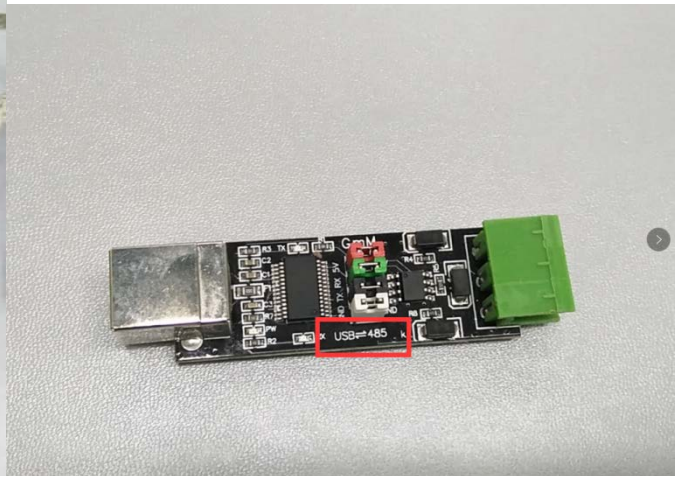
How to connect to PC and use ZLAC8015(D) software

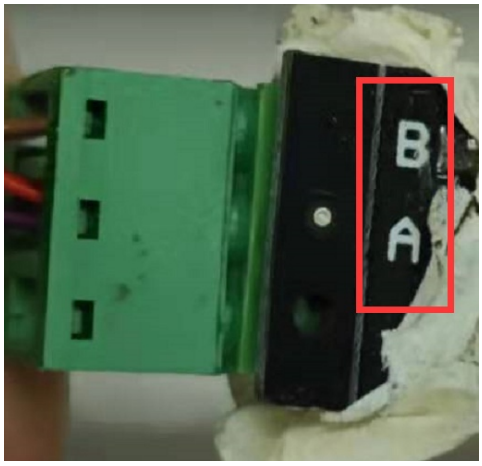
1. Connection

PC→USB to LPT cable → 485 module →debugging cable (A: Orange, B: Brown, provided by ZLTECH) → ZLAC8015(D) CAN&RS485 port (PIN 2, 4 correspond RS485 A, B signal, PIN 6, 8 correspond RS485 A, B signal)

