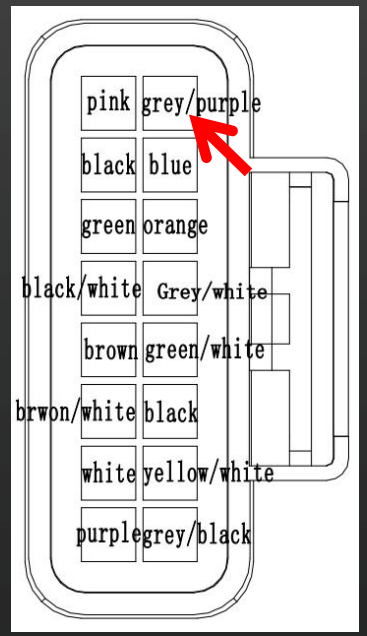
Wiring instructions

1.1Function wires

E-lock connector （grey/purple）

Connecting with ignition key





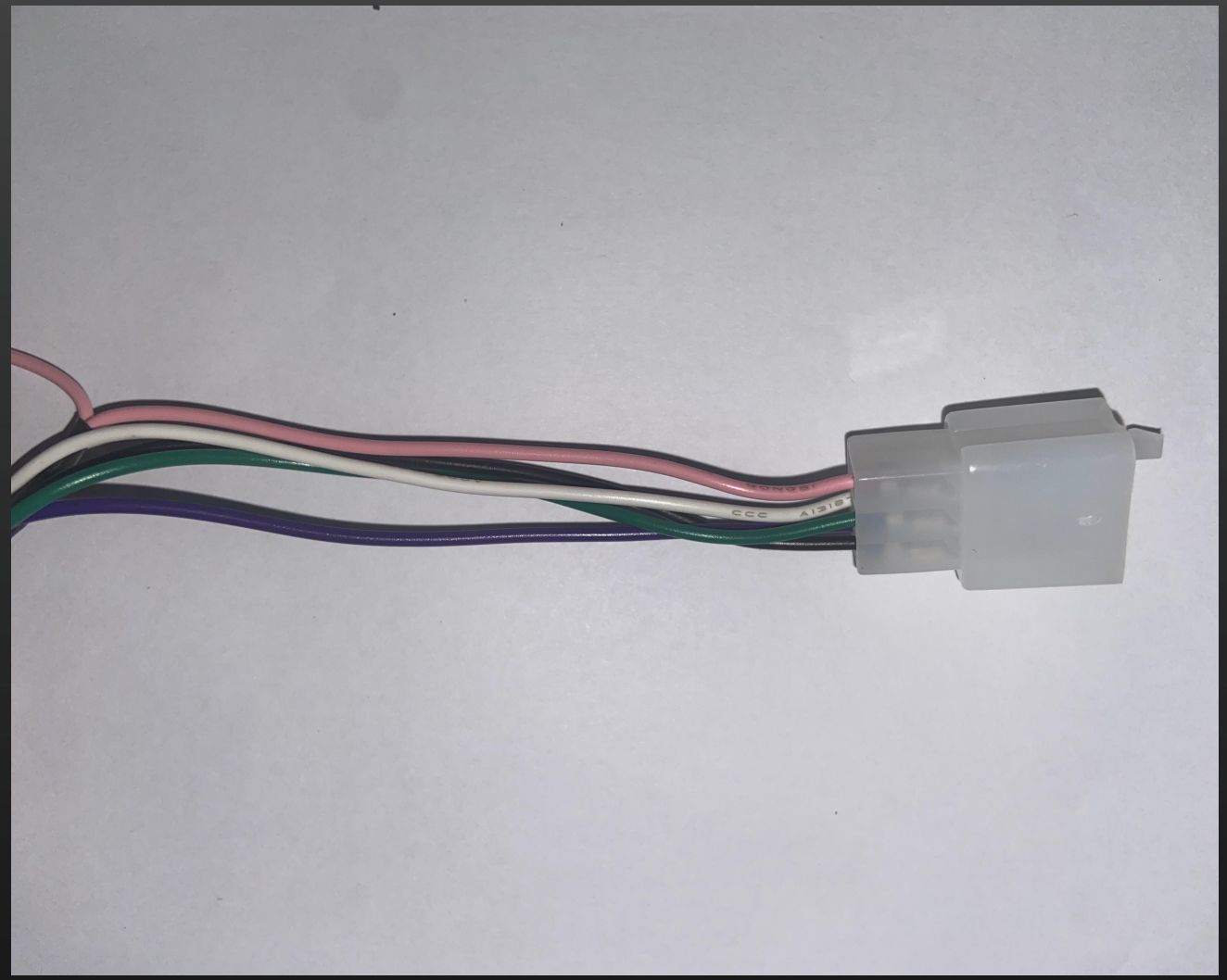
E-lock (grey/purple)	**Connecting with ignition key**

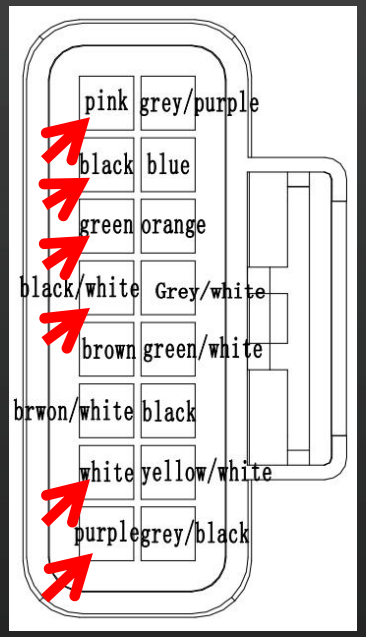
Wiring instructions

1.1Function wires

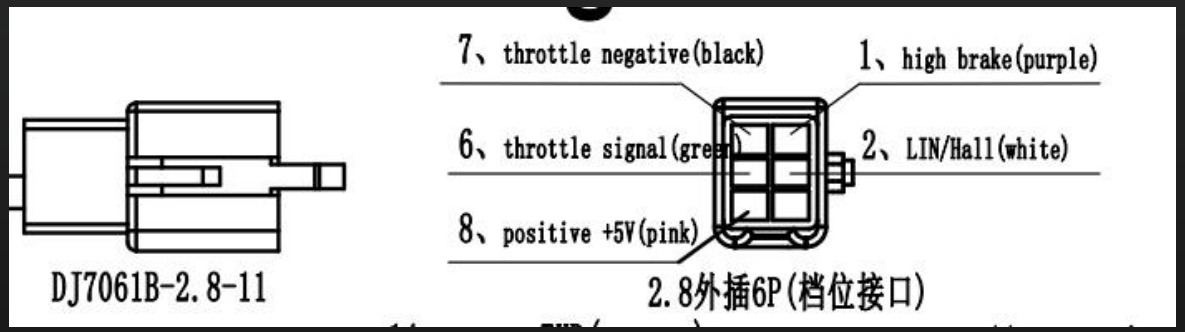
Throttle connector

Connecting with throttle, display and brake





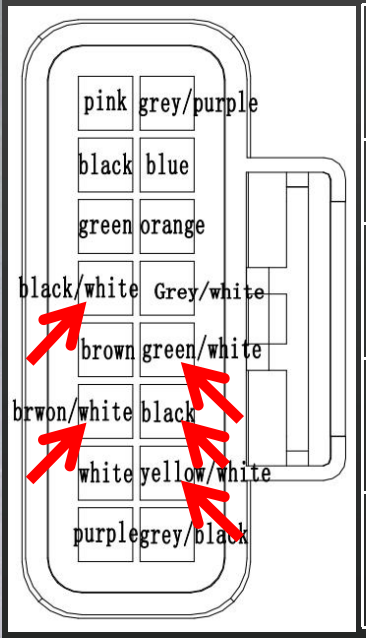
Throttle 5V+ (Pink)	Connecting with throttle
Throttle - (Black)	
Throttle signal (Green)	
Display signal (White)	Connecting with Display
Brake signal (Purple)	Connecting with brake （12V）



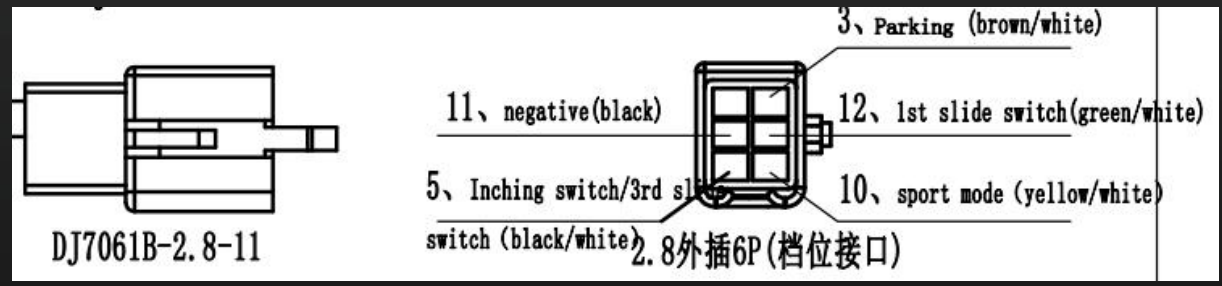
Wiring instructions

1.1Function wires

Gears connector
Connecting with gears switch



Gear 3 (Black/white)	**Connecting with gears switch, and the negative wire must be connected**
Negative - (Black)	
Gear 1 (Green/white)	
Gear Sport (Yellow/white)	
Gear Park (Brown/white)	

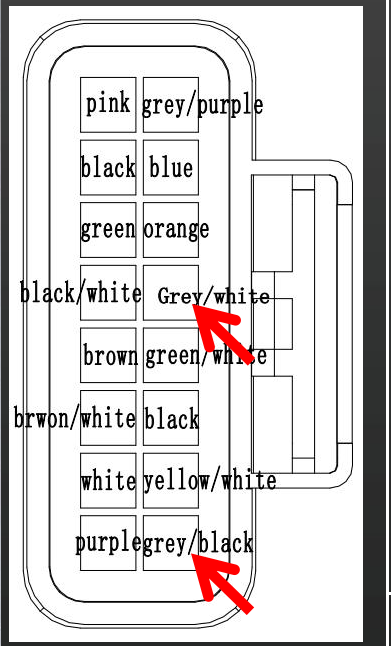


Wiring instructions

1.1Function wires

Back & kick stand connector

Connecting with back switch and kick stand switch



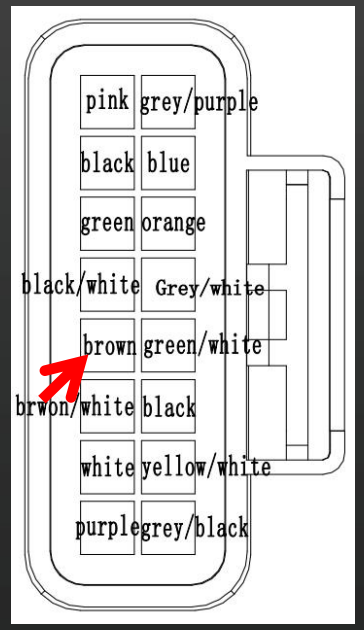
Back (Grey/white)	1、Connecting the reverse switch with GND 2、Press the button and apply the throttle, the motor will in reversing rotation
Kick stand (Grey/black)	1、Connecting the kick stand switch with GND

Wiring instructions

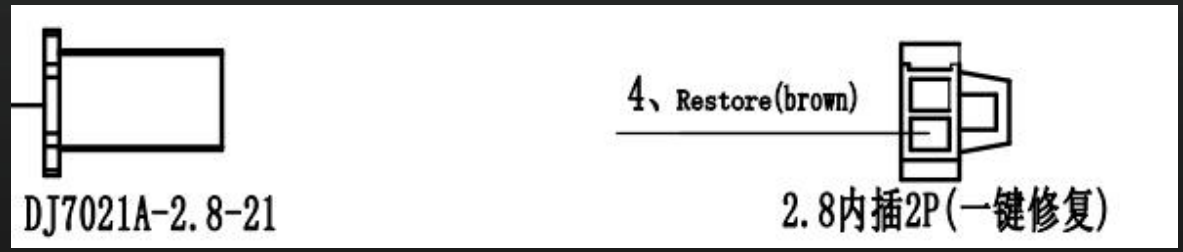
1.1Function wires

Restore connector

Connecting with restore button



Restore (Brown)	1、When the throttle and brake errors appear, double-press the restore button and with long press at second time to active resote function

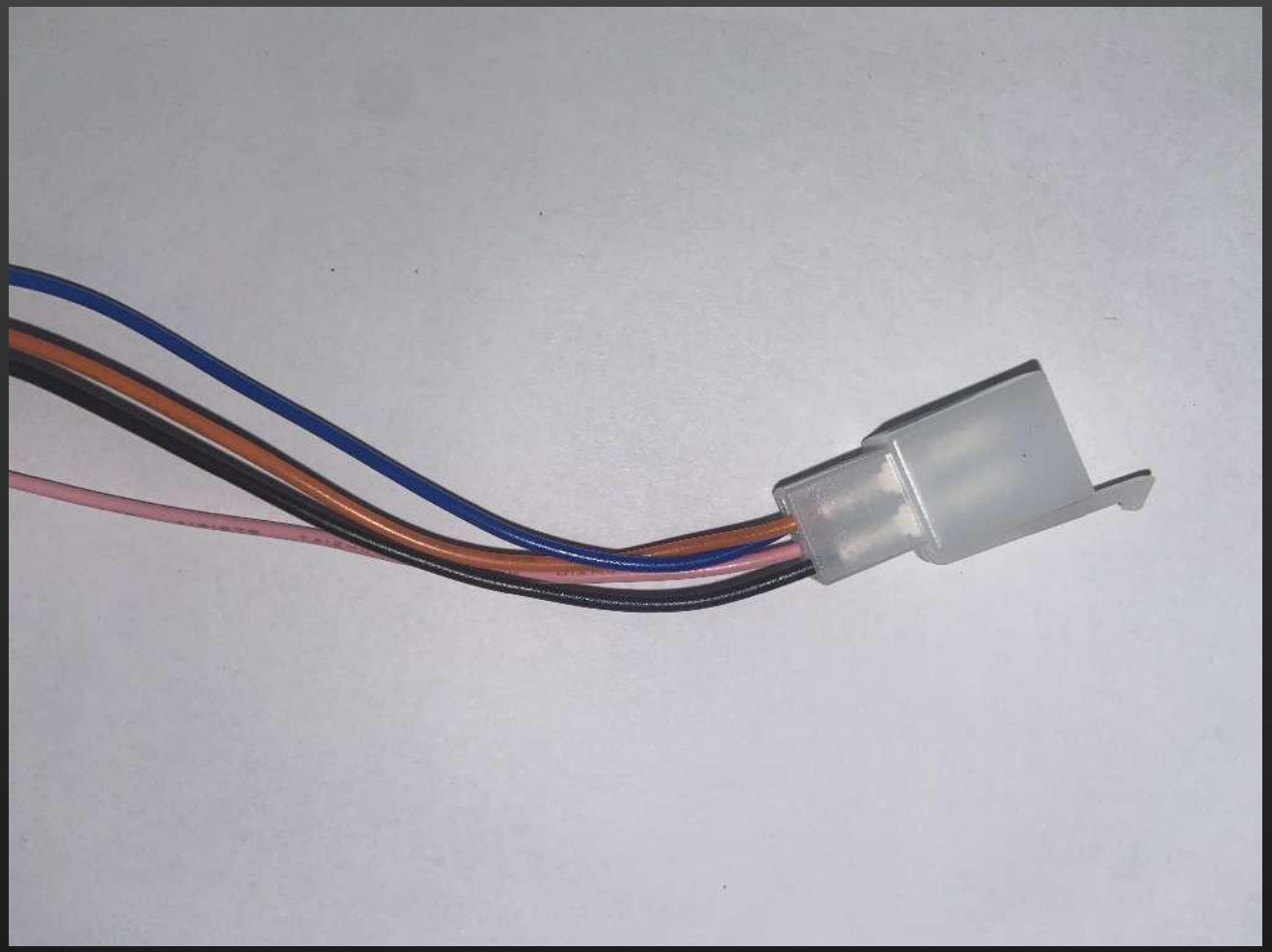


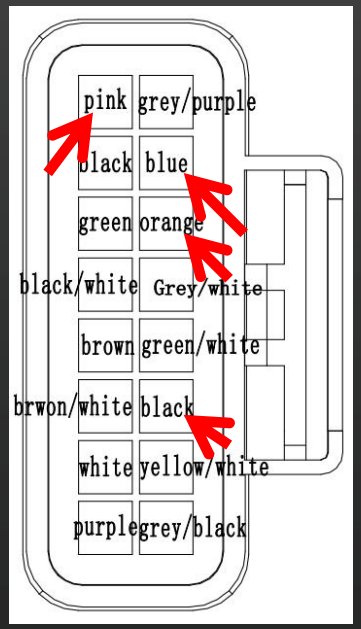
Wiring instructions

1.1Function wires

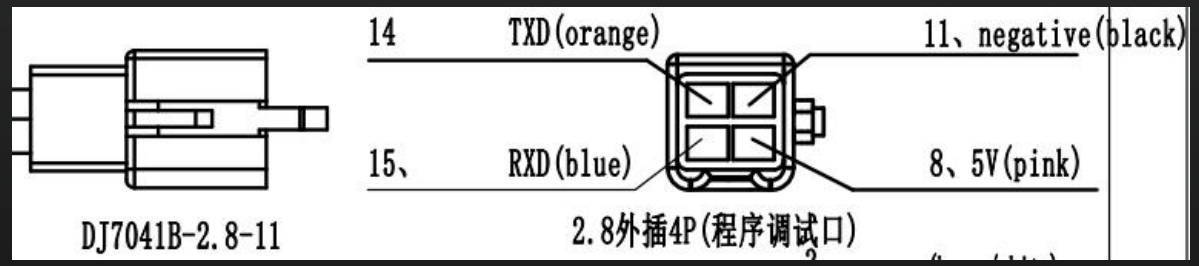
Debugging connector

Connecting with PC USB cable and bluetooth



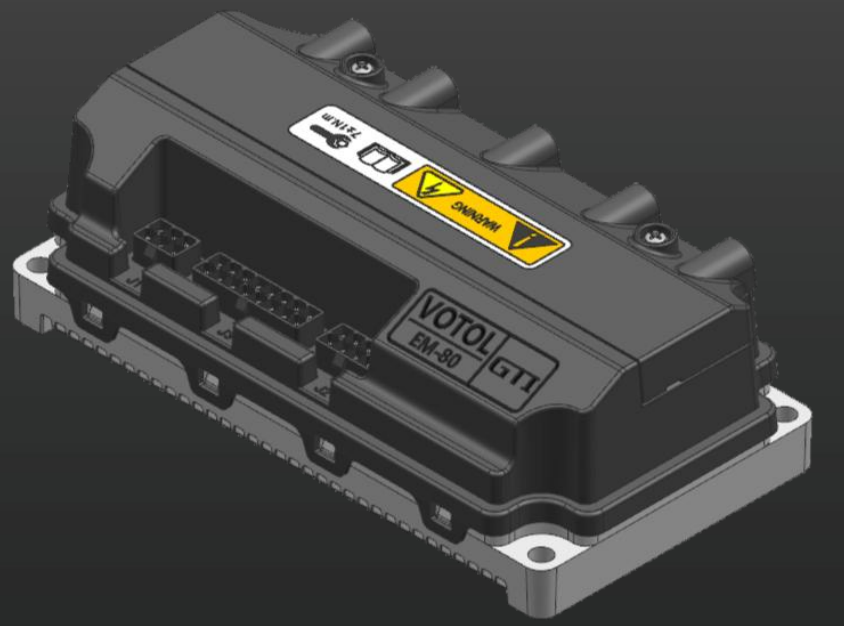


5V (Pink)	1、Connecting with programmed USB cable and bluetooth (Don’t plug and unplug when the controller is powered on)
Negative pole (Black)	
Debugging RXD (Blue)	
Debugging TXD (Orange)	

