

Use URT-1 to control Feetech SM servo (SM40BL for example):

1.Refer to URT-1 manual.pdf

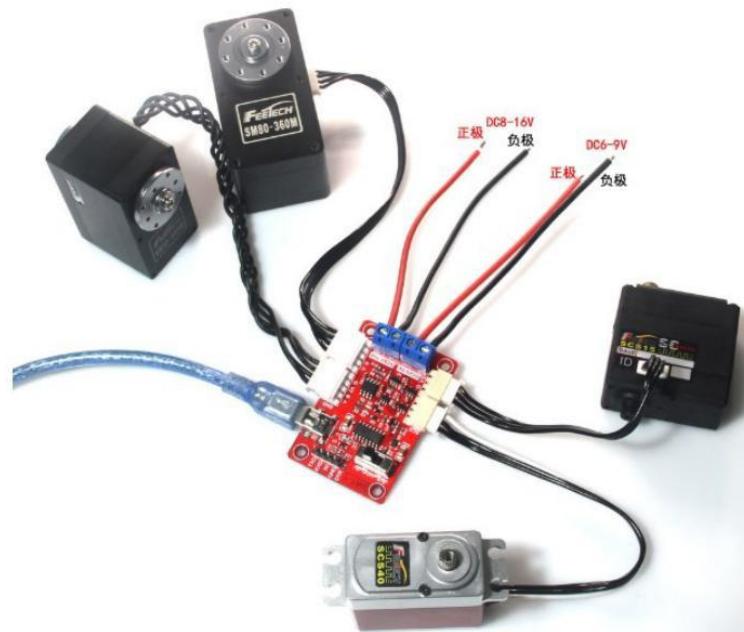
2. Material List:

- ① URT-1 drive board
- ② connect URT-1 and MINI USB cable on computer
- ③ power supply to Feetech Servo
- ④ cable connect servos
- ⑤ Dupont wire (optional)

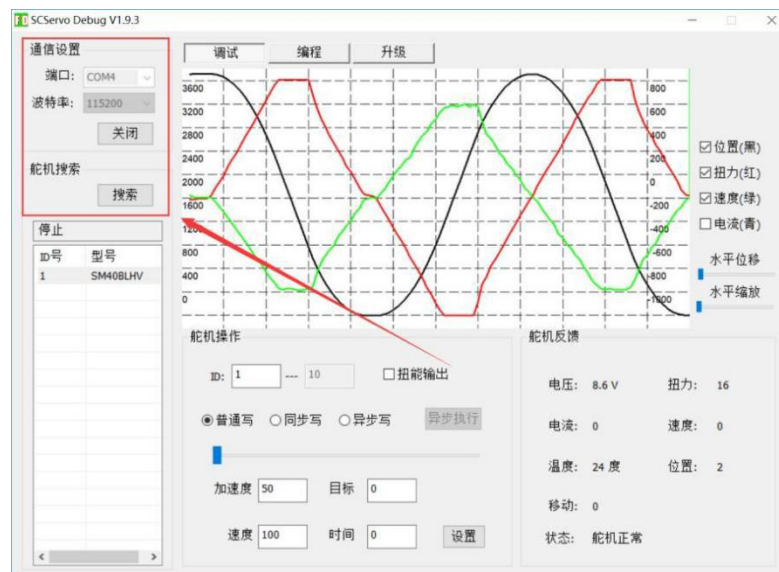
3.Connect URT-1 and computer

4.Install Driver, Refer to document of CH340 drive, Check the serial number of the device manager

5.connect servo to URT-1 , URT-1 connect to power, refer to following picture:

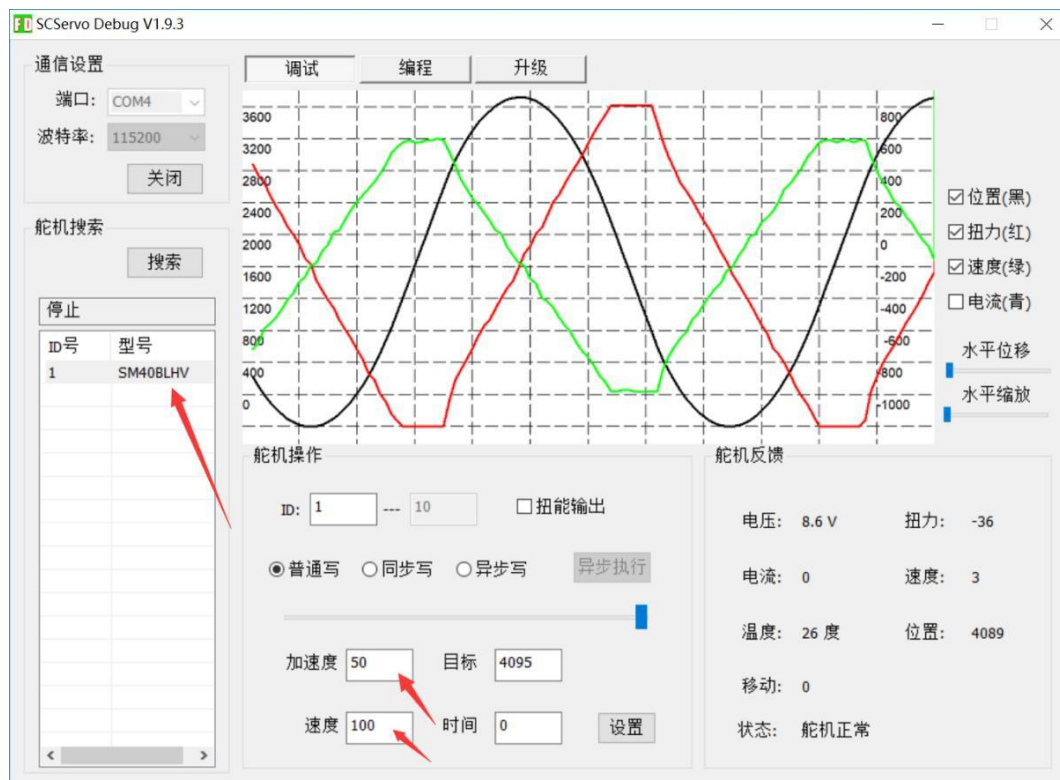


6.Open the software FD software for debugging: select port number (The serial number of the device manager) -Baud Rate (default is 1000000 or 115200) -open-search.



7. Click servo model, input values in Acceleration and velocity, (

The servo without acceleration function only needs to input the speed value



), click setting, pull rod, watch the servo power shaft rotation

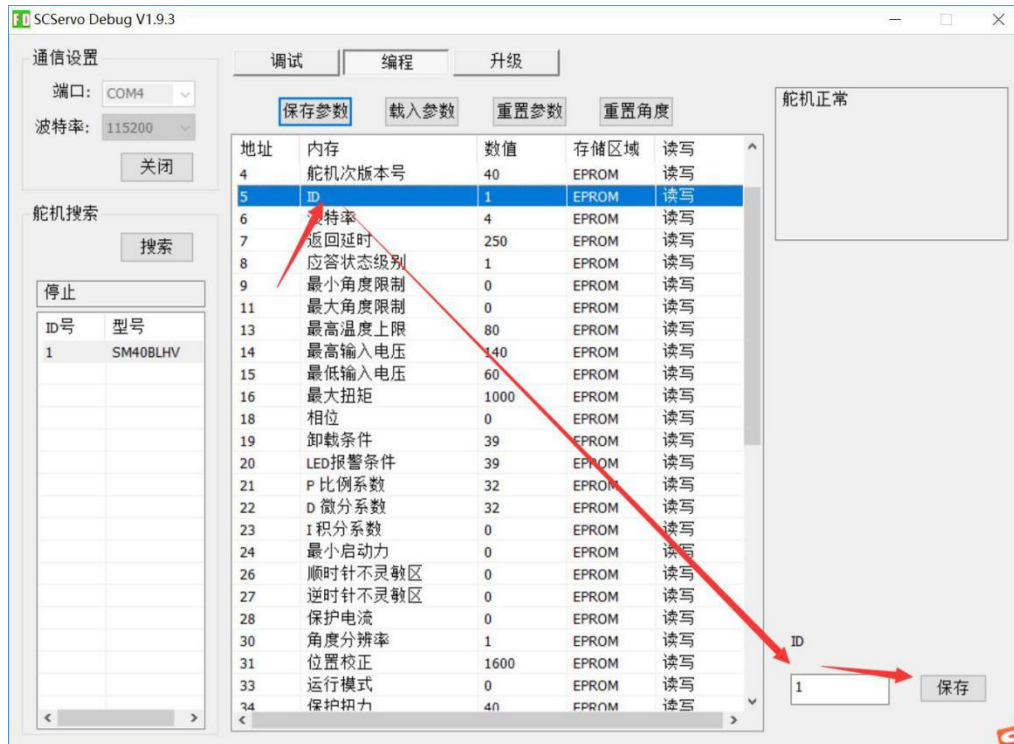
8. More detailed introduction to FD can be seen SC Servo-Debug manual 17.4.6.pdf