USB to LPT cable



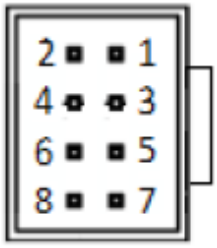
485 module



A: Orange B: Brown

ZLAC8015(D) CAN&RS485 port

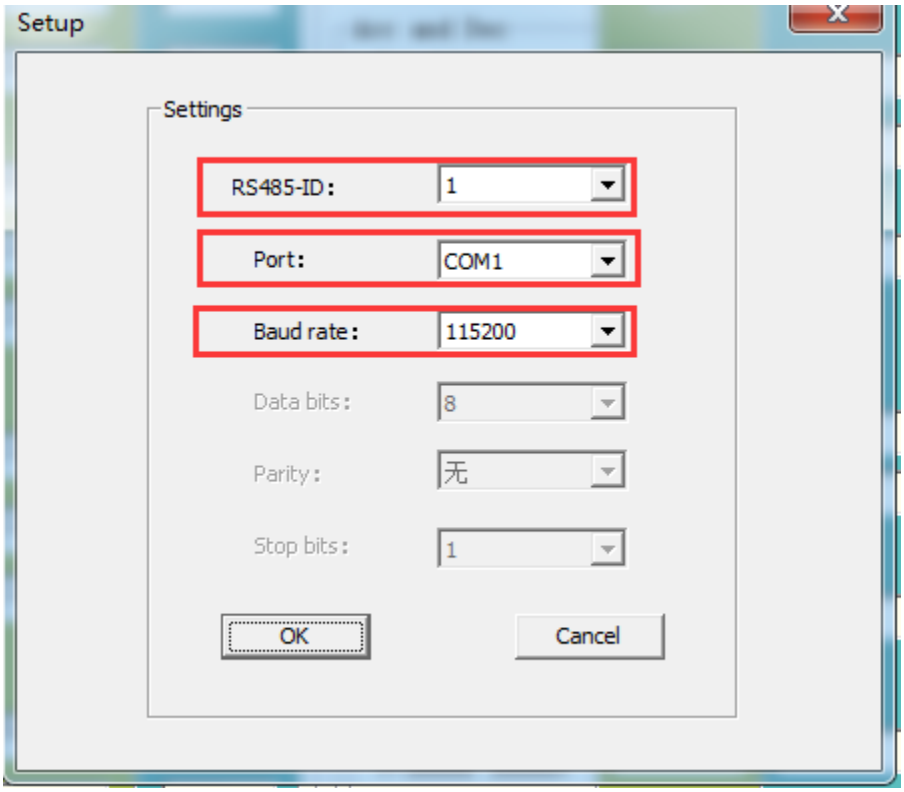
3.1.5 Communication port

Port	Pin	Mark	Name	Function
	1	CANH	CANOPEN	
	3	CANL		
	2	A	RS485	
	4	B		
	5	CANH	CANOPEN	
	7	CANL		
	6	A	RS485	
	8	B		

2. How to set ZLAC8015(D) software

① File →COM Settings

② Setting port parameters



A. R485-ID: the fault RS485-ID of ZLAC8015, ZLAC8030L is 4, the fault RS485-ID of ZLAC8015D is 1.

B. Port: select corresponding port.

(Right-click My Computer → Device Manager → USB Serial Port)

USB Serial Port: supports high frequency, high baud rate (no less than 115200).

USB SERIAL CH340: only supports low baud rate (9600), function is not stable.

Note: The Com port No. cannot exceed 15.

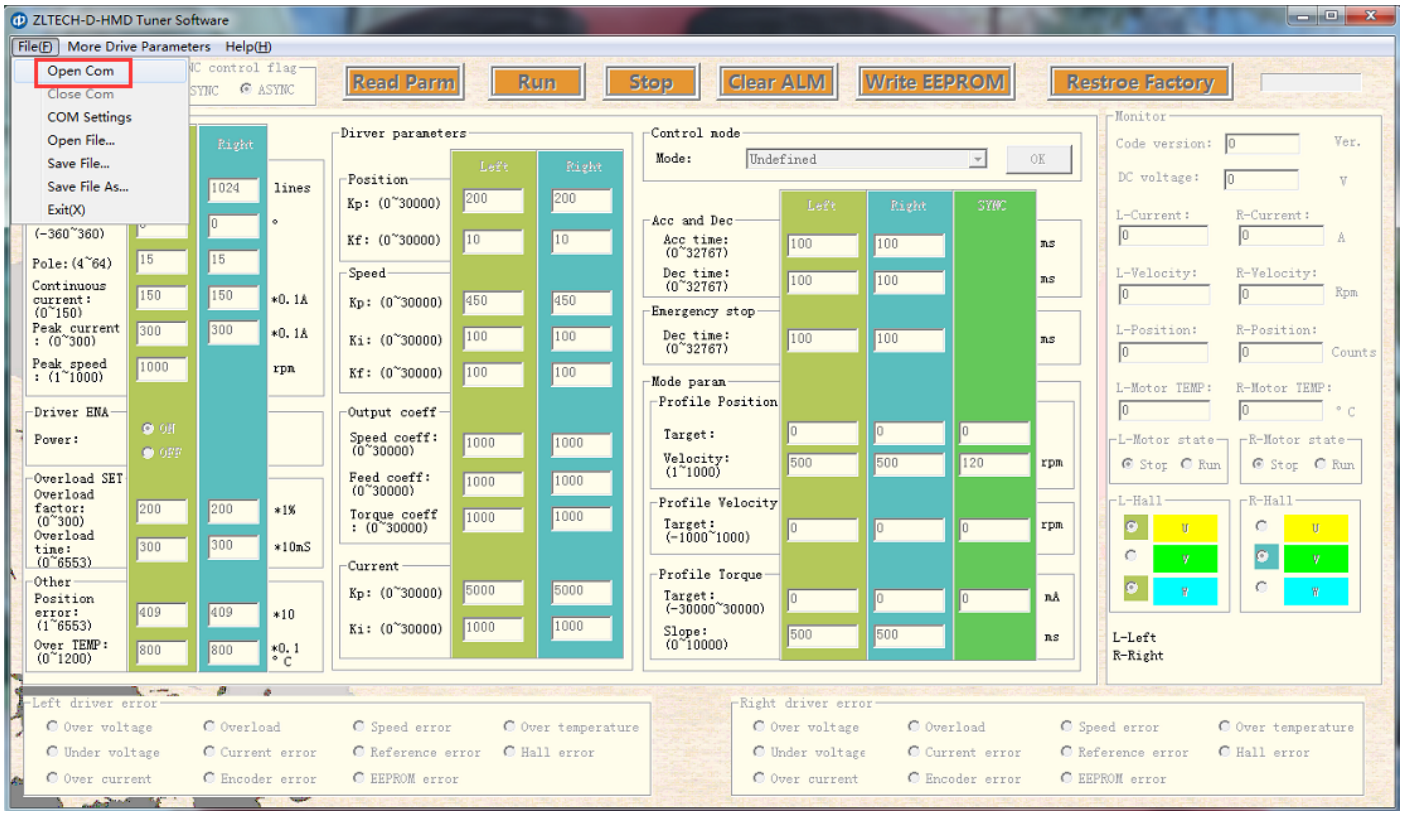
COM serial port cannot be recognized:

Please download a driver application to download drivers.

C. Baud rate:

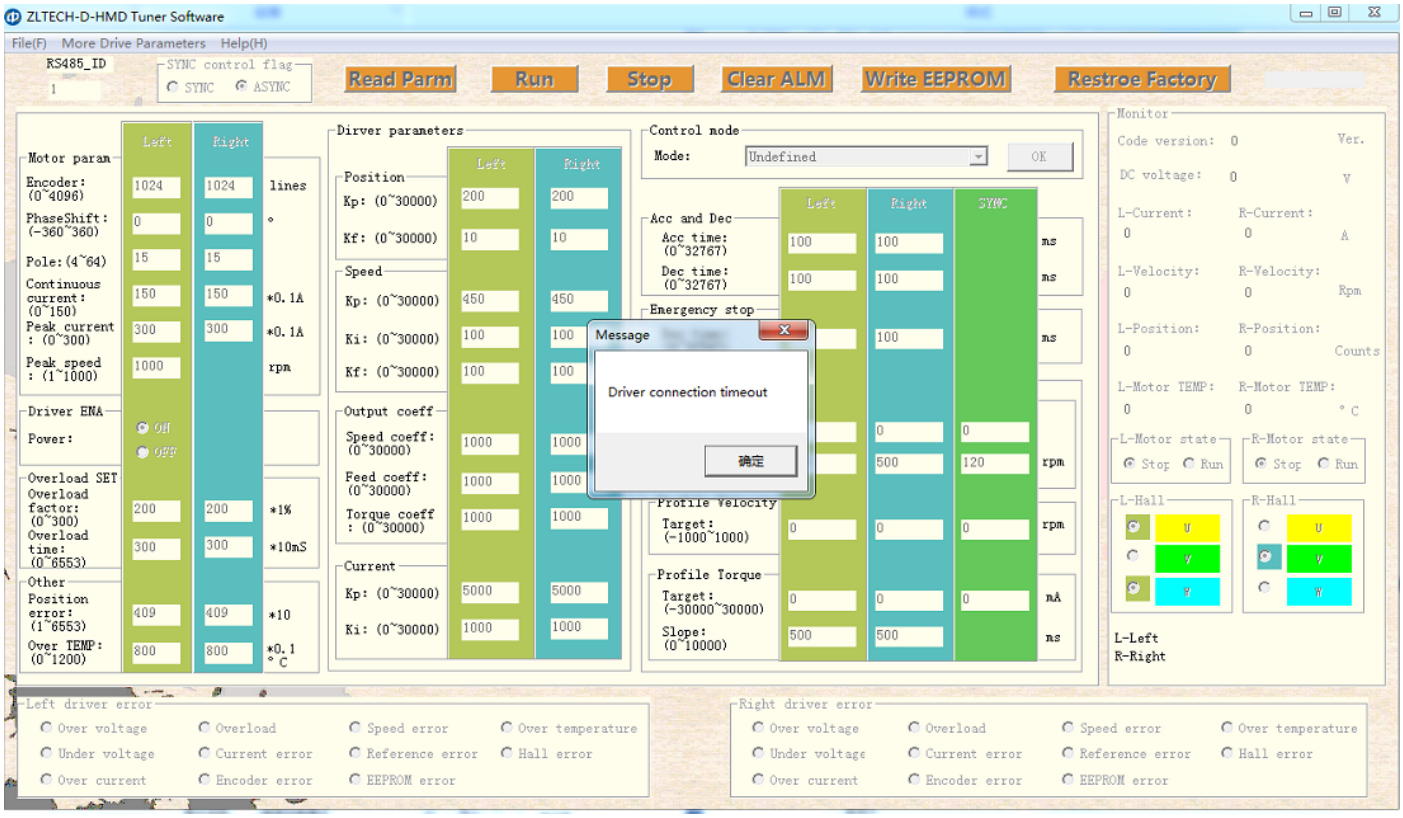
The fault baud rate is: 115200.