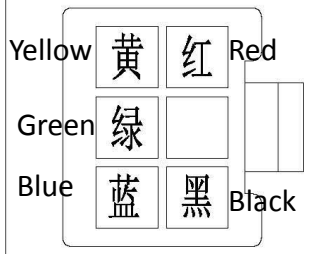


Wiring instructions

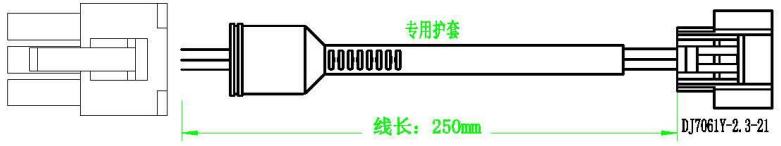
1.2 HAll Connector

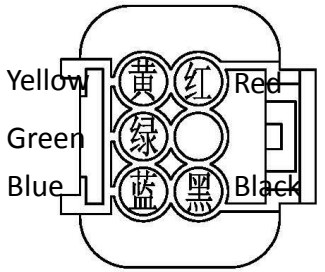


蓝德电子科技有限公司(事业三部)



大5557-4.0-2*3公胶壳(霍尔接口)





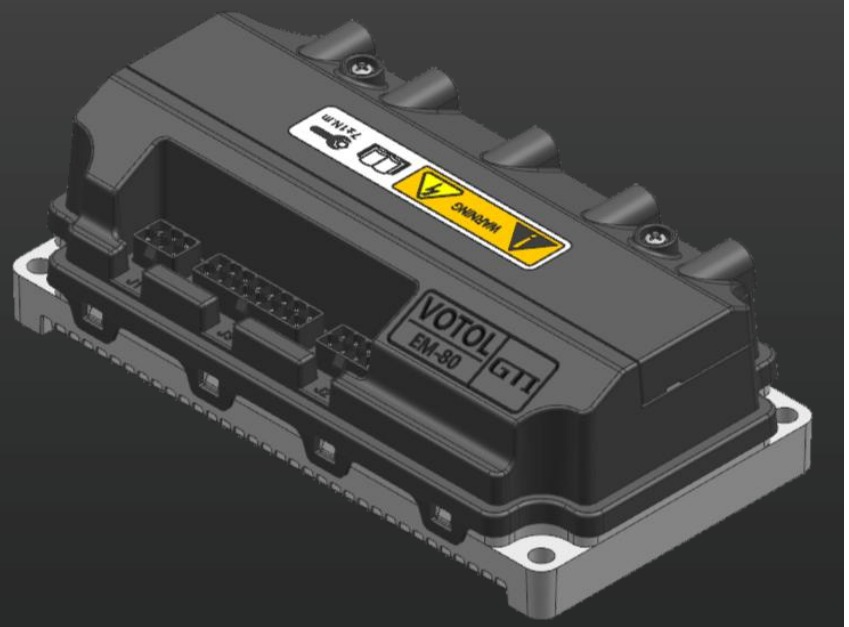
技术要求

1、所有电线线径采用0.3mm2。
2、所有插件采用镀磷铜插件；
所有插件采用“振特”品牌。
3、线长按照图纸标示。
4、塑料插件为增强尼龙。
5、线头拉脱力要求45~60N之间。
6、端子与公交壳拉脱力要求60N以上。
7、所有5557插头端线束必须打胶。

VOTOL 蓝德科技	大5557劲浪转接线(2*3霍尔转接线)	
客户：劲浪	技术：	
	生产：	日期：2020.09.09
客户编号：	质检：	单位：mm
备注：		
客户单位确定 签字盖章 （销售部）		

Wiring instructions

1.3 Anti-theft connector



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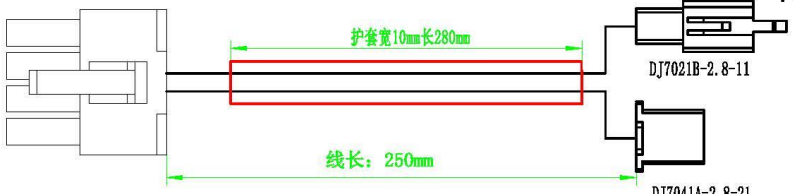
Black 黑 红 Red
橙 Orange
黄 Yellow
蓝 Blue

大5557-4.0-2*4公胶壳（防盗接口）



Black
Red
Negative pole(Black)
4、防盗负极（黑）
黑
红
8、电瓶正极（红）
Positive pole (Red)
2.8外插2P

Power input (Orange)
7、防盗电源输入（橙）
橙 Orange
黄 Yellow
蓝 Blue
6、防盗电机轮动信号（黄）
5、防盗信号输入（蓝）
Motor movement signal (Yellow)
2.8内插4P
Anti-theft signal input (Red)

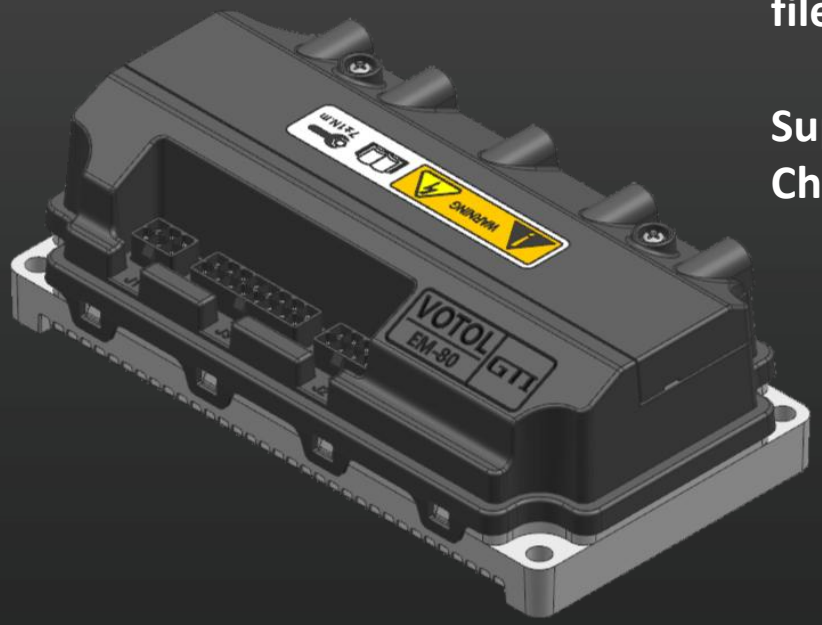
技术要求

1、所有电线线径采用0.3mm2。
2、所有插件采用普通插件。
3、线长按照图纸标示。
4、塑料插件为增强尼龙。
5、线头拉脱力要求30~60N之间。
6、端子与公交壳拉脱力要求65~80N之间。
7、所有5557插头端线束必须打胶。

VOTOL 蓝德科技	大5557乖乖兔转接线-（2*4防盗器）	
客户：乖乖兔	技术：	
	生产：	日期：2020.09.09
客户编号：	质检：	单位：mm
备注：		
客户单位确定签字盖章（销售部）		

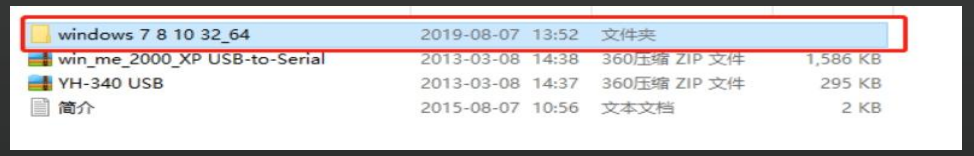
Software connection manual

2.1 Software installation

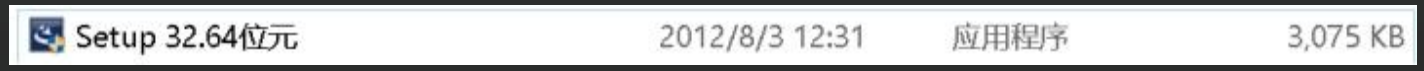


Connecting the controller to the PC with the USB debugging cable that comes with the controller, the driver will be installed.
If failed, please follow the below steps:
Decompress the file “ USB-to-serial-win10-20150814 ”， then decompress the file “ YH-340 USB ”.

Supported system： WIN7/WIN8/WIN10
Choosing and decompressing the correct file based on your PC system.



1. Decompression and start

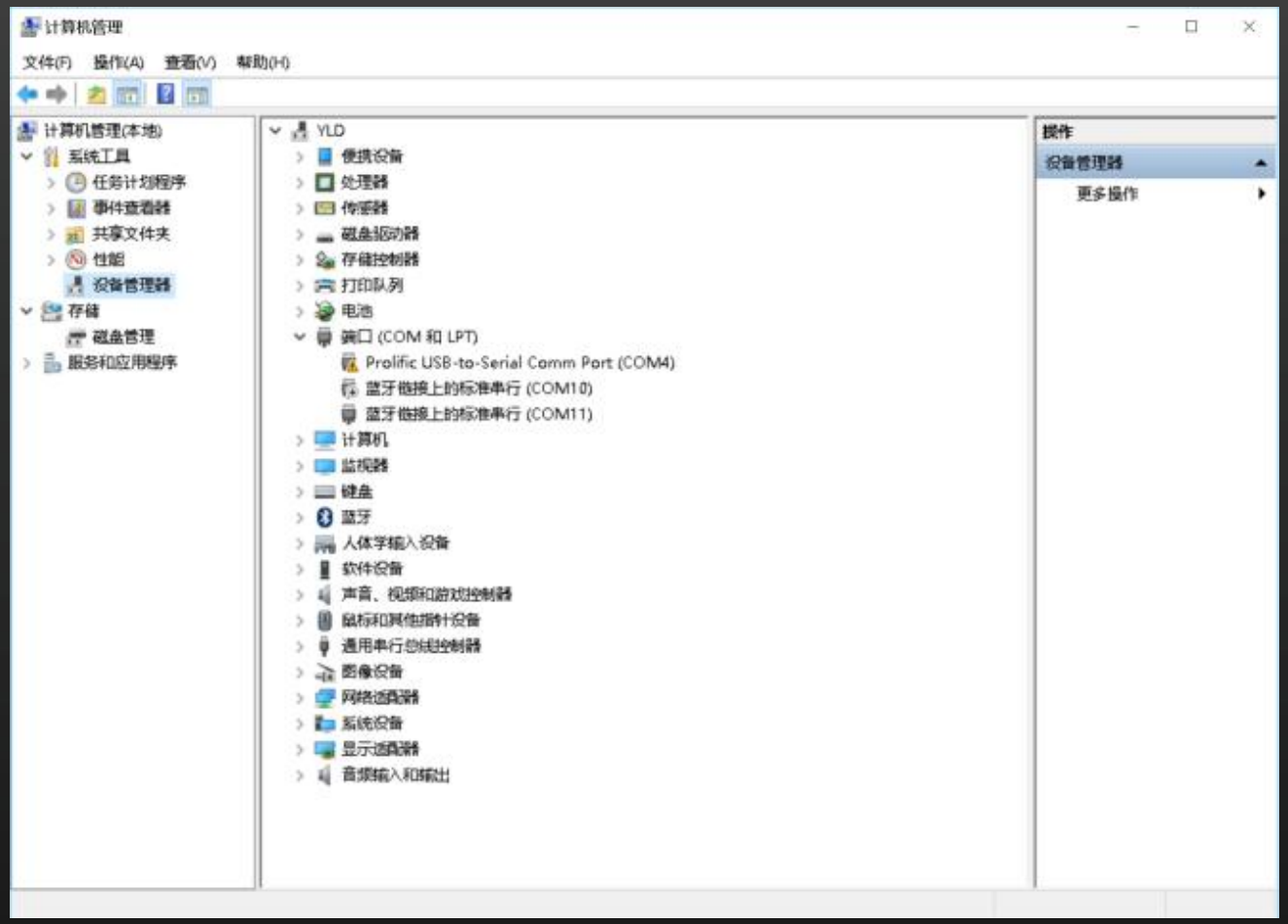


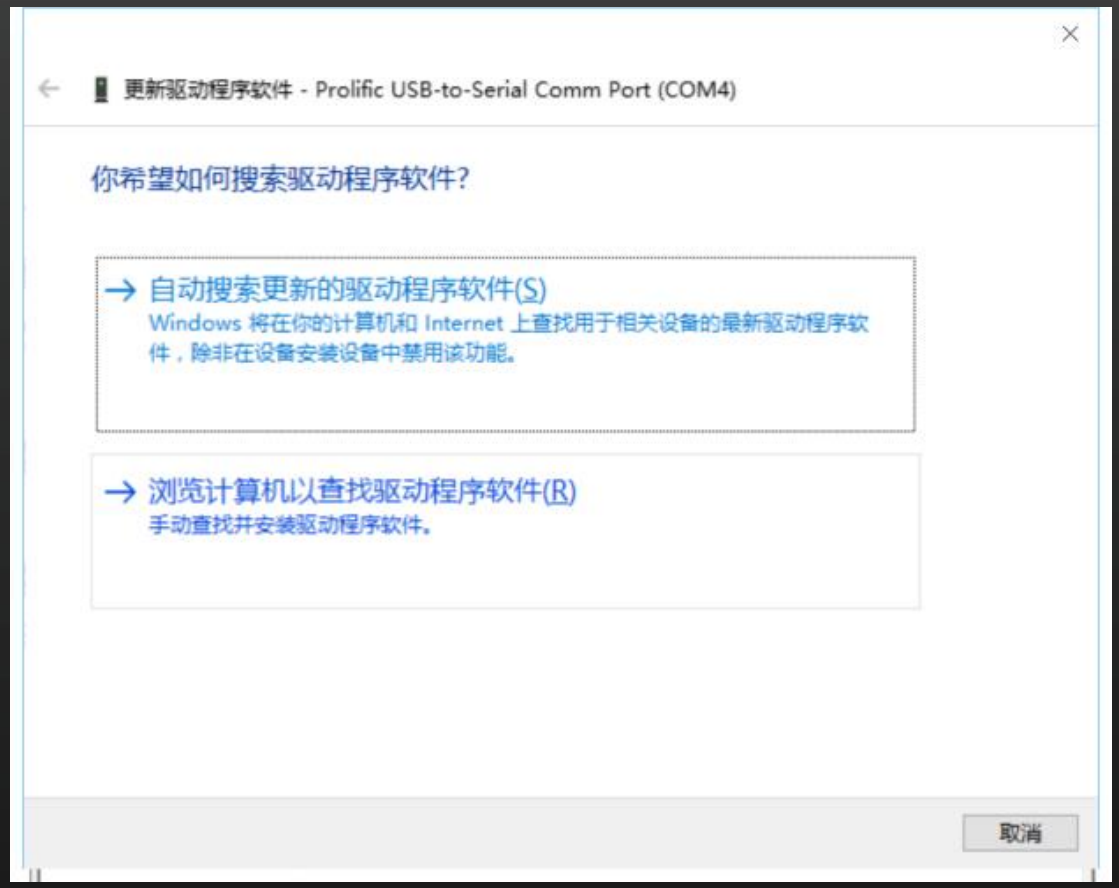
2. Installing according to the above steps
After installation, connecting the USB cable with PC.
If failed, please right click My PC and enter in the PC management interface.

Software connection manual

2.1 Software installation

Clicking “Device manager”
Clicking “COM and LPT”
Right clicking the prot with “！” and choosing “Update the driver software”





Software connection manual

2.1 Software installation

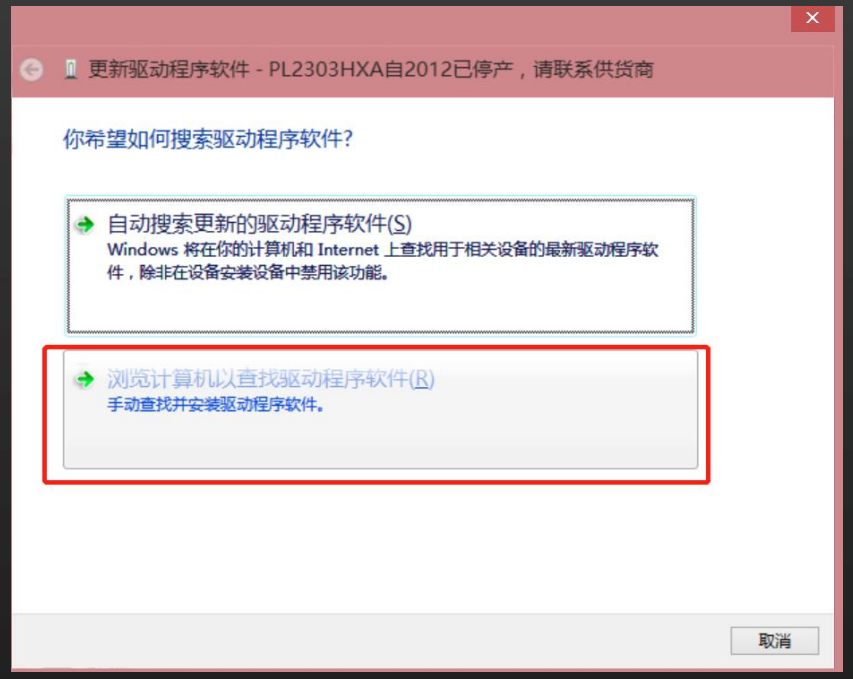
If the port shows “PL2303HXA自2012已停产”,

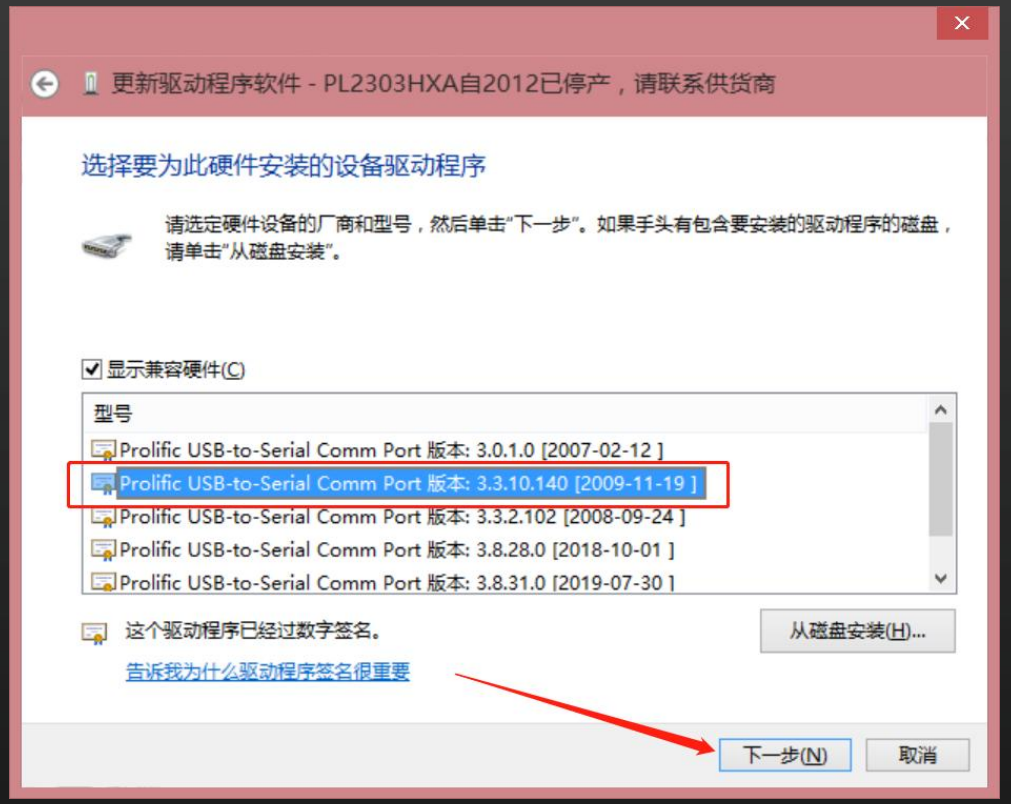
Step 1： Right clicking and choosing driver update；

Step 2： clicking browse my computer for driver

Step 3： Choosing 3.3.10.140（2009-11-19）version, and clicking next step.