9. Modify the servo parameter sheet please click programming.

The screenshot shows the 'Programming' (编程) tab in SC Servo Debug V1.9.3. It displays a table of servo parameters with columns for Address, Memory, Value, Storage Area, and Read/Write permissions. Buttons for 'Save Parameters' (保存参数), 'Load Parameters' (载入参数), 'Reset Parameters' (重置参数), and 'Reset Angle' (重置角度) are visible. A 'Save' (保存) button is at the bottom right.

地址	内存	数值	存储区域	读写
0	固件主版本号	2	EPROM	只读
1	固件次版本号	40	EPROM	只读
3	舵机主版本号	8	EPROM	只读
4	舵机次版本号	40	EPROM	读写
5	ID	1	EPROM	读写
6	波特率	4	EPROM	读写
7	返回延时	250	EPROM	读写
8	应答状态级别	1	EPROM	读写
9	最小角度限制	0	EPROM	读写
11	最大角度限制	0	EPROM	读写
13	最高温度上限	80	EPROM	读写
14	最高输入电压	140	EPROM	读写
15	最低输入电压	60	EPROM	读写
16	最大扭矩	1000	EPROM	读写
18	相位	0	EPROM	读写
19	卸载条件	39	EPROM	读写
20	LED报警条件	39	EPROM	读写
21	P比例系数	32	EPROM	读写
22	D微分系数	32	EPROM	读写
23	I积分系数	0	EPROM	读写
24	最小启动力	0	EPROM	读写
26	顺时针不灵敏区	0	EPROM	读写
27	逆时针不灵敏区	0	EPROM	读写
28	保护电流	0	EPROM	读写
30	角度分辨率	1	EPROM	读写

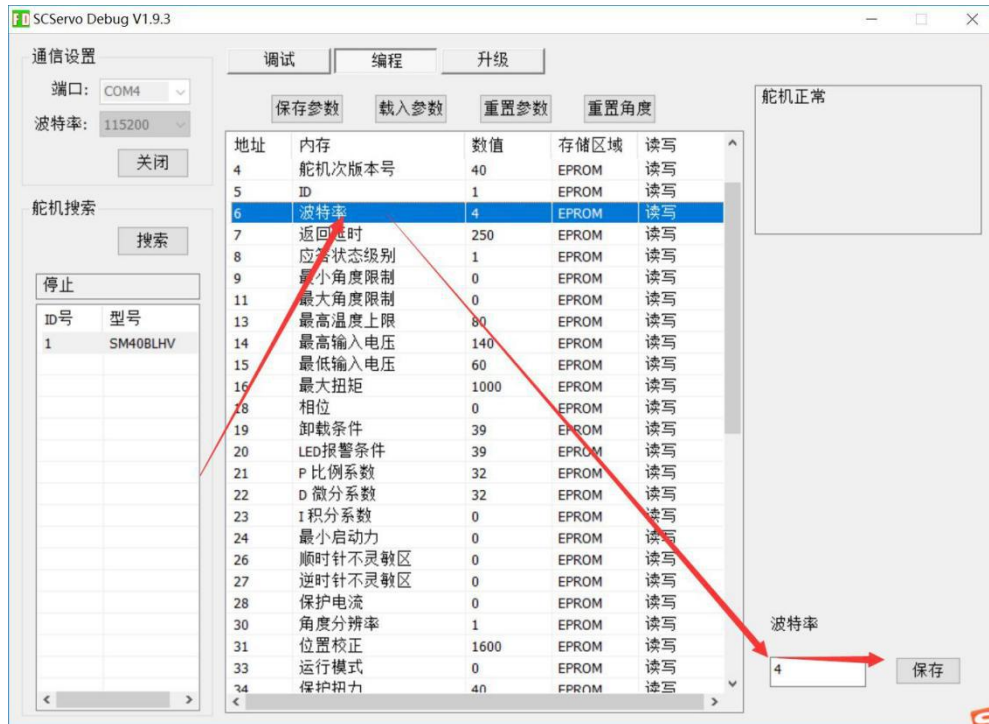
10. How to modify servo parameter? click ID , input numbers at lower right corner then click save that will do.