③ **Open Com**

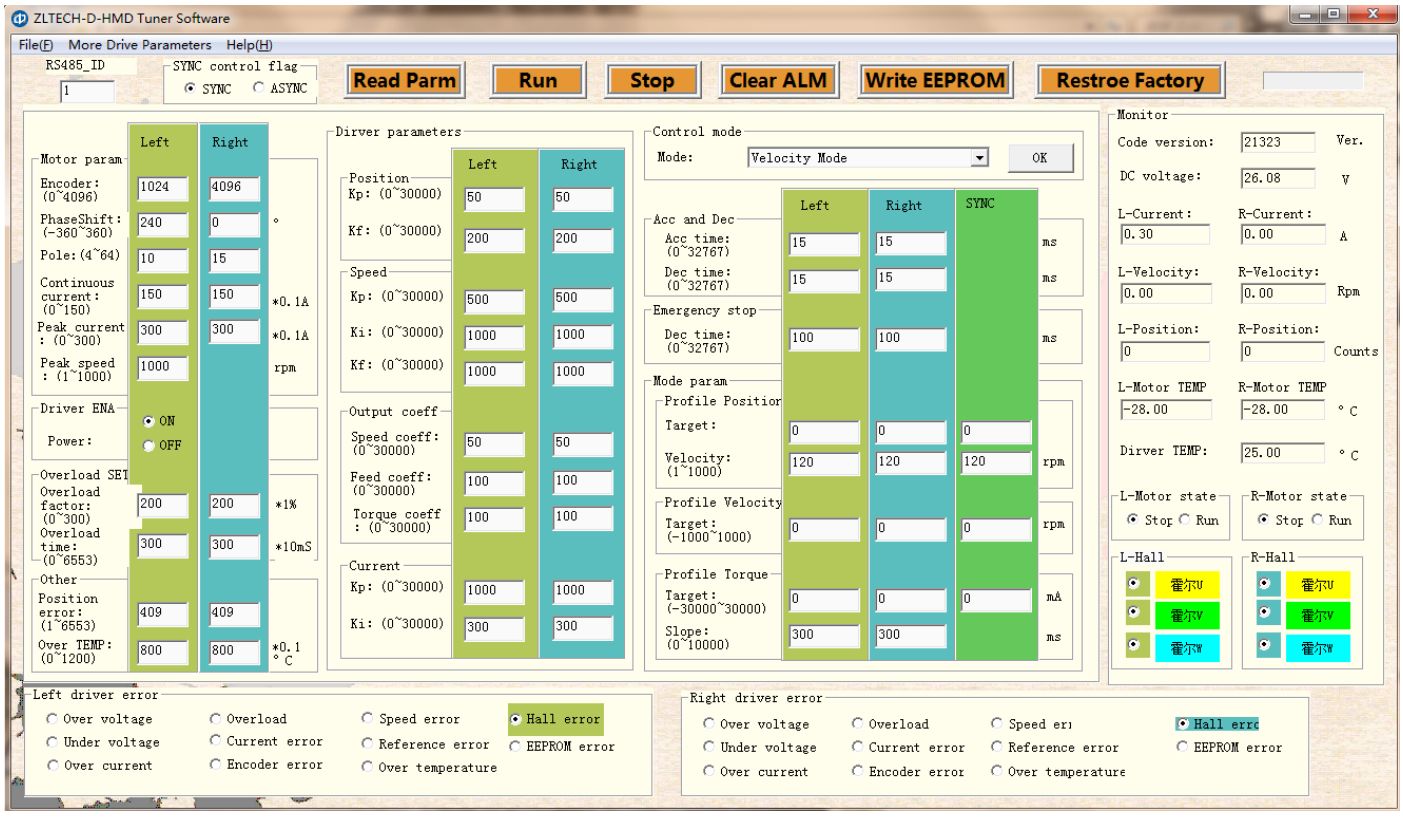


How to judge if the connection