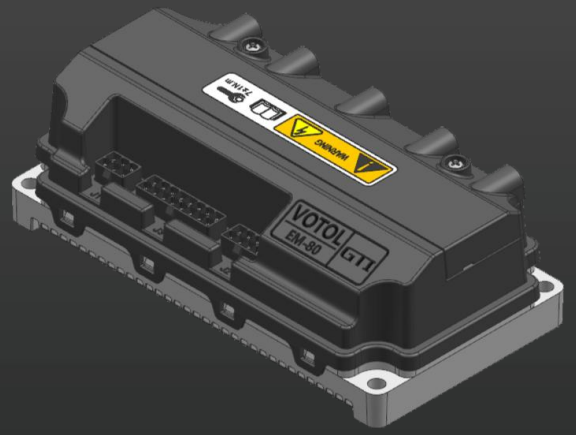
Closing the interface when finished, and start the controller software to connecting the controller with PC

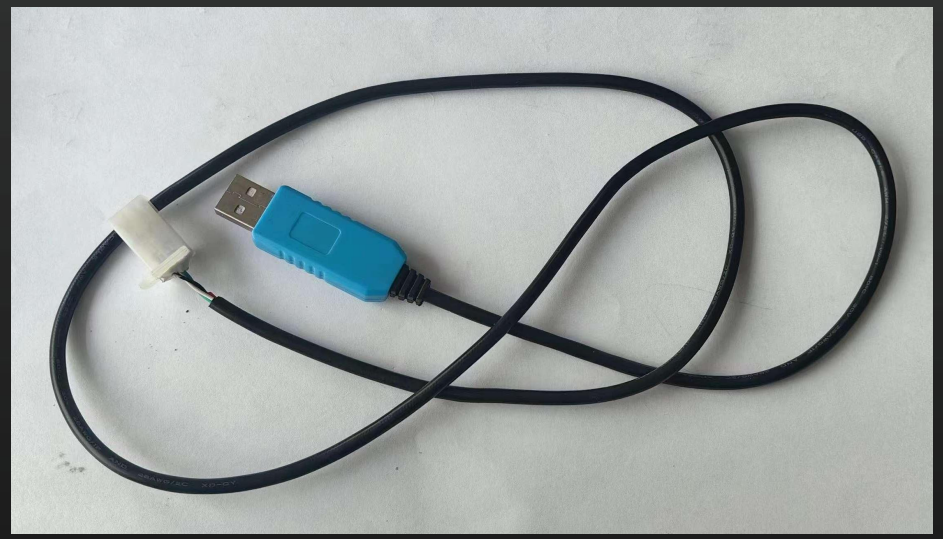




Software connection manual

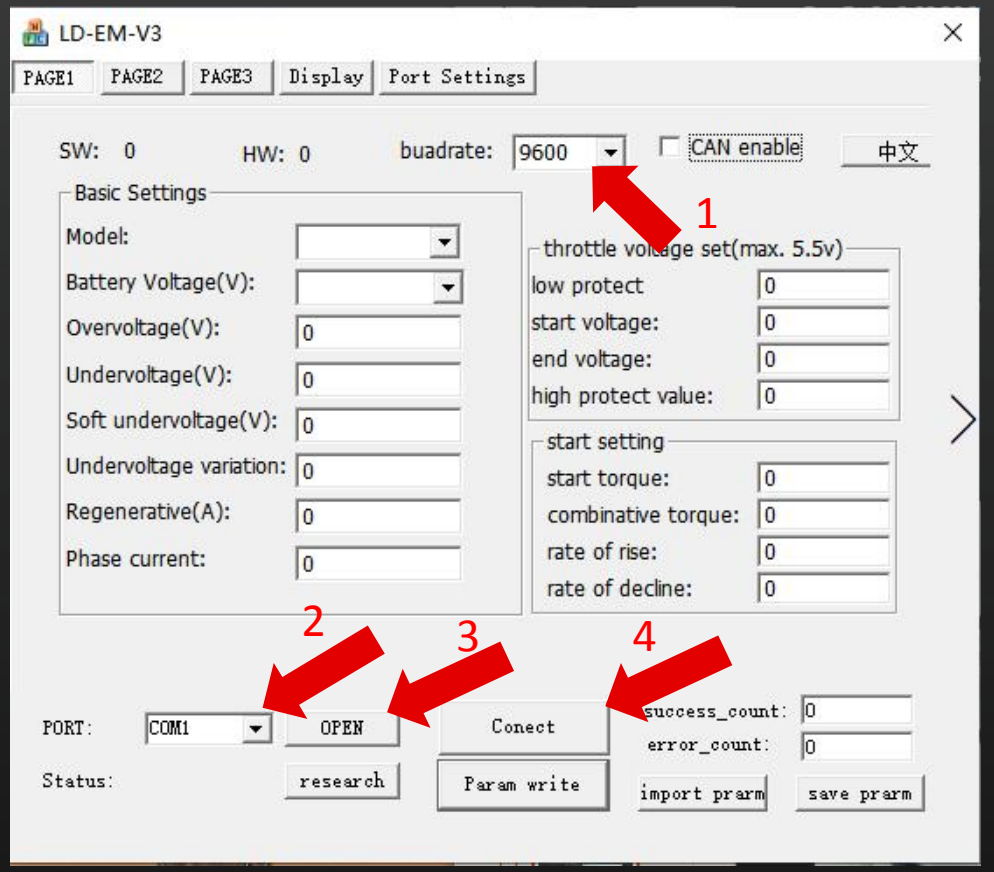
2.2 Connecting debugging cable with controller and PC





Step 1： Selecting the correct USB debugging cable according to the controller with or without CAN function；

Step 2： Choosing 9600 for buadrate, and opening the device manager to check whether the USB port is installed successfully before clicking “connect”. If it’s correct, selecting and starting the proper PC controller software, then connecting the correct port when the conroller is power on. All parameters will be showed in the software.

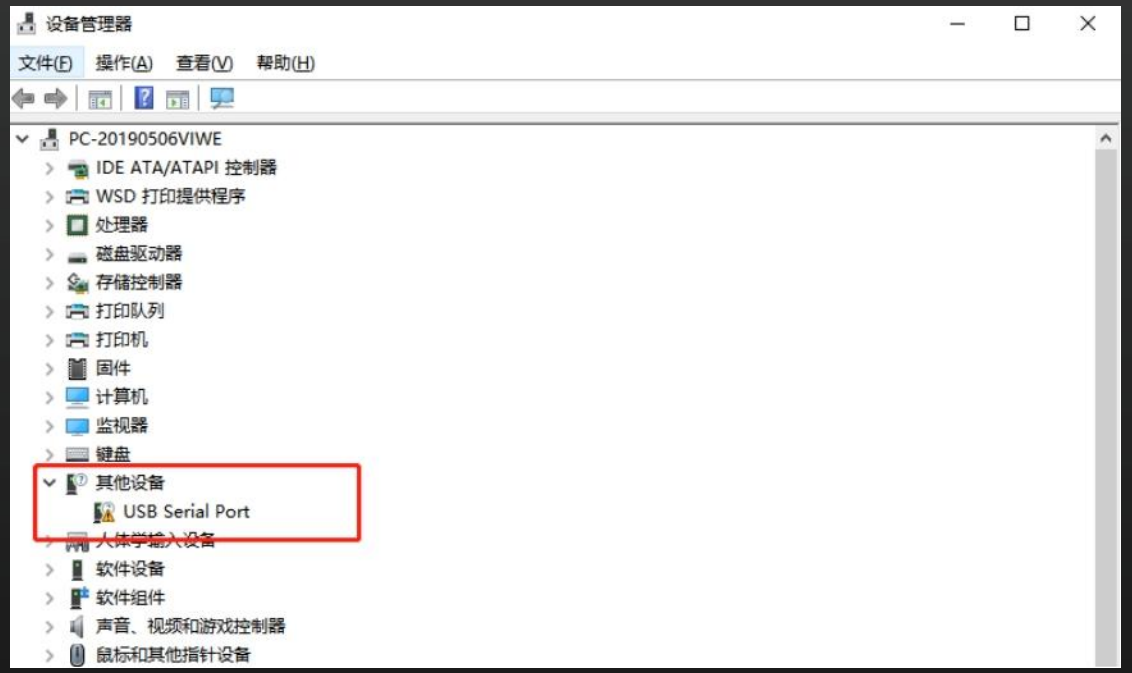


Software connection manual

2.3 Installation of debugging cable with CAN function

Step 1: Connecting the USB cable with PC, and it will be installed of itself when the PC internect is available. If not, decompressimg the ft232r driver

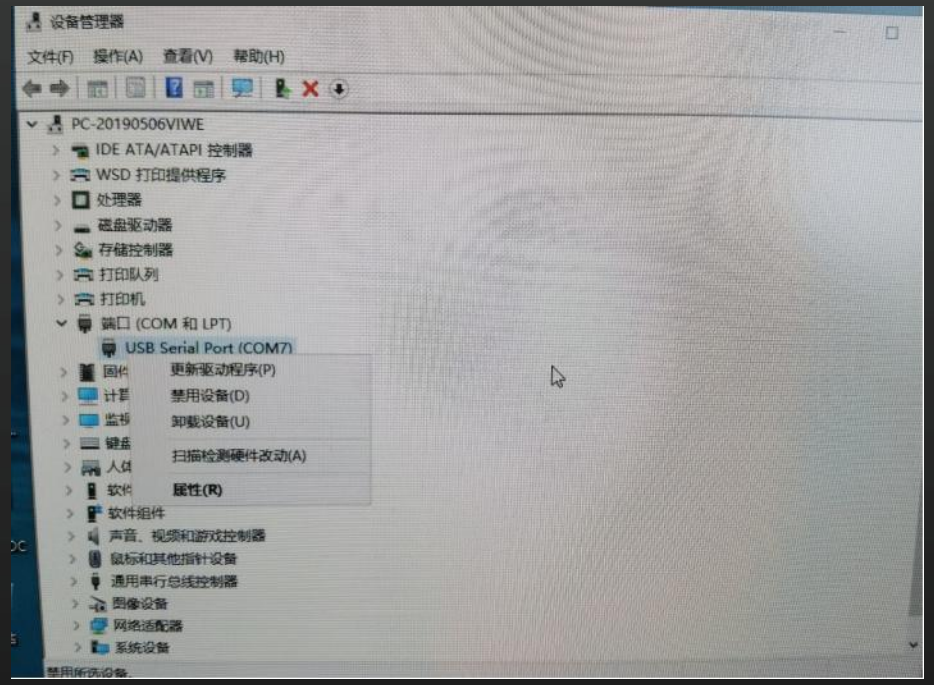
Step 2： Connecting the USB cable with PC and opening the device manager. If the port with “!” like below picture, the driver should be installed.



Software connection manual

2.3 Installation of debugging cable with CAN function

Step 3 : Right-clicking the USB Serial like below picture, then chooseing soft update.

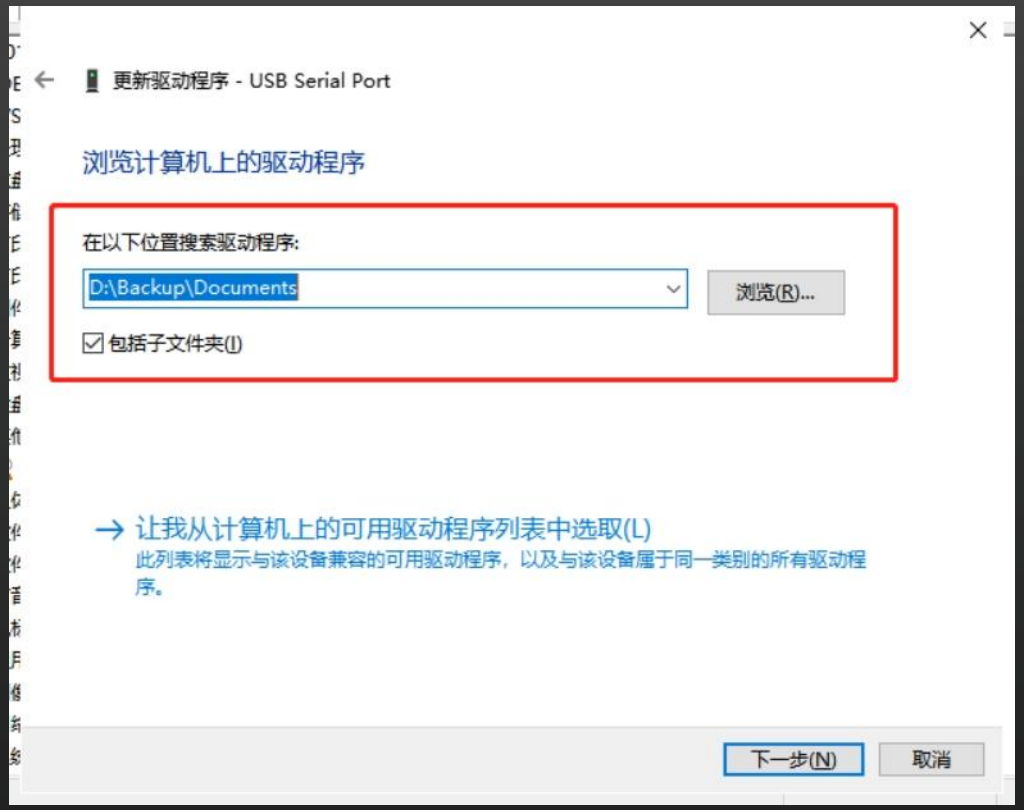


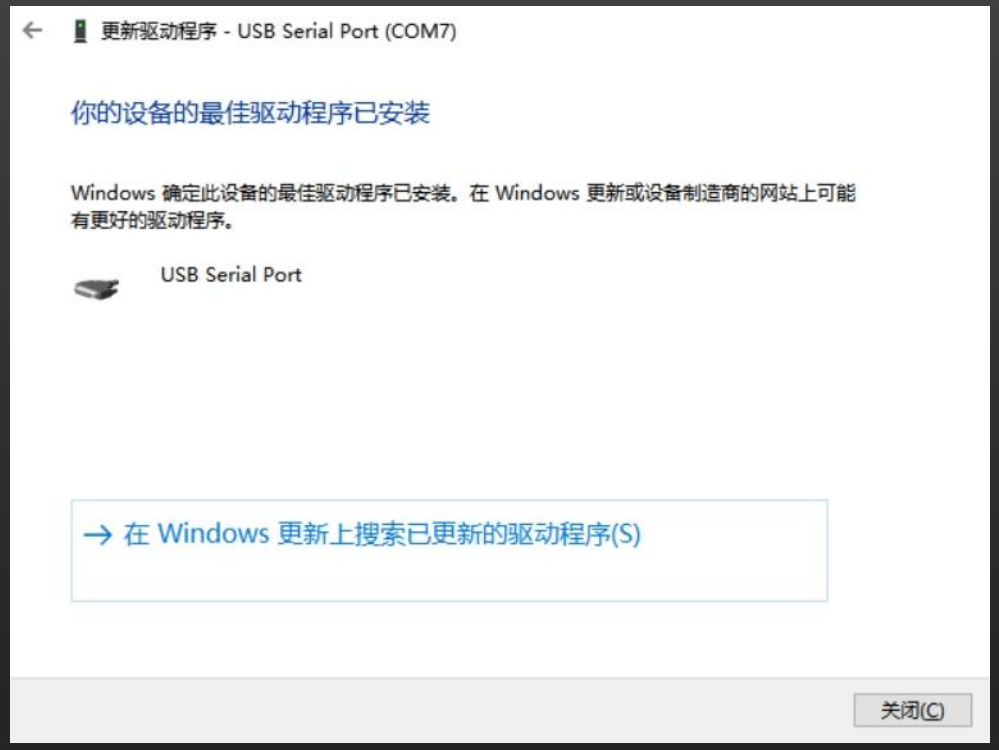
Step 4: Clicking browse my computer for driver like below picture.

Software connection manual

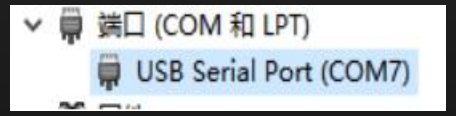
2.3 Installation of debugging cable with CAN function

Step 5： Selecting the correct the driver in the file like below picture, then clicking the next step for the driver installation



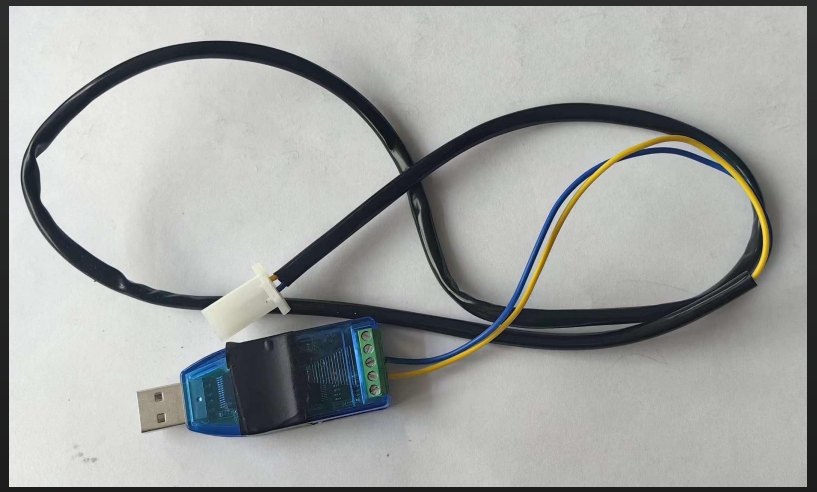


Step 6: When the port showing up, it means the driver is installed successfully;
If the "!" is still there, please reconnect the USB debugging cable.



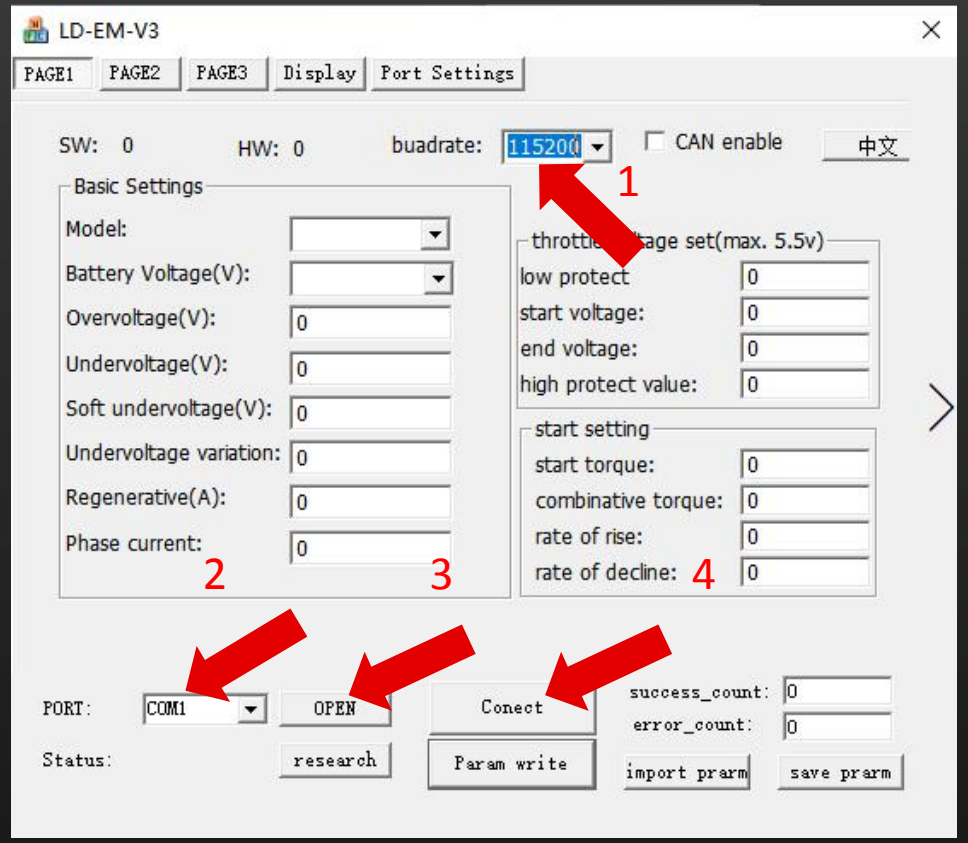
Software connection manual

2.4 Installation of debugging cable with CAN function



Step 1： Selecting the correct USB debugging cable according to the controller with or without CAN function；

Step 2： Choosing 115200 for buadrate, and opening the device manager to check whether the USB port is installed successfully before clicking “connect”. If it’s correct, selecting and starting the proper PC controller software, then connecting the correct port when the conroller is power on. All parameters will be showed in the software.