11. How to modify servo Baud rate? Click Baud rate, input number at lower right corner, then click save that will do.

The baud rate is:

0 Corresponding	1 Corresponding	2 Corresponding	3 Corresponding
1000000	500000	250000	128000
4 Corresponding	5 Corresponding	6 Corresponding	7 Corresponding
115200	76800	57600	38400



12. Same way to modify:

① Modify multi circles rotations:

Address: 30 angle resolution 1 means CW 1 turn, CCW1turn
 2 means CW 2 turns, CCW 2 turns
 。 。 。 Can't over 100

② open pid parameter adjust interface, address: 21-23

③ Zero position calibration function (Position correction), Address: 31

④ Multi Work Mode (0 Position control mode和 1 Constant speed motor mode, 2PWM motor mode)

⑤ Self unloading force protection

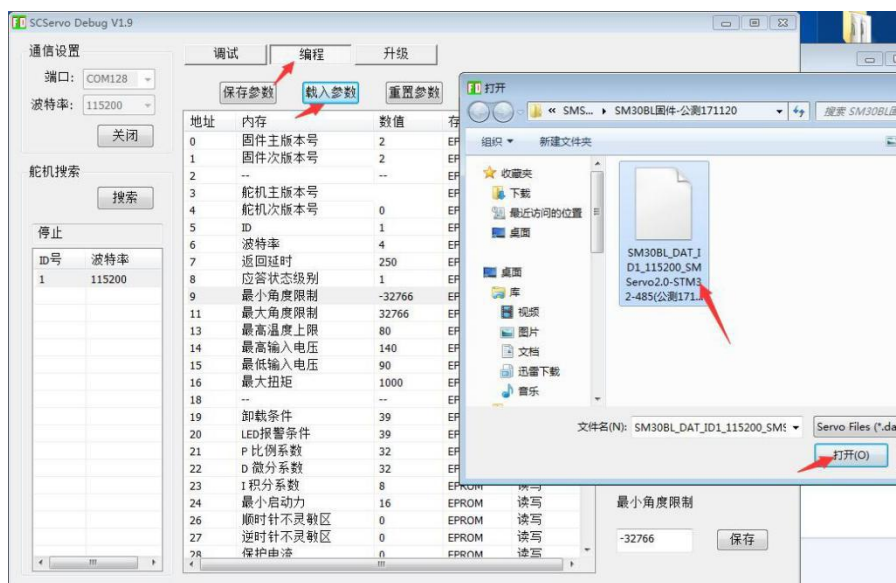
overload protection, Address: 34-36

Over heating protection,Address:13

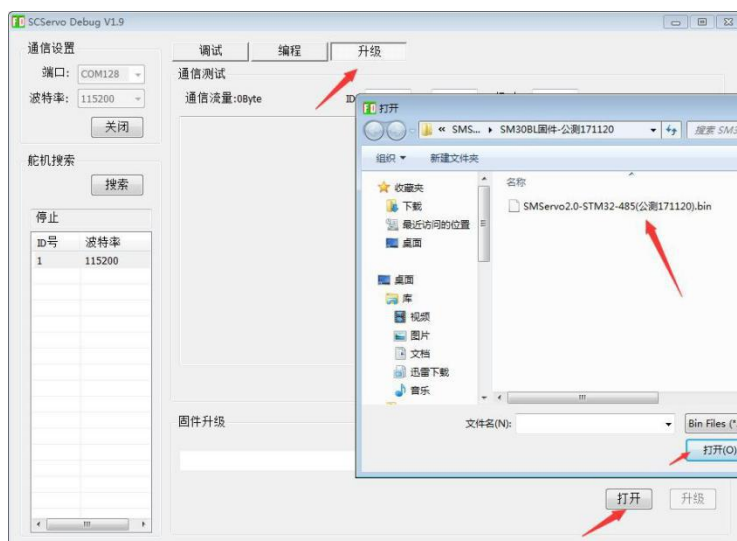
Overcurrent protection, Address: 28

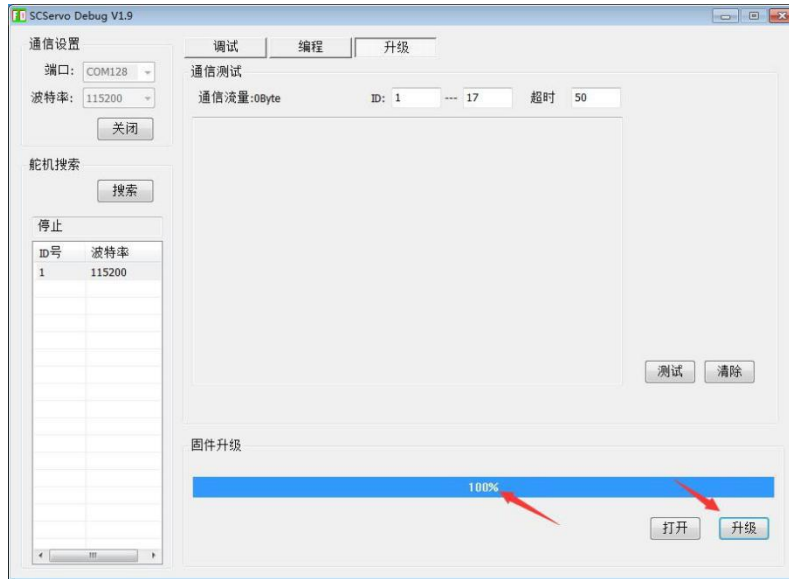
Overvoltage protection, address: 14-15

13. How to load servo parameter:



14. If Update Firmware





Explanation:

- 1.The parameters in the above programming are FD software reading the parameters inside the servo. If you use SCS type or SMCL type, as different function, when FD software reading don't have option at Acceleration, position correction.
 - 2.When first time use the servo, please connect according to instruction illustration, Don't be too hasty and mishandle Positive and negative connection of power supply,cause servo short-circuit and damage the computer hardware.
 - 3.If you are familiar with the above tutorials, The servo is rotating in your careful operation, Congratulations you had learned to control Feetech servo in easy way.
- Next, if you want to enter a professional model, in other ways like Arduino/STM32/PC/JAVA/C++/C# control. We have prepared the communication protocol, memory table, serial debugging assistant and so on for your reference.
- 4.Feetech servo divided into three series:

Feetech servo	Motor type	Communication level	communication protocol	Memory table	Model number
SCS series	Carbon brush/coreless	TTL	SCS1.1 manual(170306)	SCS1.1 Memory table(170307)	SCS009/SCS45/SCS25/SCS15/SCS115 SCS2332/SCS215/SCS40/SCS40-DS/SCS6560
SMS series	SMCL series carbon brush/coreless	RS485	SMS1.0 manual(170301)	SMS1.0 Memory table(170720)	SM30-360M/SM60/SM80/SM100/SM150
	SMBL series brushless	RS485		SM30BL-SMS1.0 memory table (171120)	SM30BL/SM40BL

Note:

The communication protocols of the three series are identical and interworking.