succeeds:

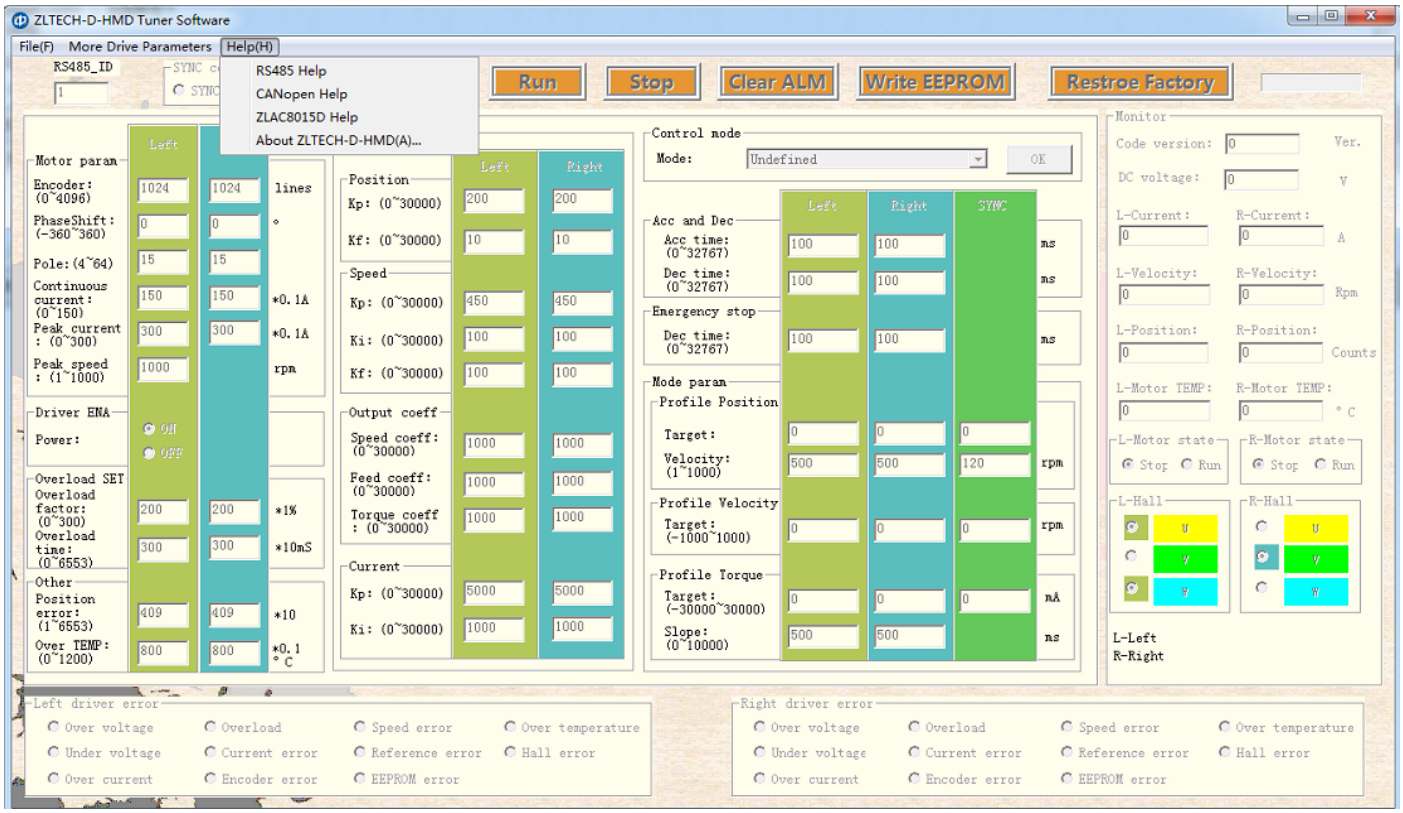
Connetion doesn’t succeed:



Connetion succeeds:



④ Help



A. RS485 Help

Open RS485 communication routine.

B. CANopen Help

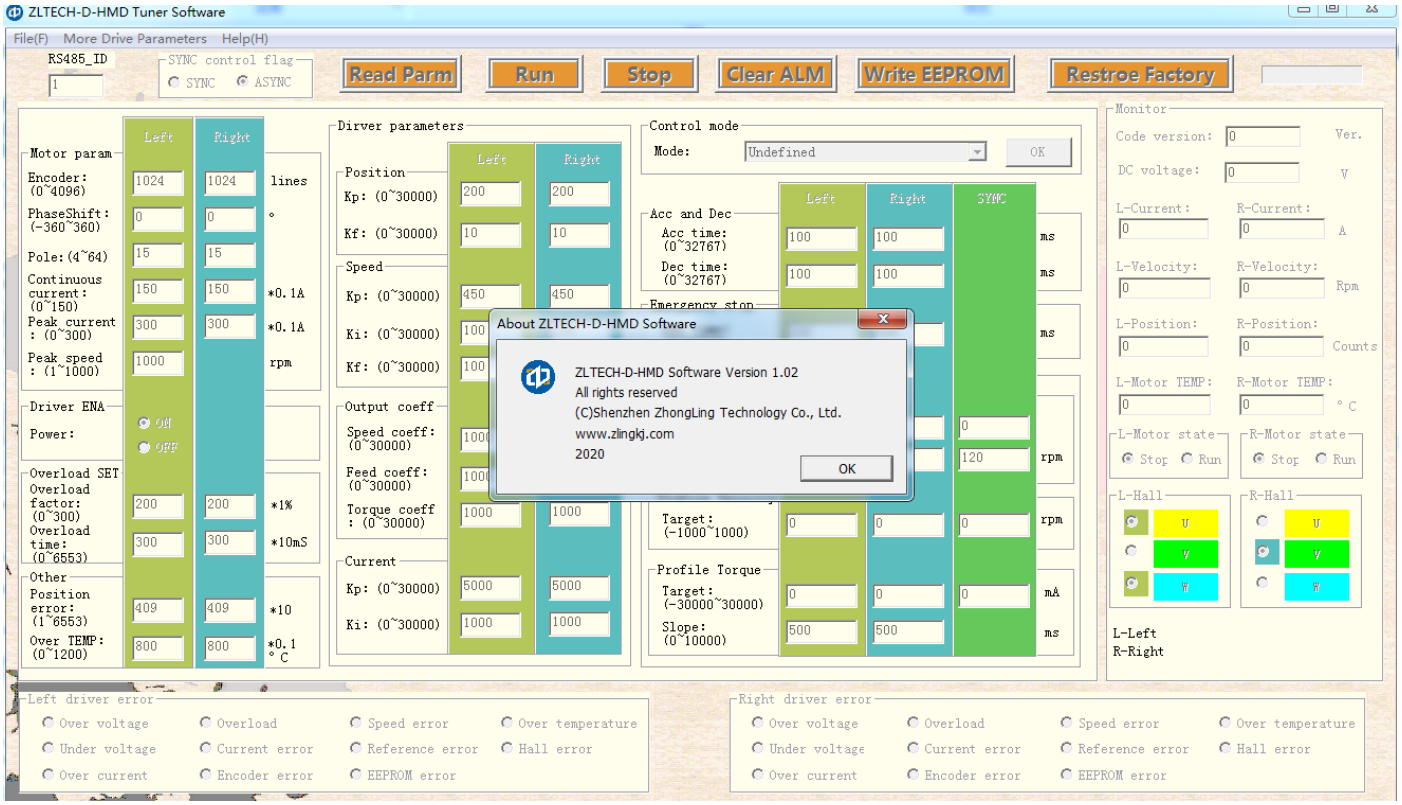
Open CANopen communication routine.