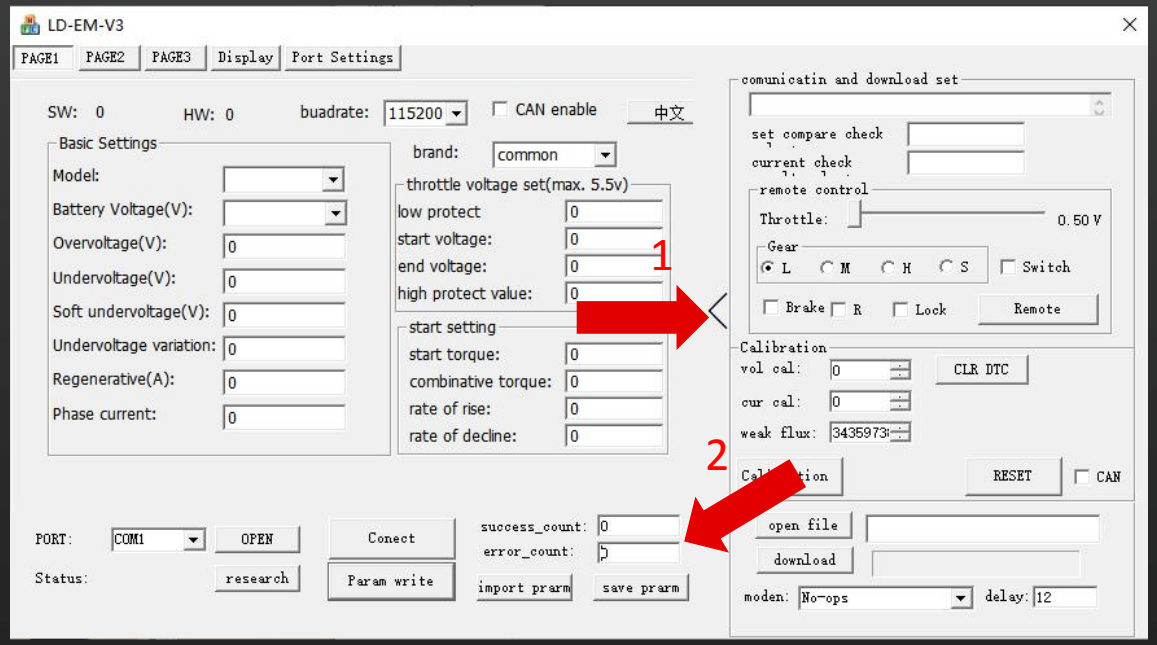
Software connection manual

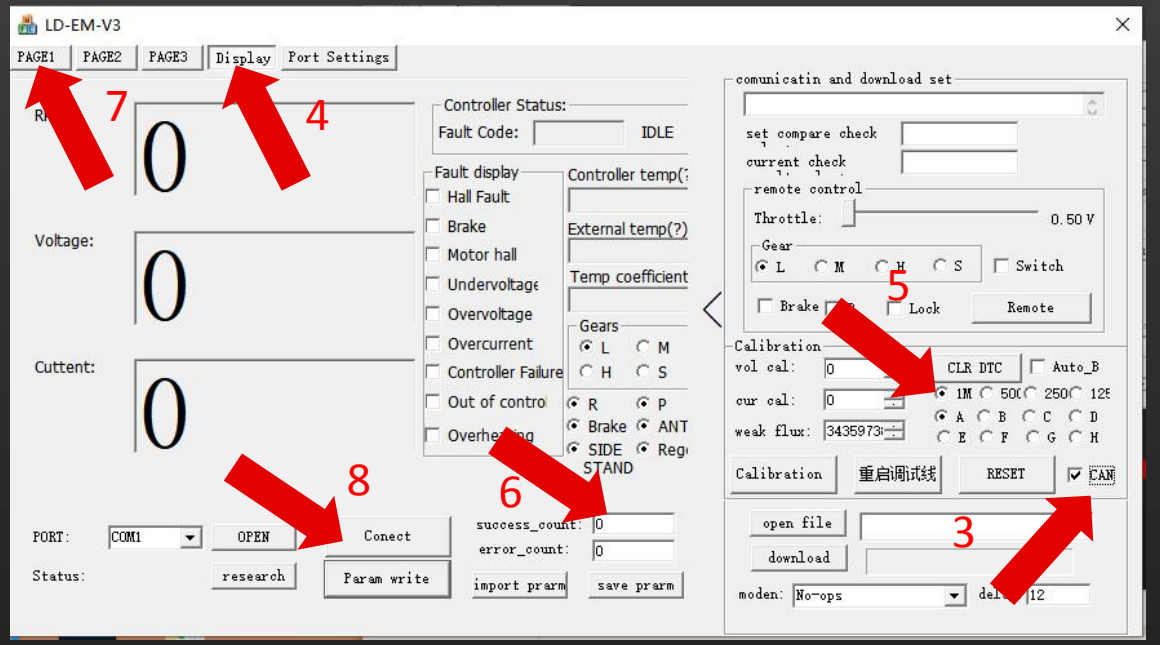
2.4 Installation of debugging cable with CAN function

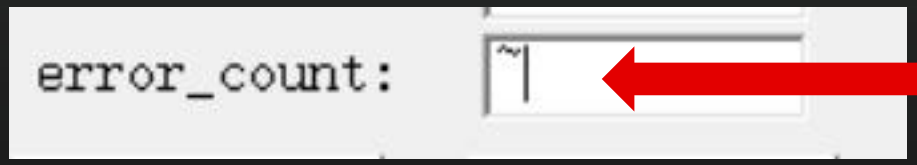
success_count: 0
error_count: 0

Step 3: If the controller cann't be connected, please enter the advanced interface and choose the CAN with correct ID or Auto_B

Following the below steps： Entering the advanced interface and click display interface, choosing the correct CAN baudrate and ID based on the controller model, meanwhile, observing the the value, when it's rised, click page 1 to connect the controller



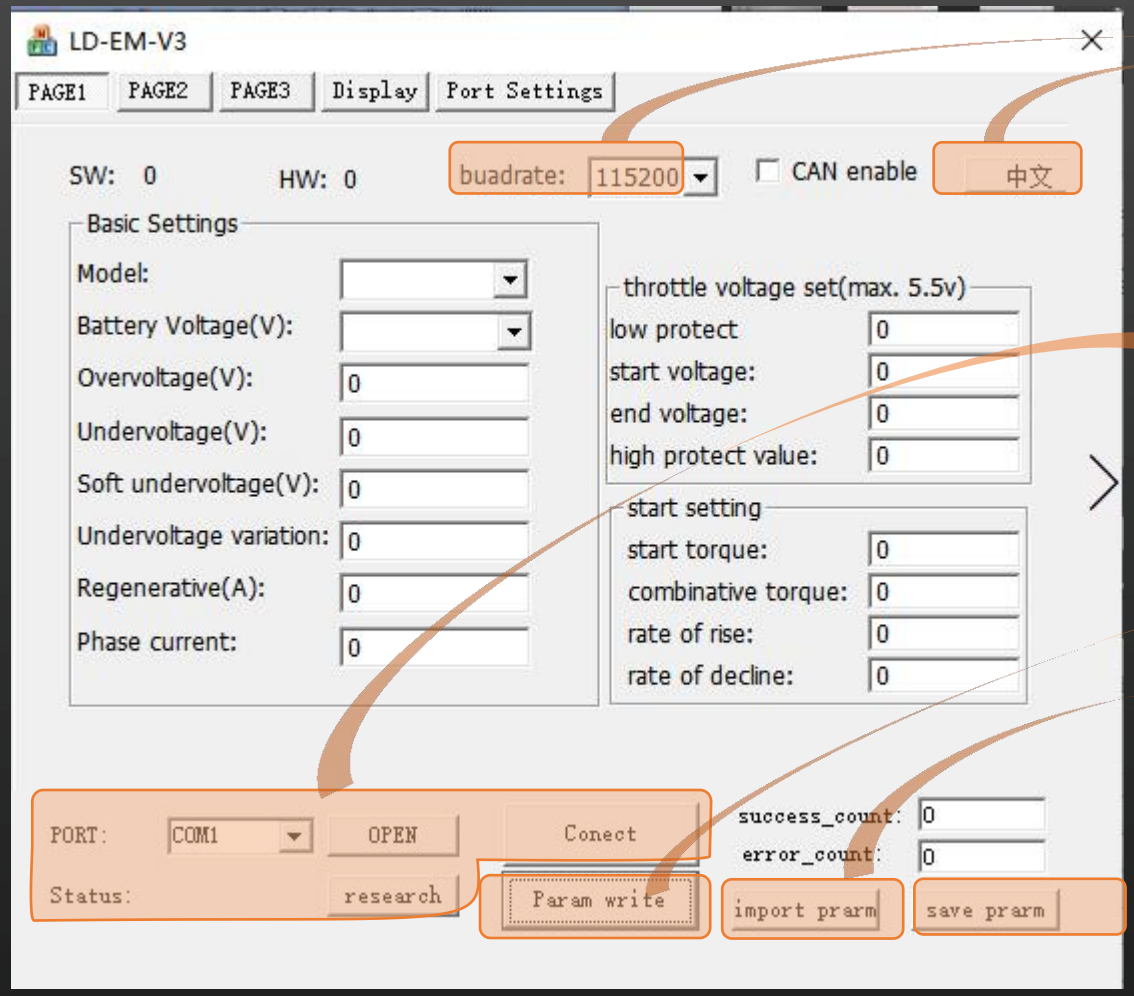


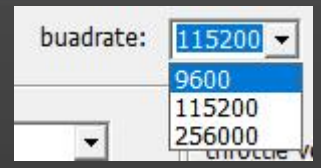


Type " ~ " and press " shift "
to enter advanced interface

Parameter setting description

3.1 Parameter page 1





language switch
(Chinese - English)

CAn buadrate
Without CAN： 9600
With CAN： 11520

Connecting the USB cable, choosing the correct port and click open. Clicking connect to read the controller parameters when the satatus shows connected.
If the port not shows up, please click research.

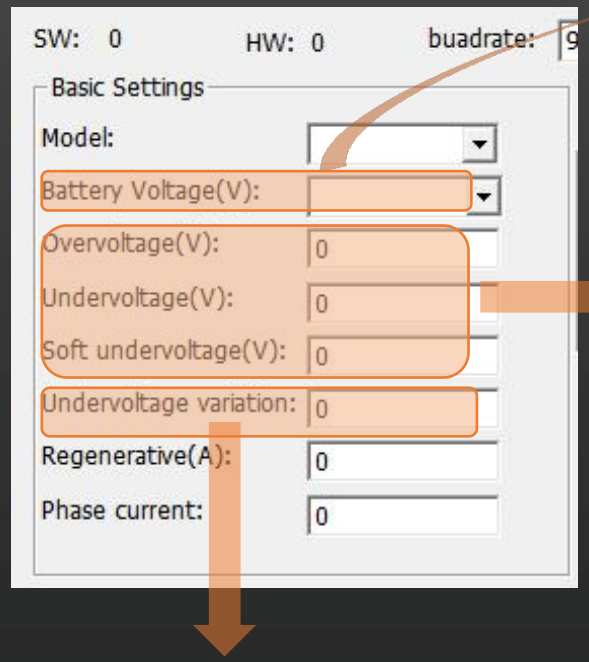
Click param wirte after adjusting the parameters.

Import the settings that saved on the computer.

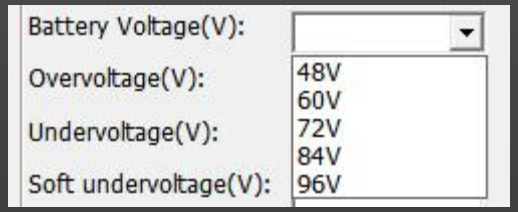
Save the prarm on the computer.

Parameter setting description

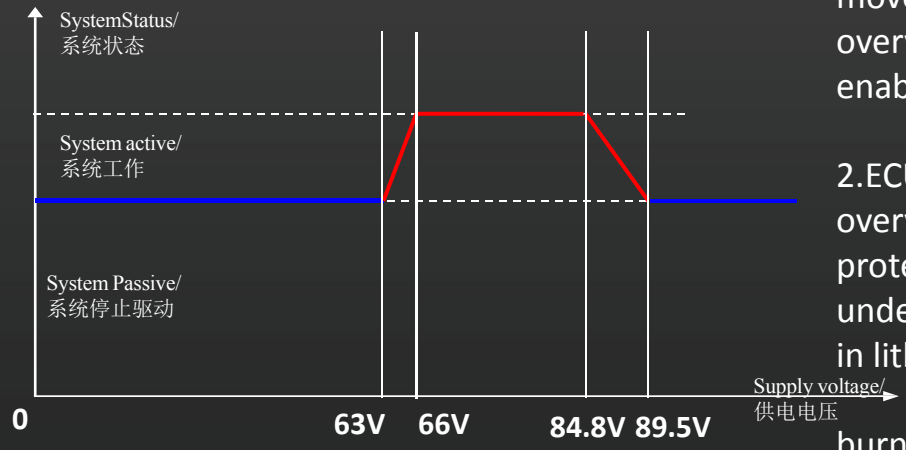
3.1 Parameter page 1



Selecting the controller working votage range. Software will preset lead-acid battery 's overvoltage, undervoltage, soft undervoltage parameters (lithium batteries need to be filled in more actual conditions



72V power supply



Attention:

1. Ovevoltage error: The vehicle is not moved after opening e-lock. The overvoltage protection function will be enabled.

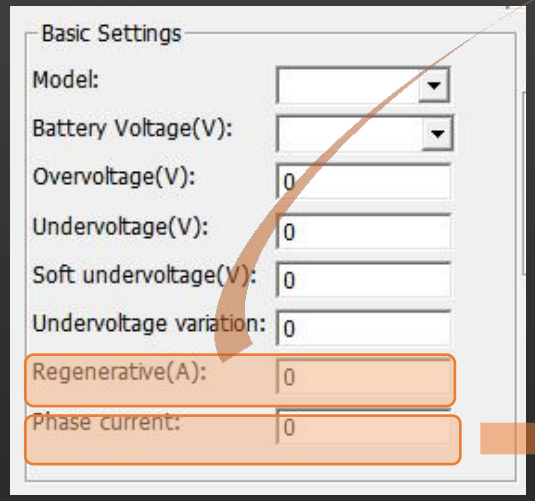
2.ECU undervoltage error: Due to the overvoltage of the lithium battery protection board is set too high or the undervoltage setting is too low, resulting in lithium battery protection and MOS burning

Undervoltage variation is normally set to 1
After the undervoltage fault occurs, the voltage of the vehicle can be recovered only when it is higher than the undervoltage value of 1V
For example:
When the undervoltage is set to 63V, the vehicle battery voltage is 62V when start charging, and the vehicle can not drive until the battery is charged to 63V.

1、Default basic value of lead-acid battery's overvoltage, undervoltage, and soft undervoltage : Due to software deviation range, the original voltage compensation is +1V.
2、The lithium battery parameters are set according to battery. Due to the software deviation range, the original voltage compensation is +1V. and the original lithium battery parameters are compensated by +1V, so for a total compensation of +2V.
3、The soft undervoltage value is set by 3V higher than undervoltage 's. When the voltage value is lower than the soft undervoltage value, the controller output current and speed will be reduced to protect the battery and increase the battery life before undervoltage.

Parameter setting description

3.1 Parameter page 1



Regenerative current

1、The regenerative current should be set according to the maximum reverse charge current that battery can take.

If the battery does not support reverce charging, set the value to 0.

Cautions:

1、If the battery does not support reverse charging, or the regenerative current is set too high, it will cause the battery BMS protection due to the high reverse charging current when loosing throttle or braking.（Notice：Changing battery, please turn off the regenerative function）

Phase current：

1、Different models of controllers get different max phase current value, please set according to the value that provided by tech department.(For details, refer to the technical department document: Capacitor Protection Settings)

2、The 100% means the max value of the phase current. When limiting the phase current, you can fill in the parameter according to the proportional .

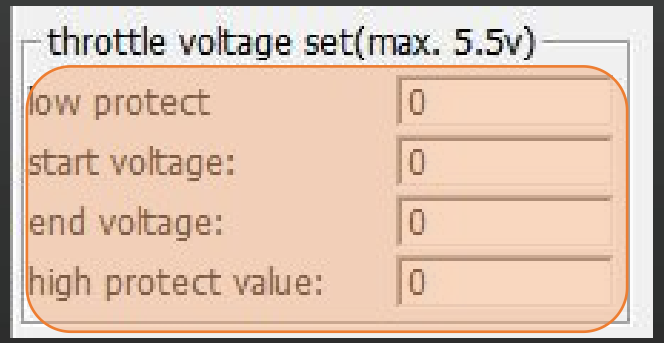
3、The phase current limit can only be less than or equal to the parameter provided by the technical department.

Cautions:

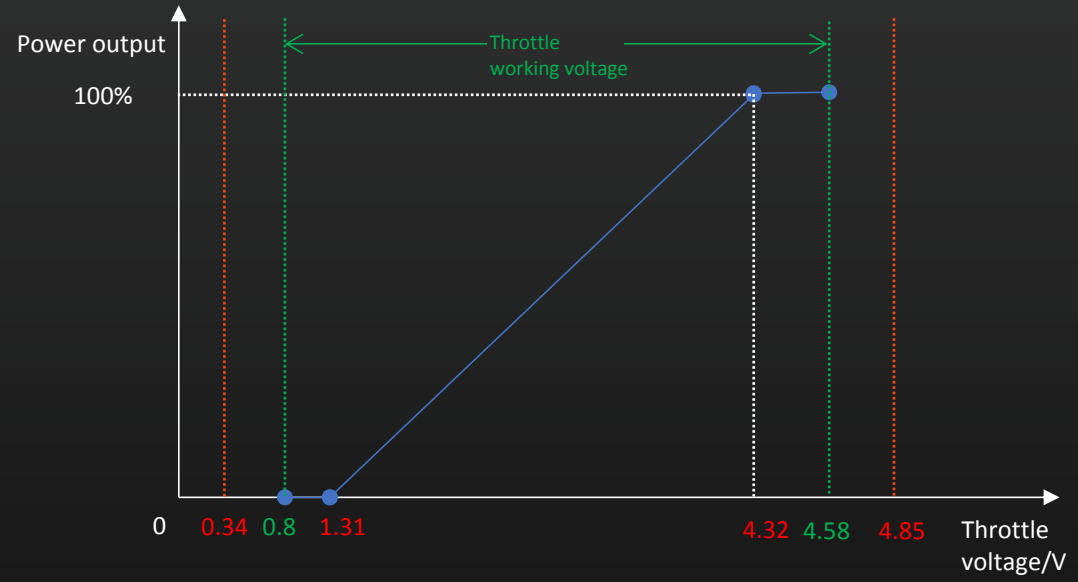
1、If the phase current limit is set too high, the temperature of the controller will increase sharply which will burn out the MOS tube.

Parameter setting description

3.1 Parameter page 1

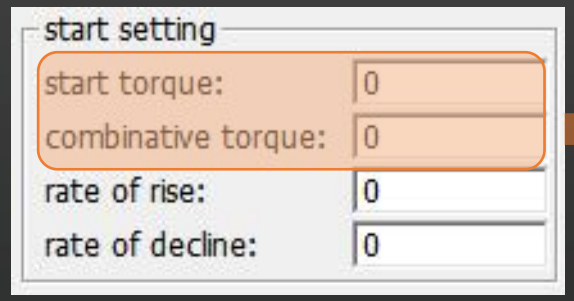


1. Throttle voltage set： Set the start and end voltage according the throttle actual lowest and highest voltage.
2. Throttle low protect： When the throttle signal voltage is lower than this value during power-on, throttle error will occur.
3. Throttle start voltage： the minimum level of valid speed， If the throttle signal voltage is higher than this value, the motor starts to run, othewise, the motor stops.
4. Throttle end voltage： the maximum level of valid speed， which is the maximum speed value voltage. When throttle voltage reaches this value, the controller will be at full output.
5. Throttle high protect value: The motor will stop when the throttle voltage is higher than this value.



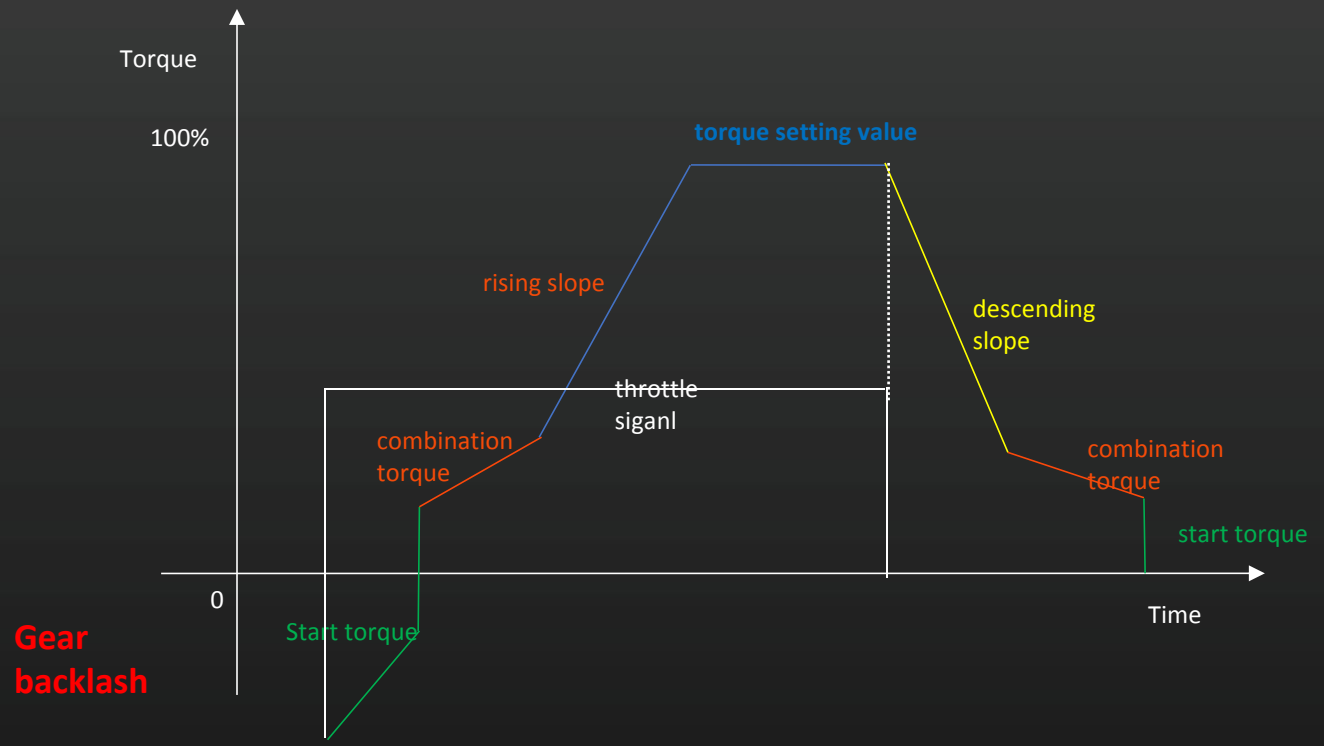
Parameter setting description

3.1 Parameter page 1



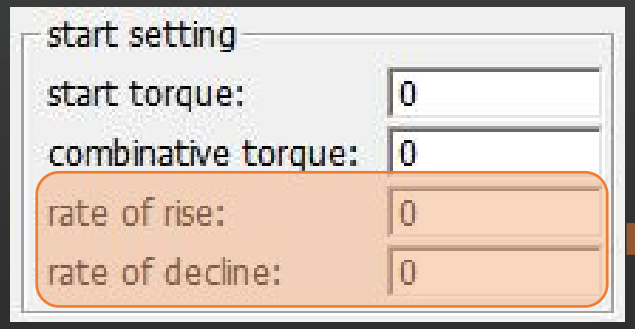
1. Start torque：The start torque is usually set to 0, and no need to change.
2. Combination torque：The starting delay parameter ranges from 0 to 350. The larger the value, the more obvious the starting delay is.

（Notice：The above two settings are suitable for mid drive motors with gearboxe, which used in the gear backlash）

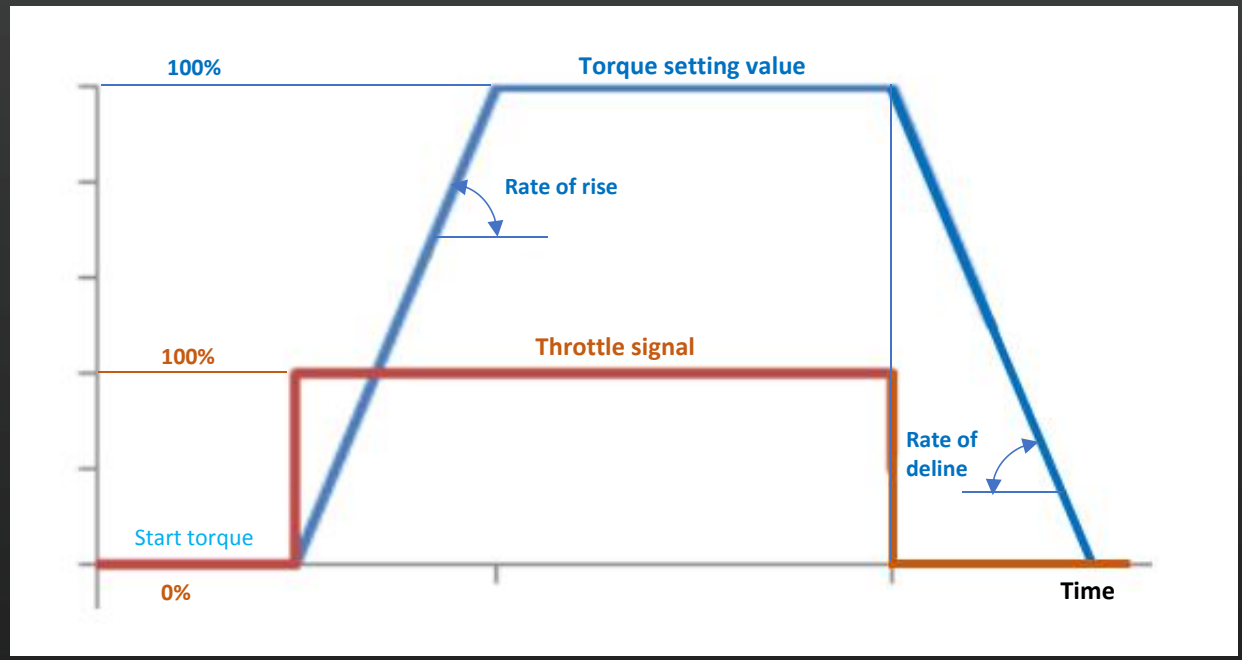


Parameter setting description

3.1 Parameter page 1



1. Rate of rise： Range 10-255. The higher the value, the faster the acceleration。
2. Rate of decline： Range 10-200. The higher the value is, the more obvious the speed drop is, and the inertia of the loose throttle decreases。



Parameter setting description

3.2 Parameter page 2

Max main bus current： it should be set by the guidance of engineer

Notice： The ECU MOS will burn out if the main bus current is too high.

Max flux-weakening value:

Flux weakening control: the weak magnetic function makes the motor run above the rated speed by weakening the motor magnetic field.

Flux weakening control can broaden the speed range of permanent magnet synchronous motor. The higher the weak magnetic value, the higher the motor speed （Max value: 5000）

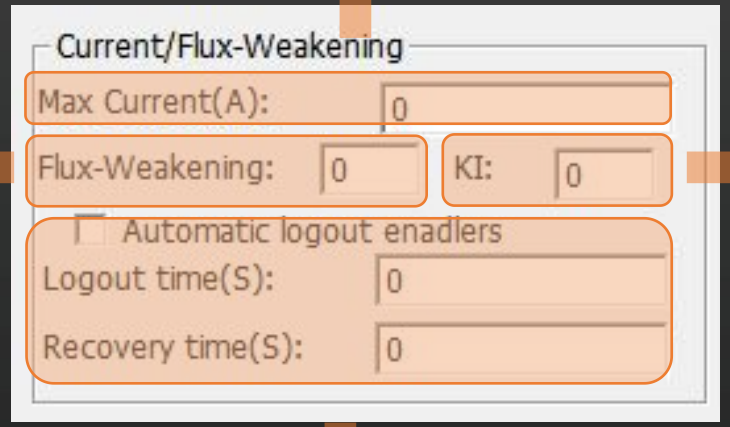
Notice：

1、Hub motor： The flux weakening speed of 60KM/H motor is less than 120%; the flux weakening speed of 80KM/H motor is less than 125%; the flux weakening speed of 110KM/H motor is less than 135%。

2、Inner rotor motor-Hall： The internal Hall flux weakening magnetic speed <135%; the external Hall flux weakening magnetic speed <170%

3、Inner rotor motor-Encoder： The internal Encoder flux weakening magnetic speed <230%.

4、High flux weakenging value can easily lead to demagnetization of the motor and controller MOS burning



KI setting:

Adjusting motor high-speed jitter

1.Set the higher value to lower down the jetter.

2. If the motor is not jitter, lower donw the value to the proper one. Range: 100-1200, 50 once time。

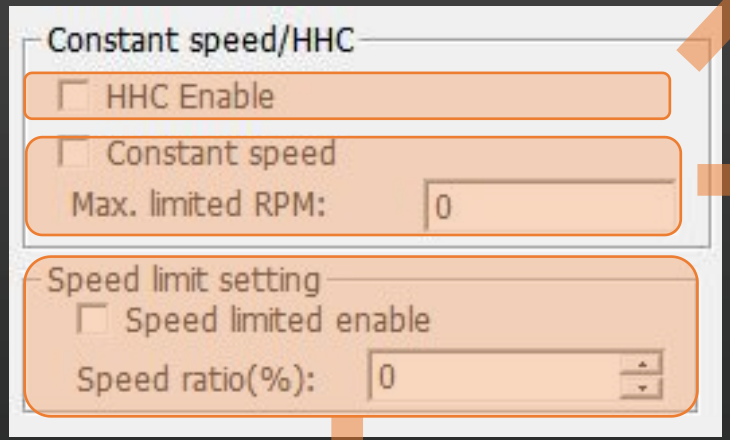
Automatic logout enablers :

Logout time: for S mode function to automatically reduce the speed and current when the set logout time is reached which can protect the battery.

Recovery time: the gap time for second S mode function which in order to avoid the vehicel operating in S mode for long time.

Parameter setting description

3.2 Parameter page 2



Enable or disable the slope stop function.

The braking time provided by the parking assist varies according to the vehicle torque and slope.

Constant speed and Max. limited RPM
Constant speed which means keeping motor speed constant within maximum power range
Load characteristic：

(1) When the load increases and the speed remains the same, the current will increase;
(2) When the load decreases and the speed remains the same, the current will decrease.

Flux weakening with max. limited RPM: the max. limited speed should be set equal to the motor landing speed. If the setting value is lower than the motor rated speed, the flux weakening value can be increased or stay at same. Otherwise, it has to be increased.
Notice： Due to the loss of the motor on the ground relative to no load， the maximum speed limit setting value is usually ≤ (motor rated speed + flux weakening value) RPM.

To determine whether the highest speed flux weakening value is reasonable, first check the maximum speed limit setting value under the speed of the D-axis current, according to the D-axis current value multiplied by 1.2 times is the highest weak magnetic value of the setting value (Flux weakening in Page 2)
For example: the maximum speed limit value of 800, the motor rotates to 800 revolutions, the D-axis current is shown to be 500, then the highest speed weak magnetic value: 500 x 1.2 = 600

Eenable or disable the speed limiting function of the controller and speed ratio settings

Limit speed= Limit ratio %* Max speed

MTPA： For maximum torque adjustment of mid drive motor with V-magnets

To find the best match between current and torque so that the motor can produce maximum torque with minimum current. (Multiple tests of the motor are required)

Hub motor : 15 (Fixed)

Mid drive motor: below 2000W= 45、2000W=65、3000W=85、above 3000W=105。

Parameter setting description

3.2 Parameter page 2

Max three-speed RPM settings:

Low speed current=Low-speed ratio%*Maximum limited RPM

Mid speed current=Mid-speed ratio%*Maximum limited RPM

High speed current=High-speed ratio%*Maximum limited RPM

Starting phase current: Maximum phase current limit value corresponding to the first acceleration section

Starting phase current ≤ controller maximum phase current value setting

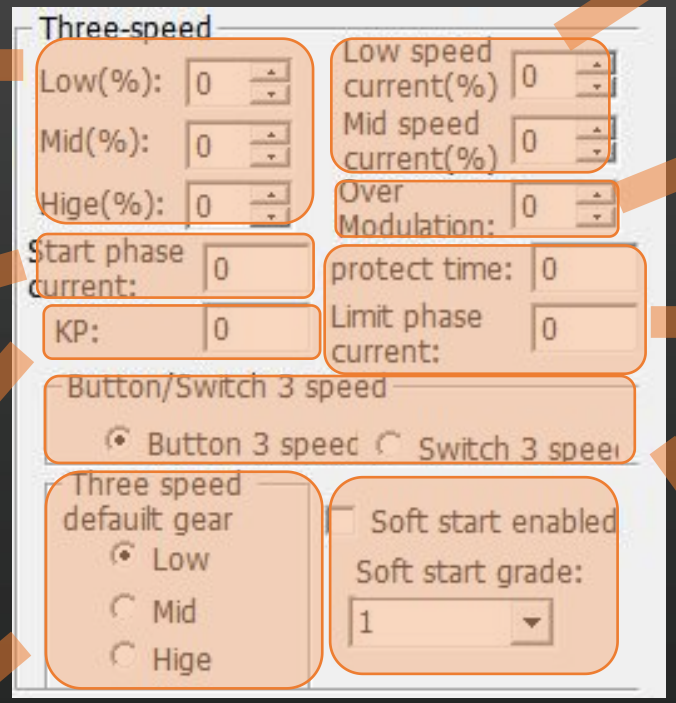
KP:

Adjust the sound and resonance of the motor when starting. The louder the motor sound as well as the resonance, the smaller the value is. Otherwise, increase the value. And taking a reasonable value.

Three speed default gear:

Selecting the power-on default gear

Button 3 speed is effective



Soft start:

Unchecked for hard start.

The higher the level the more power when starting.

Three-speed main bus current settings:

Low-speed current=Low-speed ratio%*Maximum main bus current

Mid-speed current=Mid-speed ratio%*Maximum main bus current

Over modulation:

Reduce motor no-load current by increasing motor rated speed.

Hub motor: 0-14 ; Mid drvie motor:10-20

Phase current settings:

Protect the controller by setting the maximum phase current maintenance time through the capacitor protection time.

（The protection time and limiting phase current parameters are filled in according to the documentation of the Technical Department.）

Button/Switch 3 speed :

Button 3 speed： press to select the gear

Switch 3 speed： switch to select the gear

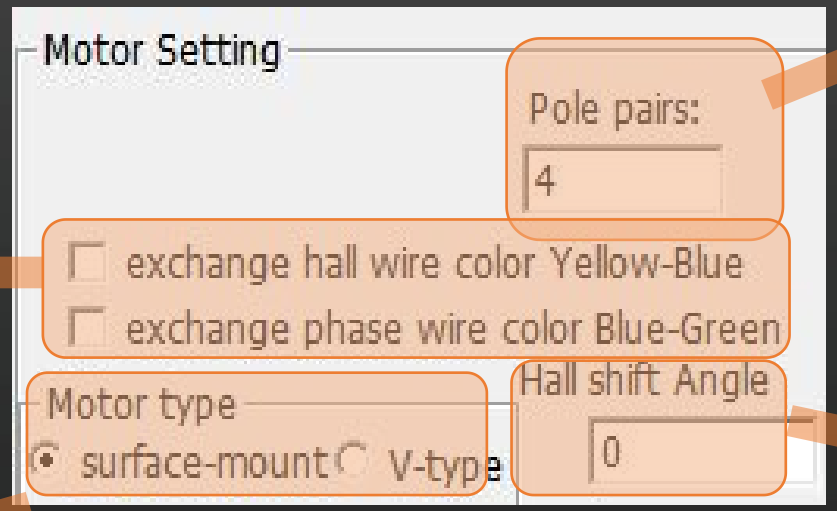
(Port settings should be consistent with the way here)

Parameter setting description

3.2 Parameter page 3

Motor Pole Pairs： According to the motor
(Wrong value will affect the motor speed)

Different motor types have different pole pairs



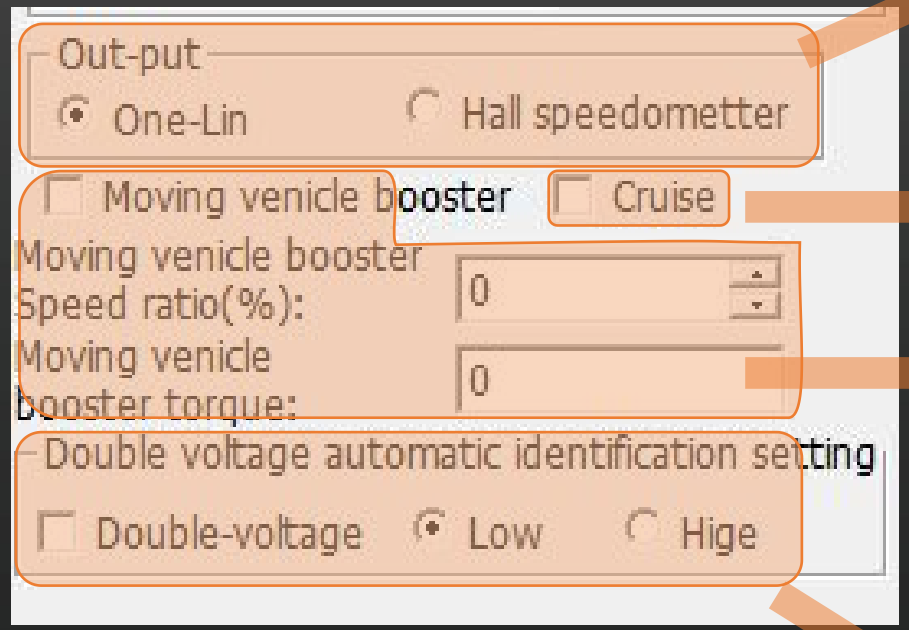
Hall, Phase wire exchange: To deceide the motor rotate direction. Forward or backward

Hall shift Angle： According to motor’s spec
(For hub motor, normally , it is -60

The rotor magnet fixing type of motor:
For the hub motor, choose the surface-mount (the position corresponding to the Hall).
For mid drive motor, tick V-type

Parameter setting description

3.2 Parameter page 3



Speedmeter communication methods: One-line communication or Hall Speedmeter.

(The port settings: One-line communication or Hall signal it should be unified here)

Cruise function On or Off .