C. ZLAC8015(D) Help

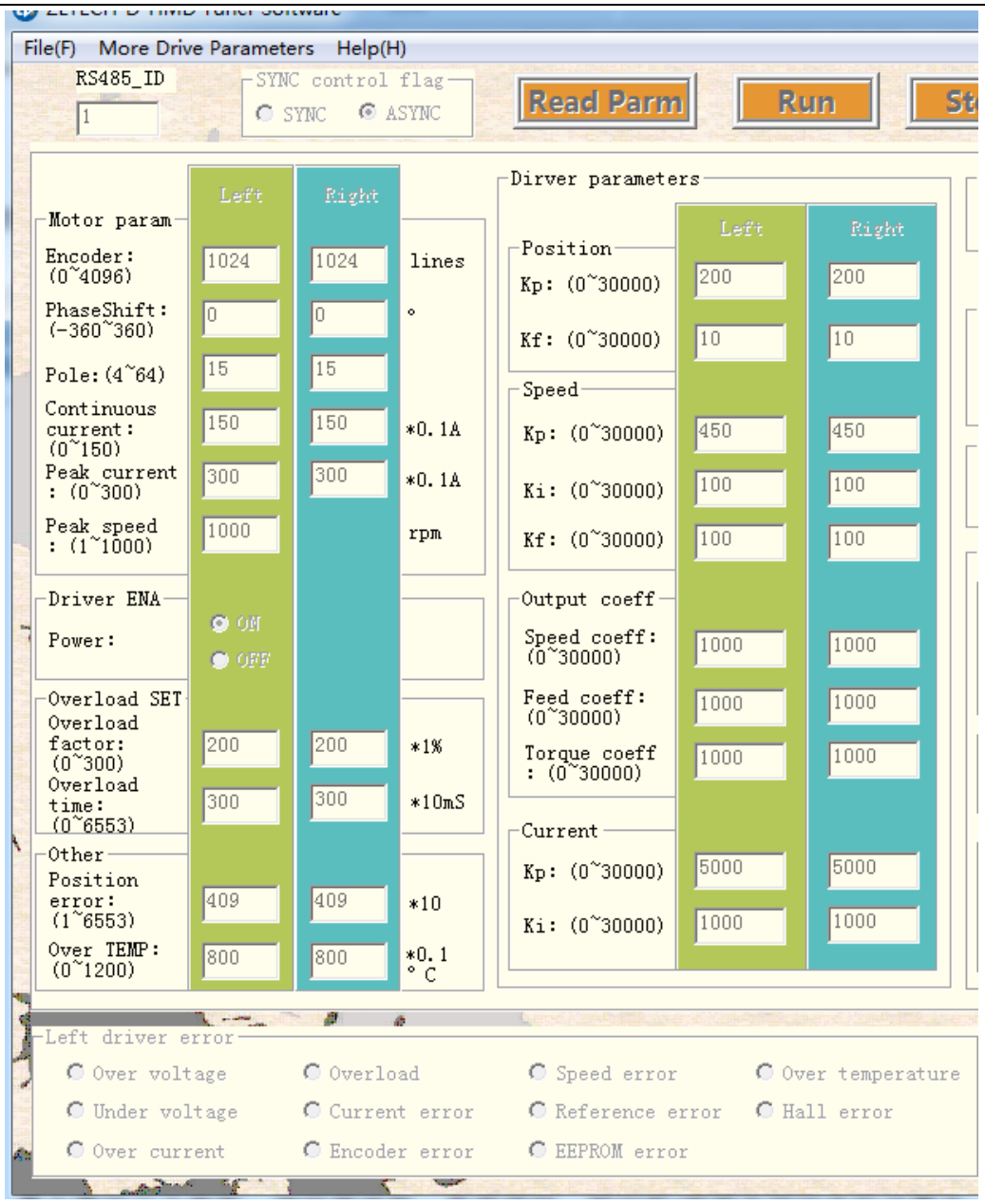
Open ZLAC8015(D) manual.