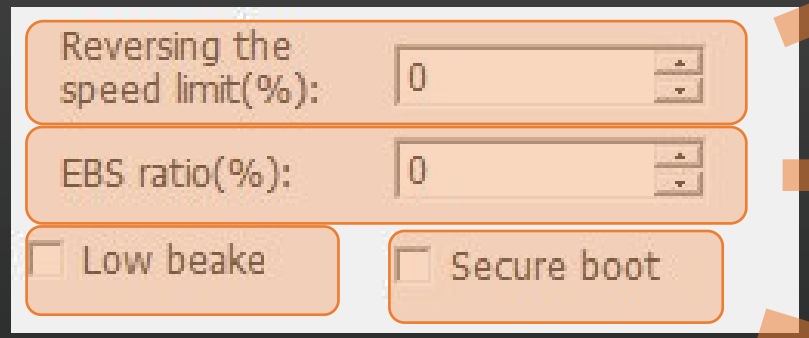
(Port setting needs to set Cruise function)

Moving vehicle booster Function On or Off:
Used for 2 wheelers
Moving vehicle booster Function=Speed ratio% * max speed limit
Moving vehicle booster Torque=max phase current
Pls note: Speed 3km/h, torque 9~19N.m

Double voltage Setting: Single voltage as default, low voltage as default
Pls note： The speed value for double voltage function is set according to motor rpm (Port setting： Need to choose double voltage function)

Parameter setting description

3.2 Parameter page 3



Reverse Speed limit Setting: Reverse Speed =Reverse limited speed%*max limited speed

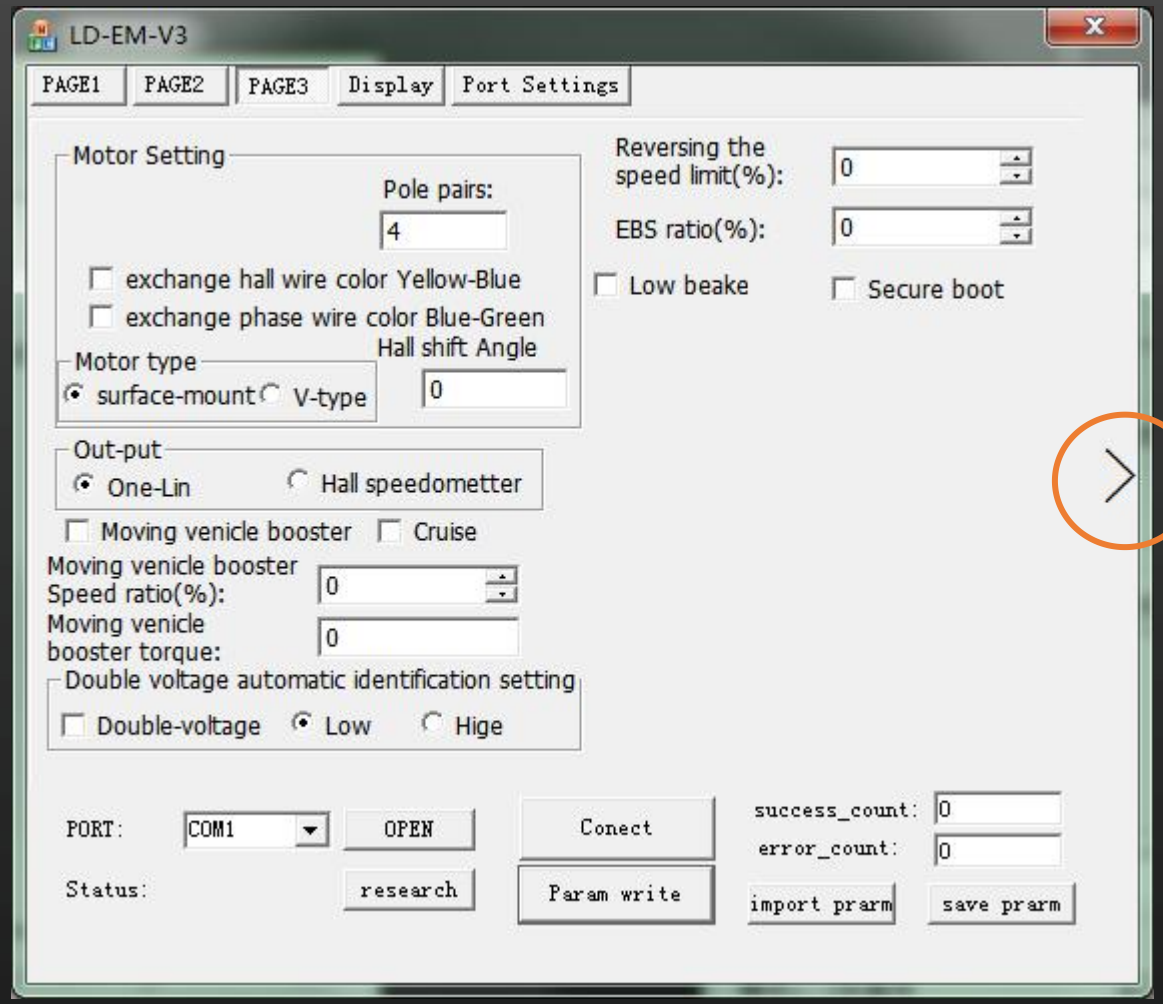
EBS ratio： Set electric brake regen power
Set parameter between 8~20 for 2 wheeler
Set parameter between 20~30 for 3 or 4 wheeler
(Setting according to the comfort feeling when release the handlebars and brake)

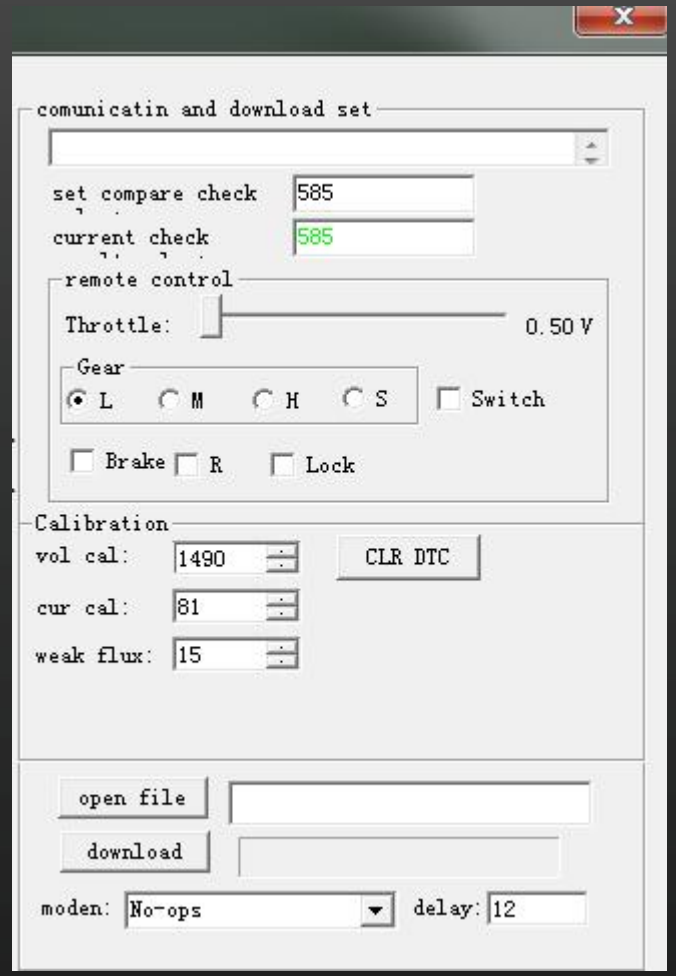
Secure boot Function On or Off: Off as default (Special soft function)

Low brake enable: brake signal high and low brake, high brake as default, check low brake

Parameter setting description

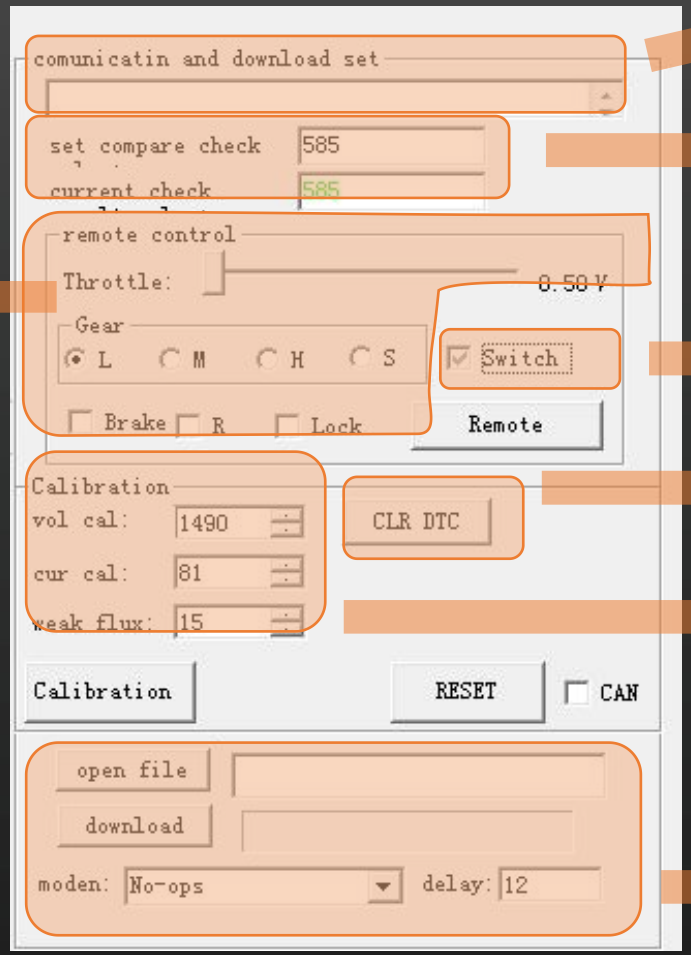
3.4 Setting for advanced page





Parameter setting description

3.4 Setting for advanced page



Remote control interface

Download process display

1. The actual value corresponds to the first inspection result of the controller parameter software.
2. The comparison value compares to the controller from same batch. If the two values are same, then parameters are consistent.

Used to switch the display interface. If not selected, the speed/voltage/current will be displayed.

Display RPM/Q axle voltage/D axle voltage

Display RPM/Q axle current/D axle current

CLR DTC

Voltage calibration: Adjust whether the displayed voltage is consistent with the actual voltage. No need to change.
Current calibration: Adjust whether the displayed current is consistent with the actual current. No need to change.
Weak Flux: Adjust D-axls voltage and Q-axls current.

Open file: Open ECU bin software
Download: Import the ECU program file or configuration file into the controller
Mode: No need to choose normally。

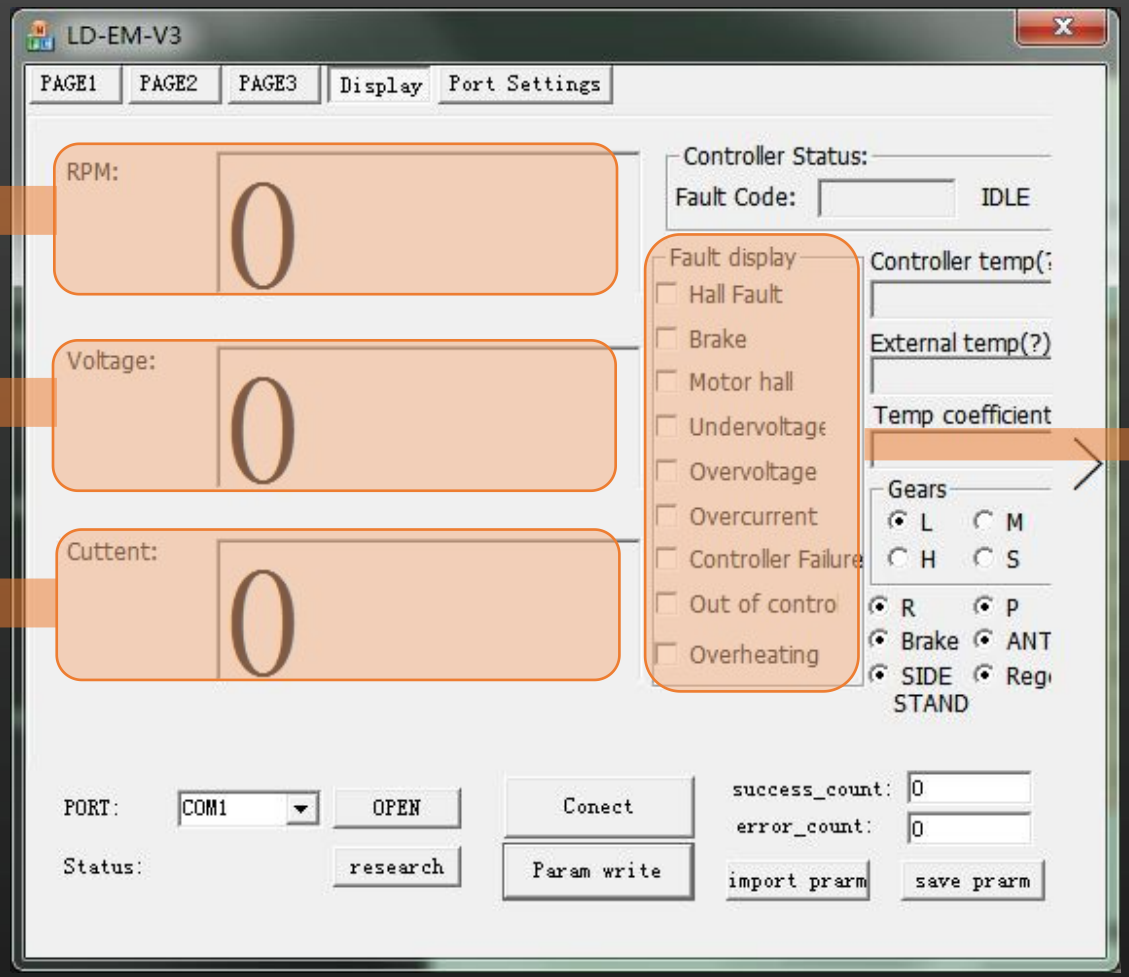
Parameter setting description

3.5 Setting for Display page

Display motor speed RPM in real time

Display controller Voltage in real time

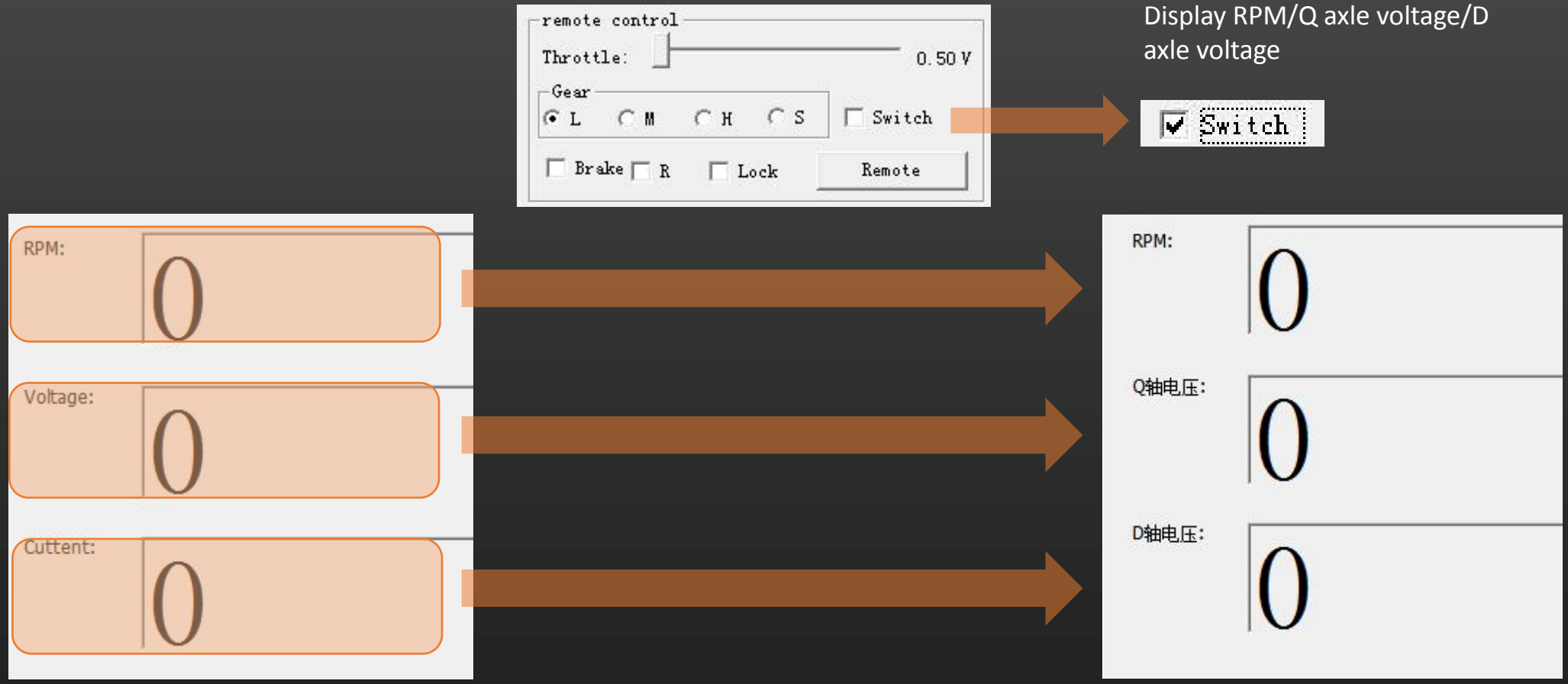
Display controller current in real time



Display fault in real time

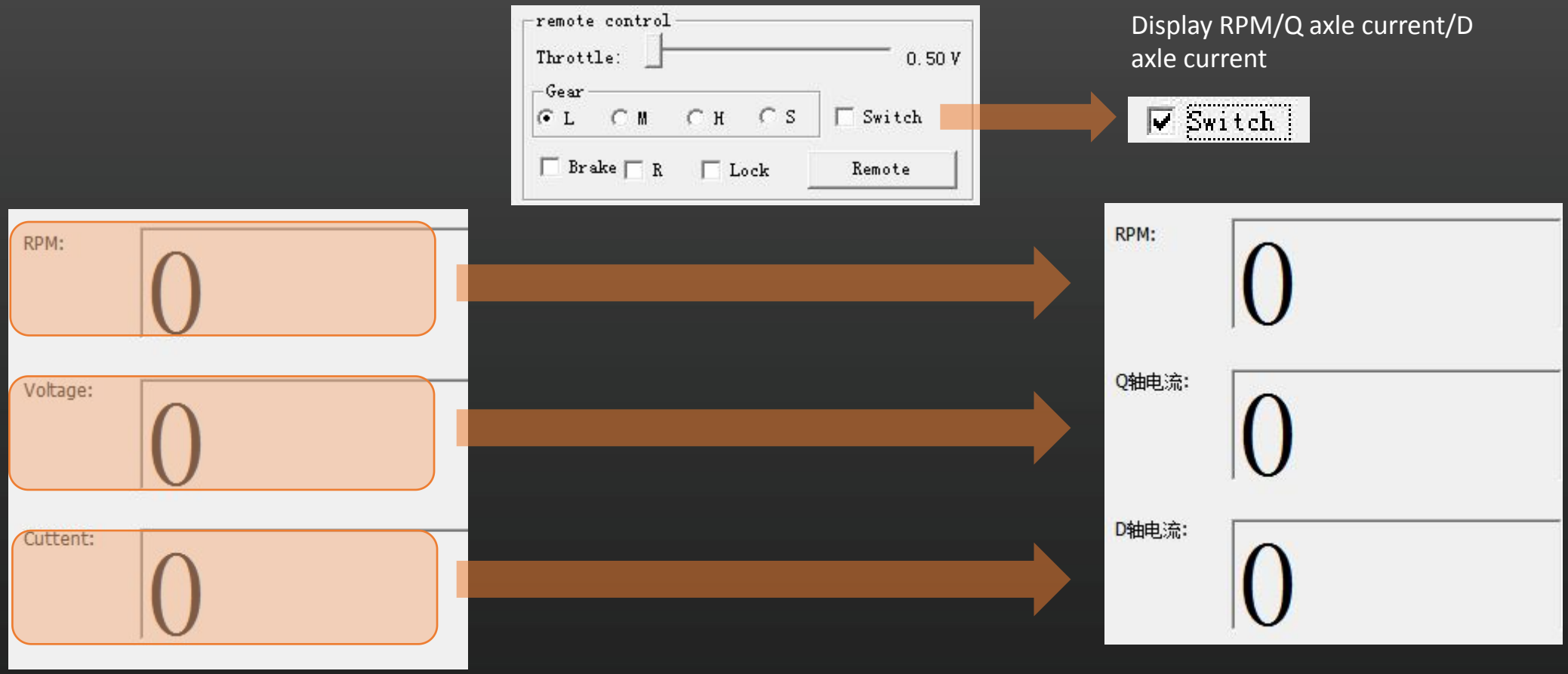
Parameter setting description

3.5 Setting for Display page



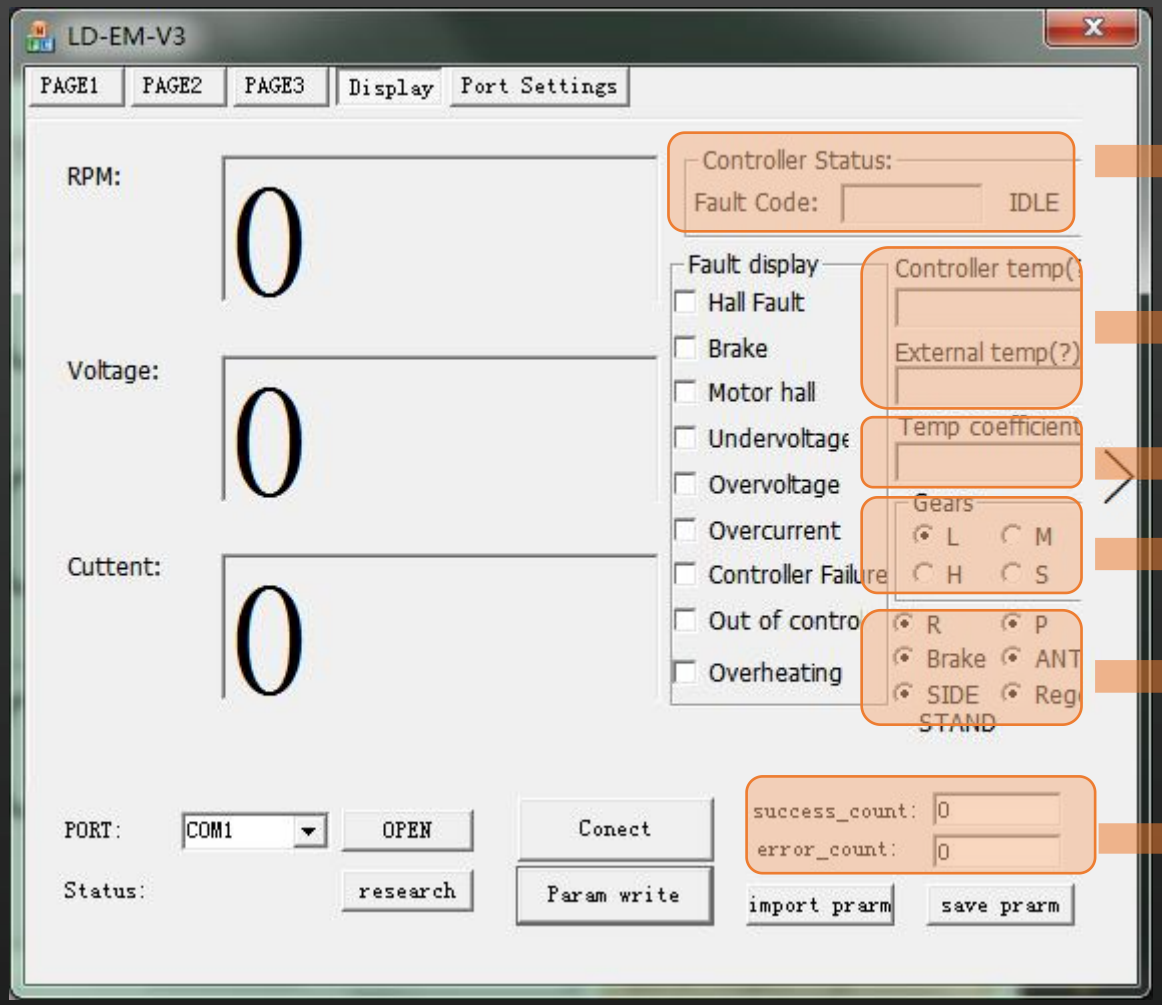
Parameter setting description

3.5 Setting for Display page



Parameter setting description

3.5 Setting for Display page



Fault code: Display fault code

Controller temp: Display controller temp

External temp: Display motor temp

Temp coefficient： Display the controller hardware value

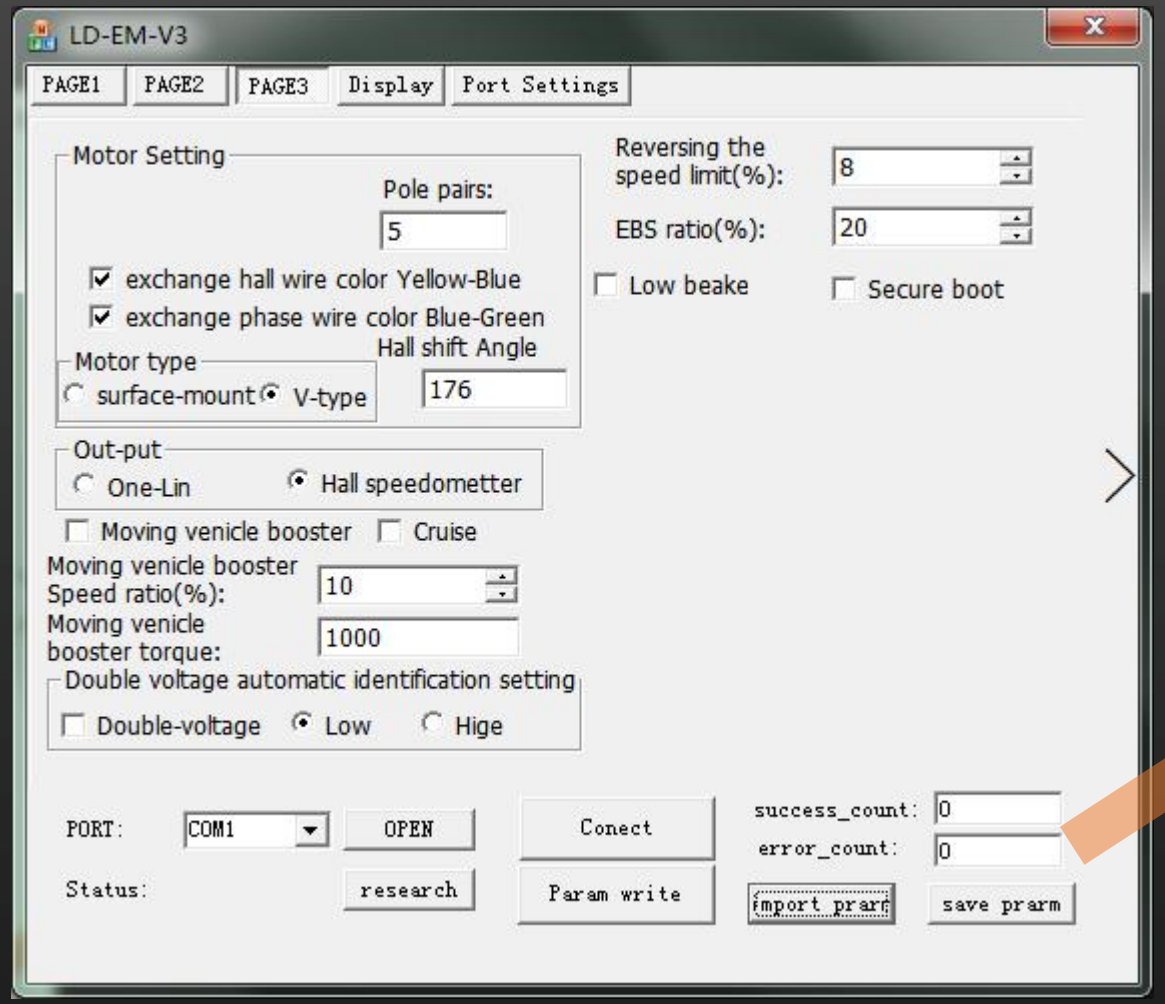
Gears： Display the gear in real time

Status： Display the controller status in real time

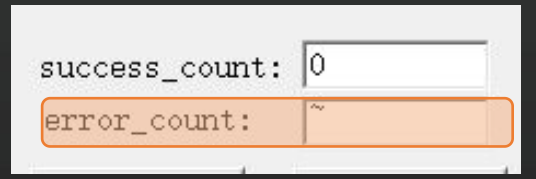
Connection： Display if controller connection is normal

Parameter setting description

3.6 Setting for Advanced page

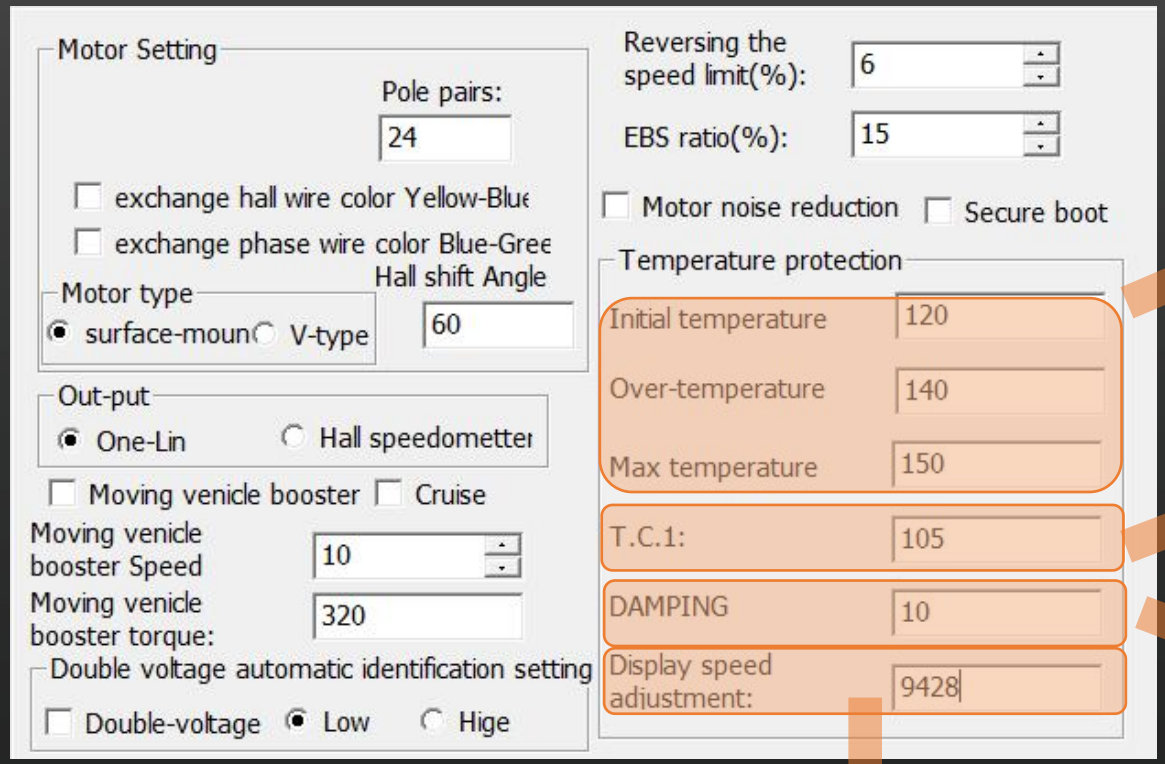


In any page, error_count enters ~ and then click shift button on the keyboard, then you can open the remote control function in extended page



Parameter setting description

3.6 parameter description (Advanced interface)



Motor temp protection setting(Port settings: The corresponding motor temperature sensor model needs to be configured)
Intial temperature: the controller enters temperature protection to limit power when reaches the set temperature.
Over temperature: the controller enters the second stage temperature protection to limit the power when reaches the set temperature.
Max temperature: the controller cuts off the motor output when reaches the set temperature.

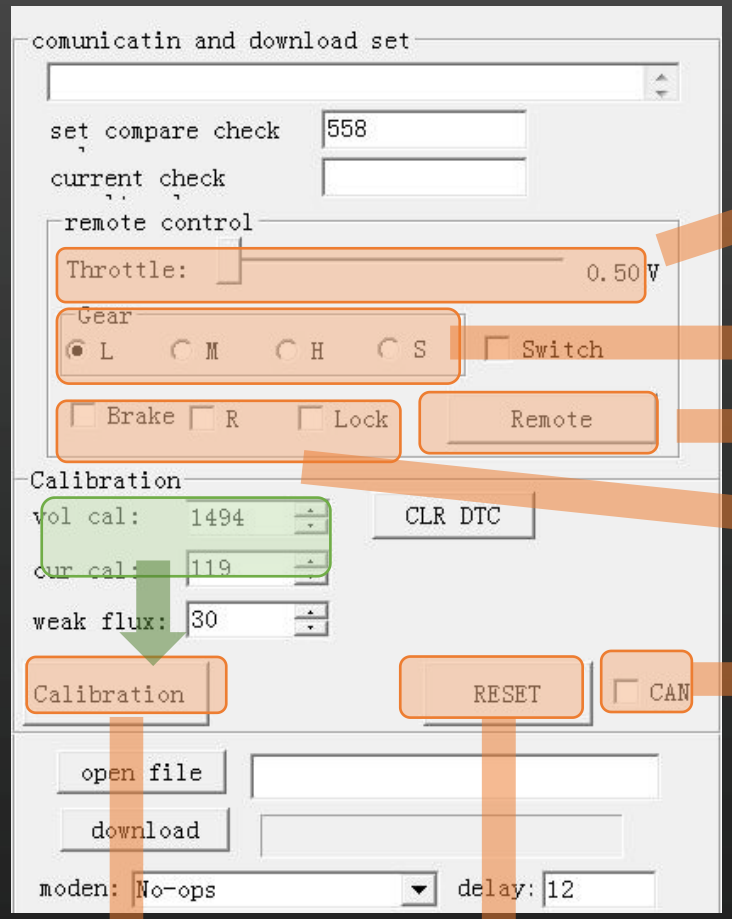
Controller temp protection settings (fill in the corresponding parameters according to the documents issued by the technical department)
The controller enters the protection temperature: After reaching the set temperature, the controller enters the temperature protection and limits the power.
The controller stops output when reaching the set temperature +20℃

DAMPING （range: 10~30）
Prevent motor auto-rotation failure. If the value is filled in too much, the motor will stop too fast and a current sound will appear when it is stationary.

used to adjust speedometer display speed
Fill in the multiple of 265

Parameter setting description

3.6 parameter description (Advanced interface)



Analog throttle voltage controls motor operation

Analog gear, used to gear-switch

Remote control and local control switching

Analog vehicle switch

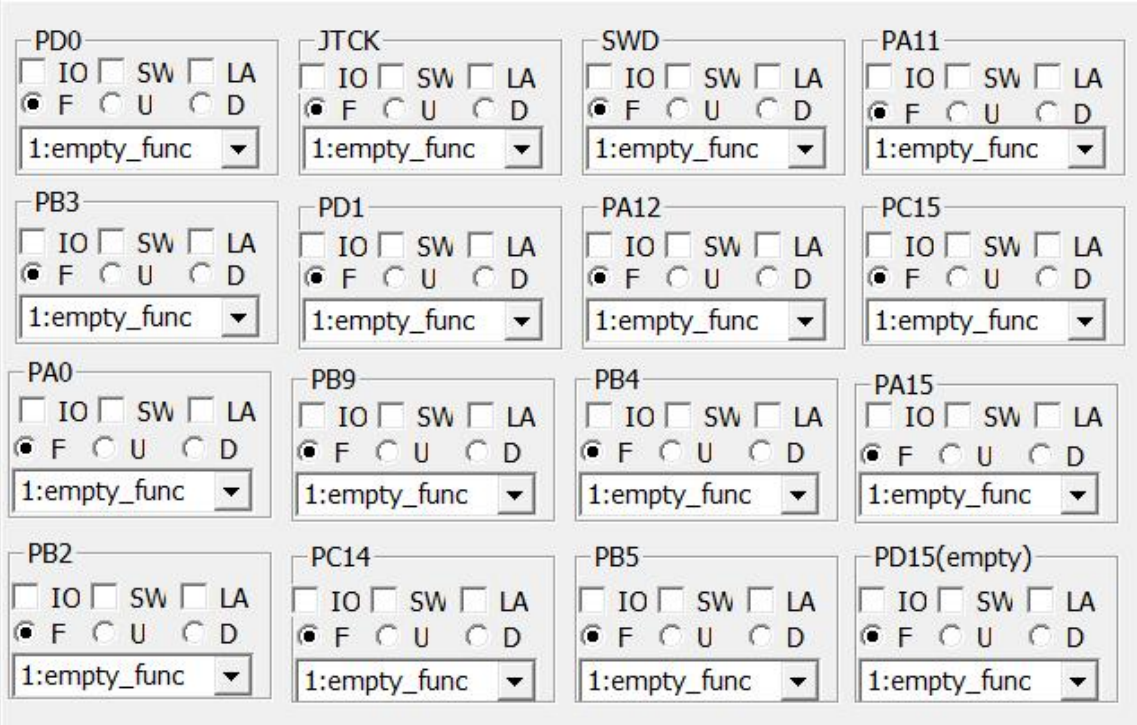
CAN mode
Adjust CAN debugging line baud rate and ID
Control debug line restart

Used for writing calibration data

Used to restart the controller to clear faults

Parameter setting description

3.7 parameter description (port interface)



The port interface selects port functions according to the actual needs of the vehicle.

The port and the actual corresponding location need to be set according to the (port description diagram of the document issued by the technical department)

IO is output

SW is for jog

LA is an effective switch between negative control and positive control.

F U D is the function branch (for example, for the one-line communication function, select F for the Hall number output and select U for the speed output)

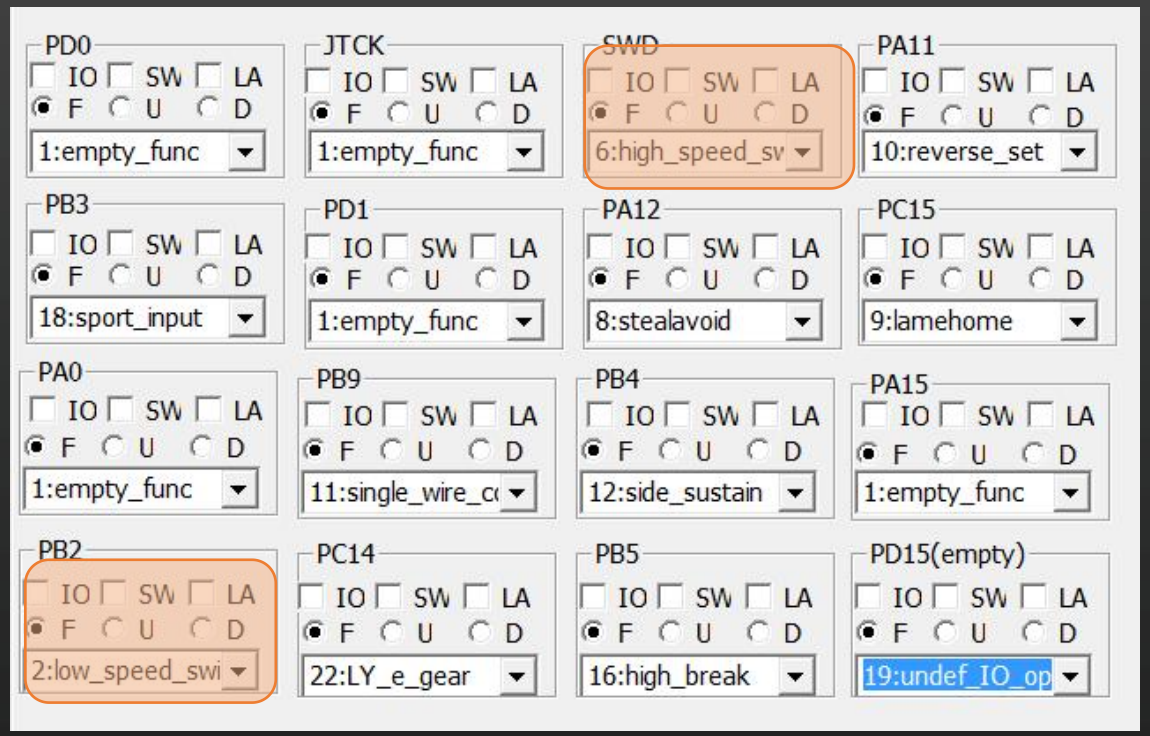
PD15 defaults to option 19. The CAN controller can select CANID through this port controller.

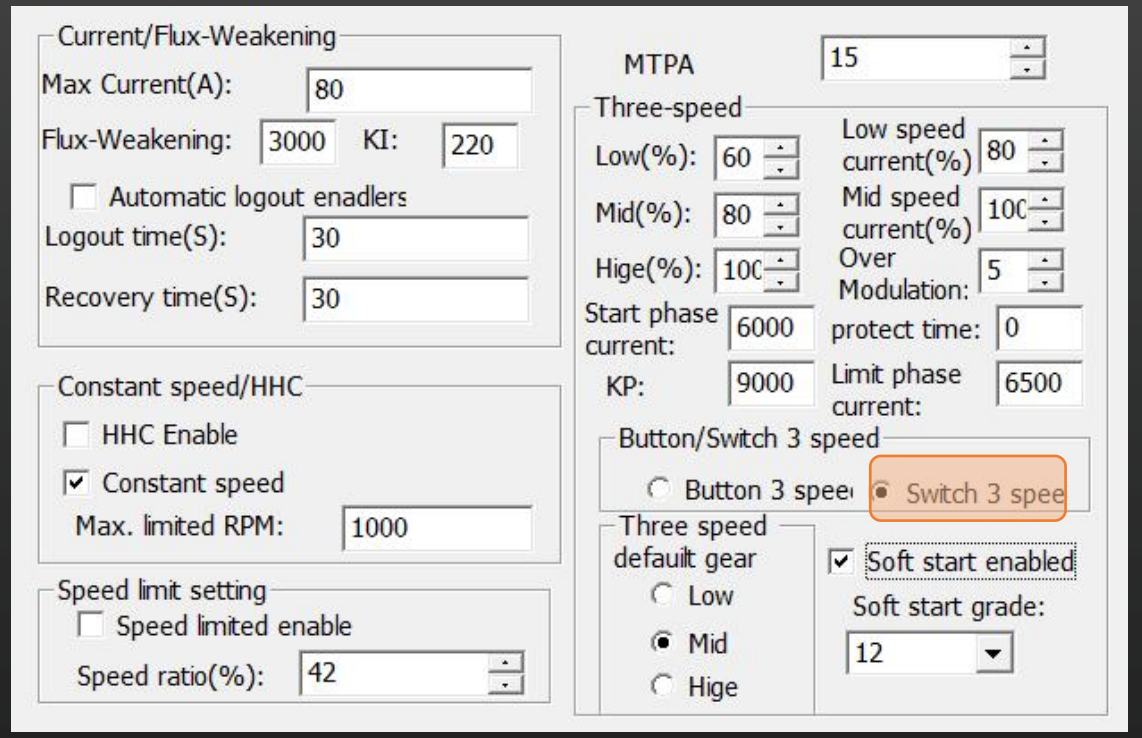
Parameter setting description

3.7 parameter description (port interface)

The port function and the setting interface function selection must be consistent.

Example: EM80 port switch 3 speed settings



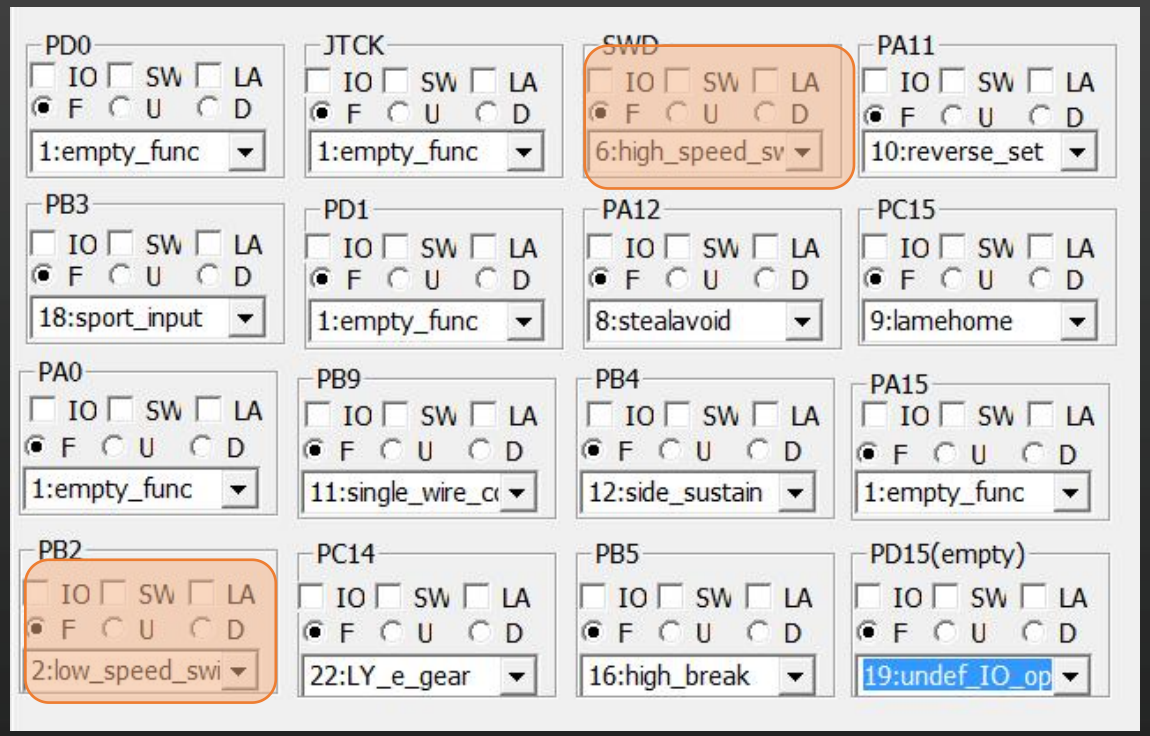


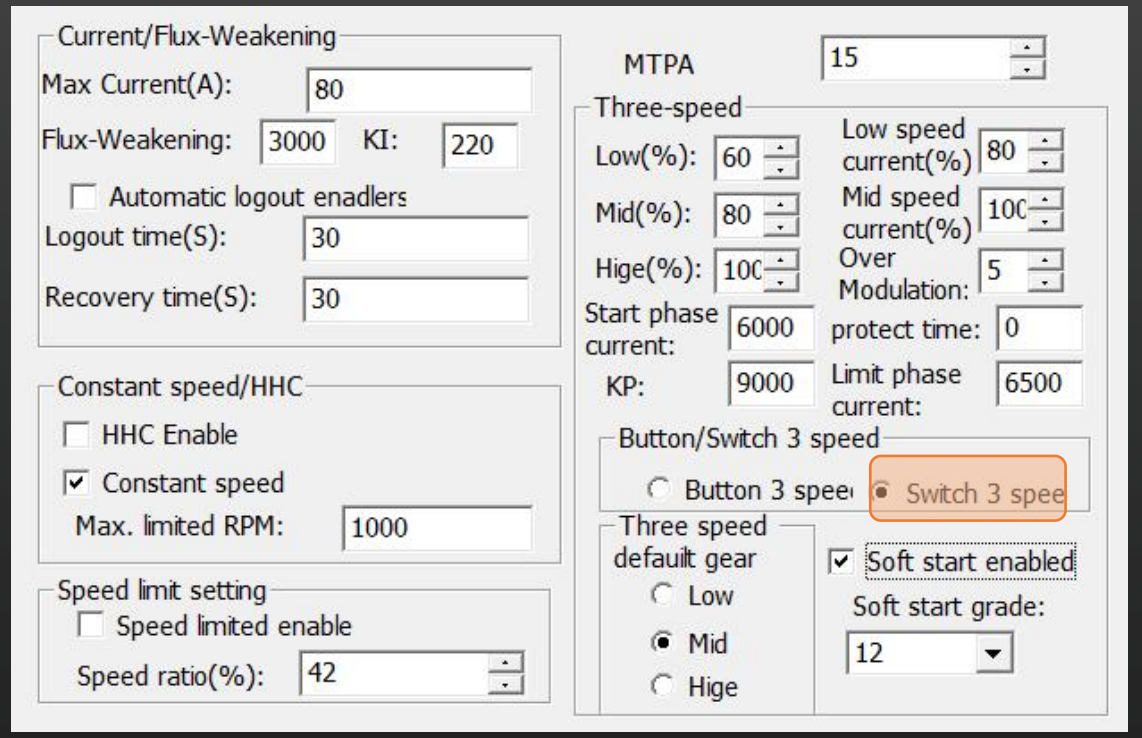
Parameter setting description

3.7 parameter description (port interface)

The port function and the setting interface function selection must be consistent.

Example: EM80 port switch 3 speed settings



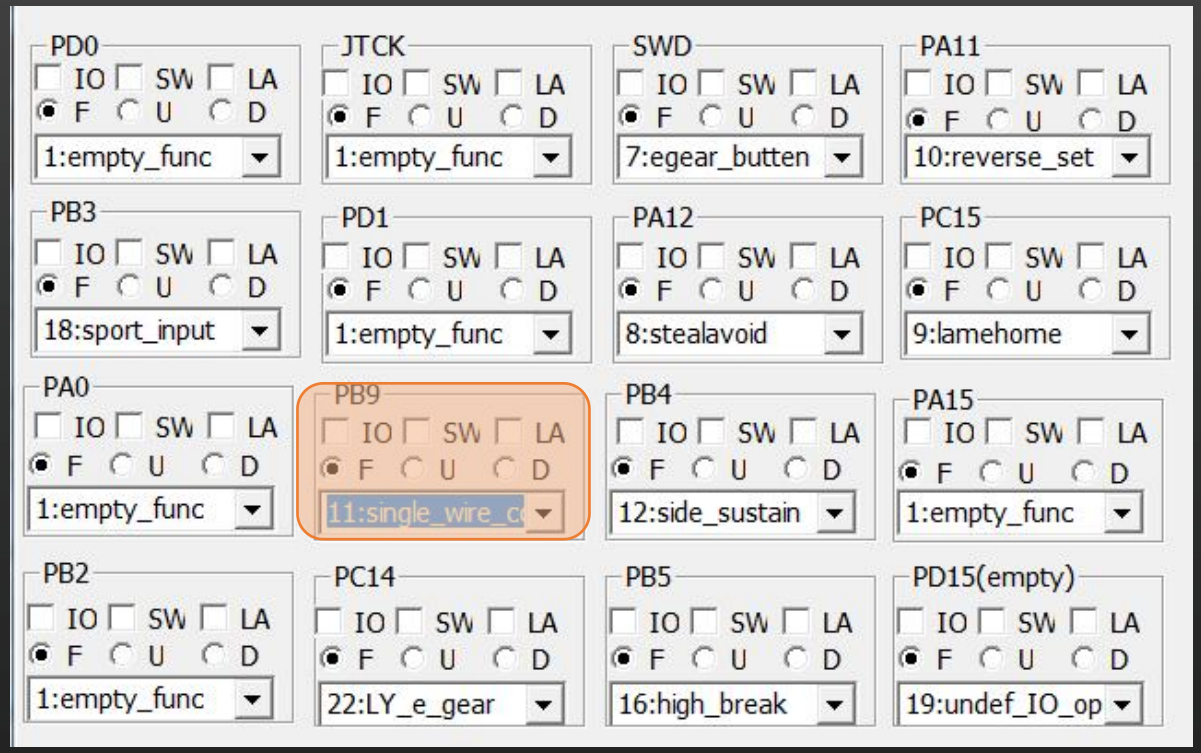


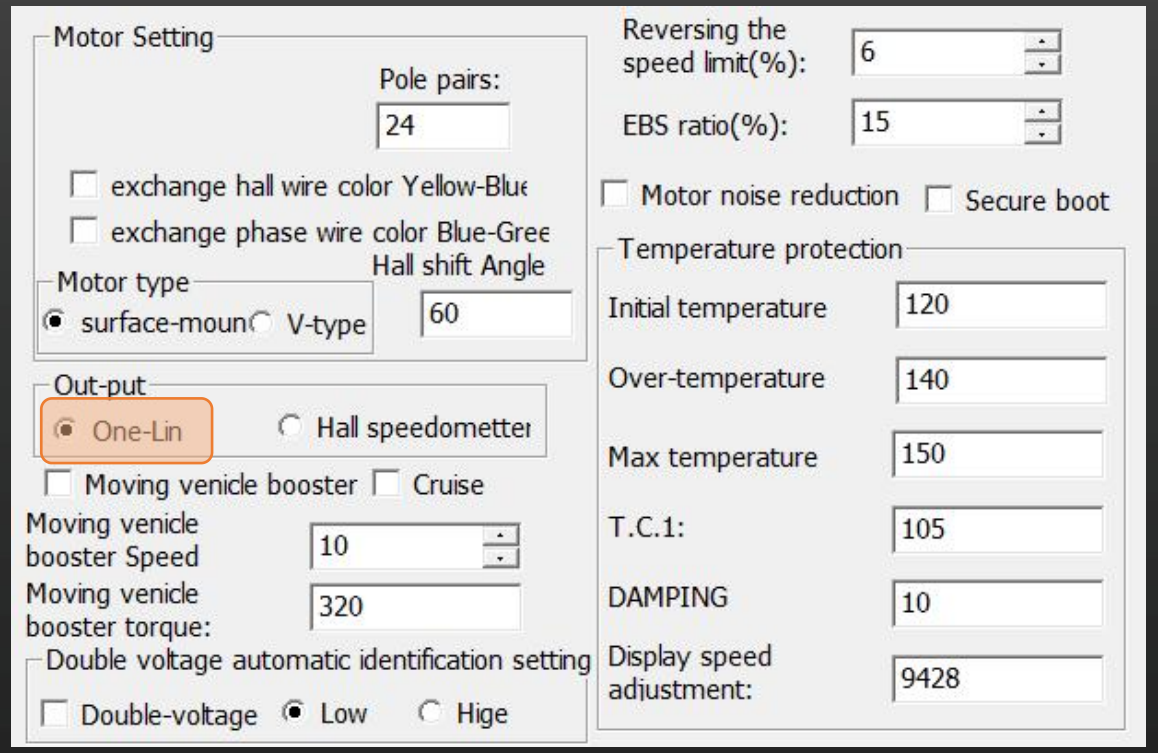
Parameter setting description

3.7 parameter description (port interface)

The port function and the setting interface function selection must be consistent.

Example: EM80 port One Line speedometer settings



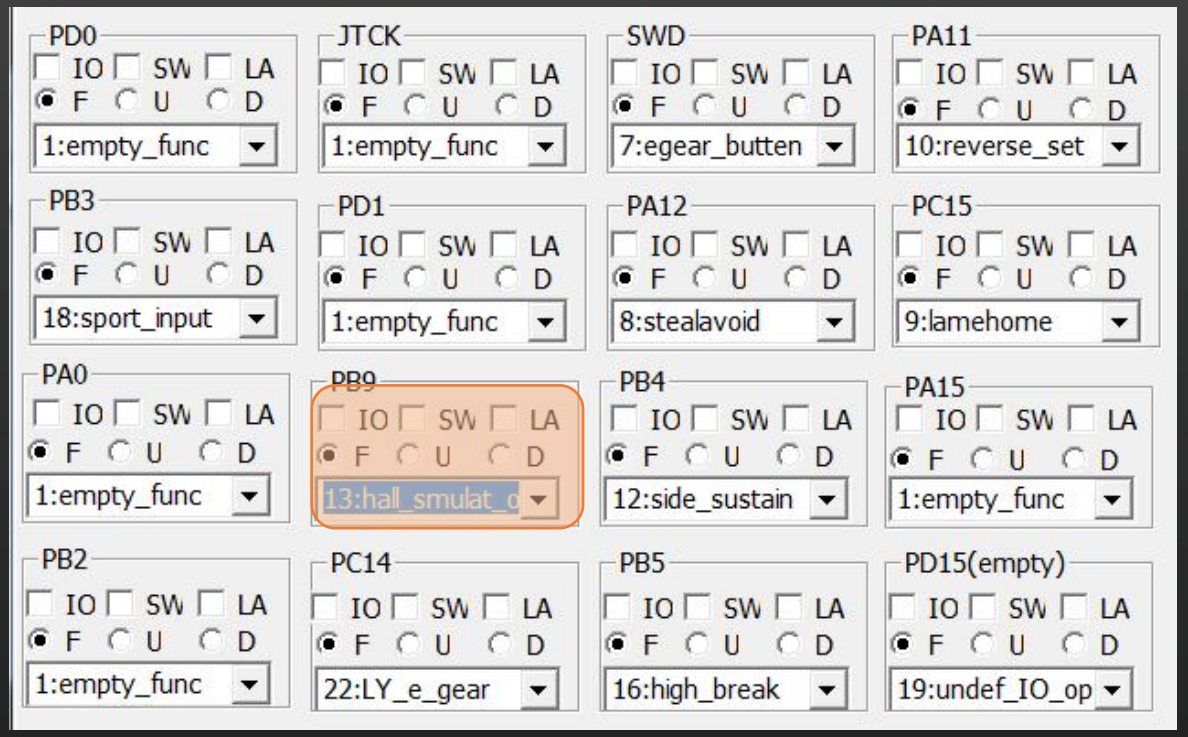


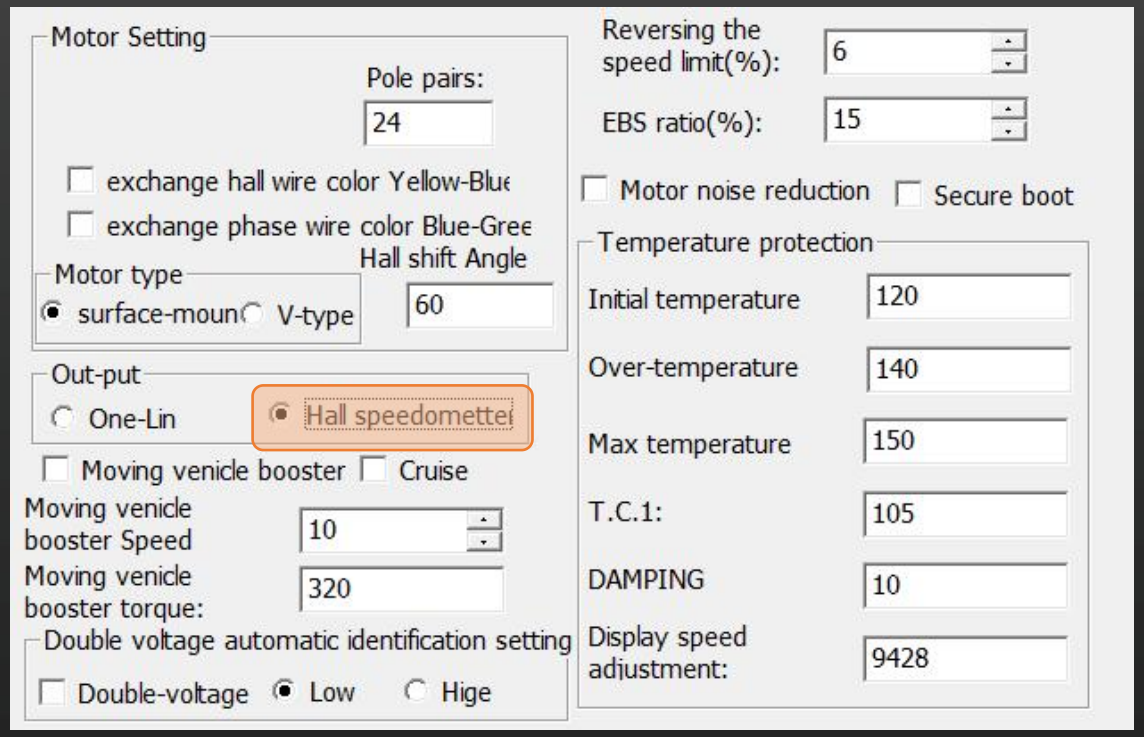
Parameter setting description

3.7 parameter description (port interface)

The port function and the setting interface function selection must be consistent.

Example: EM80 port hall speedometer settings





Error code

4.1 error code

Error Code		
E_BRAKE_ON	0x001	Brake
OVER_CURRENT	0x02	Hardware overcurrent
UNDER_VOLTAGE	0x04	Under voltage
HALL_ERROR	0x08	Hall error
OVER_VOLTAGE	0x10	Over voltage
MCU_ERROR	0x20	Controller error
MOTOR_BLOCK	0x40	Motor block error
FOOTPLATE_ERR	0x80	Throttle error
SPEED_CONTROL	0x100	Run away
WRITING_EEPROM	0x200	EEROM writing
START_UP_FAILURE	0x800	Quality inspection failure
OVERHEAT	0x1000	Controller overheat
OVER_CURRENT1	0x2000	Software overcurrent
ACCELERATE_PADAL_ERR	0x4000	Throttle failure
ICS1_ERR	0x8000	Current sensor error 1
ICS2_ERR	0x10000	Current sensor error 2
BREAK_ERR	0x20000	Brake failure
HALL_SEL_ERROR	0x40000	Hall error
MOSFET_DRIVER_FAULT	0x80000	Driver failure
MOSFET_HIGH_SHORT	0x100000	MOS tube short circuit
PHASE_OPEN	0x200000	Phase wire connection failure
PHASE_SHORT	0x400000	phase wire short circuit
MCU_CHIP_ERROR	0x800000	Controller failure
PRE_CHARGE_ERROR	0x1000000	Pre-charge failure
OVERHEAT1	0x8000000	Motor overheat
SOC_ZERO_ERROR	0x80000000	SOC 0 error

Error code

4.1 error code

Error Code		
MCU_CHIP_ERROR	0x24	Controller error
FOOTPLATE_ERR	0x12	Throttle erroe
OVER_CURRENT	0x42	Over current
HALL_ERROR	0x13	Hall erroe
MAIN_RELAY_DRIVER	0x22	Relay driver erroe
UNDER_VOLTAGE	0x14	Under voltage
OVERHEAT	0x21	Controller overheat
CAN_COMMUNICATION_TIMEOUT	0x23	CAN communicaiton timeout
PRE_CHARGE_ERROR	0x25	Pre-charge error
SPI_COMMUNICATION_ERRO	0x31	Sensor communication error
ANGLE_SENSER_ERROR	0x32	Sensor error
OVERHEAT1	0x33	Motor overheat
OVERHEAT2	0x34	Radiator overheat
MOTOR_BLOCK	0x35	Motor block erroe
MAIN_RELAY_FAULT	0x43	Relay error
OTHER	0x11	Other
The high level blinks quickly and the low level blinks slowly		

After-sale analysis

5.1 After-sale analysis

For after-sale analysis, please refer to this file “ 

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