D. About ZLTECH(-D)-HM

Software Version: 1.02



3. Software interface and function



① **3 main motor parameters:**

Encoder, Phase Shift, Pole (different motors have different parameters)

Motor	Encoder Line	Phase Shift	Pole Pair
ZLLG40ASM100	1024	-60	10
ZLLG45ASM200	1024	0	10
ZLLG50ASM200/ZLLG55ASM150	1024	240	10
ZLLG50ASM200 V2.0/ZLLG55ASM150 V2.0	4096	240	10
ZLLG65ASM250/ZLLG80ASM250	1024	0	15
ZLLG65ASM250 V3.0/ZLLG80ASM250 V3.0	4096	0	15
ZLLG65ASM250-L/ZLLG80ASM250-L	1024	0	15
ZLLG65ASM250-L V3.0/ZLLG80ASM250-L V3.0	4096	0	15
ZLLG65ASM250-4096 V2.0/ZLLG80ASM250-4096 V2.0	4096	0	15
ZLLG65ASM500 V1.0	1024	60	15
ZLLG65ASM500 V2.0	4096	60	15
ZLLG80ASM800 V1.0/ZLLG10ASM800(-R) V1.0	1024	0	20
ZLLG80ASM800 V2.0/ZLLG10ASM800(-R) V2.0/ZLLG13ASM800 V2.0/ZLLG14ASM800 V2.0/ZLLG15ASM800 V2.0/ZLLG16ASM800 V2.0	4096	0	20

② **The relation among continuous current, peak current and overload factor:**

Continuous current * Overload factor = Peak current

③ **Driver Enable**

ON: Shaft is locked when powered on

OFF: Shaft is released when powered on

④ **Kp, Ki parameters in PID adjustment:**

A. Kp (Scale coefficient): impulse the responding speed, increase the adjusting accuracy, adjust errors quickly. (Kp value cannot be too high, otherwise there will be current noise)

B. Ki (Integral coefficient): Eliminate residual errors, and adjust the rigidity of the motor at the same time.

C. How to find optimum value of Kp, Ki:

Adjust Kp from small value using scope 100, then adjust Ki from small value using scope 100

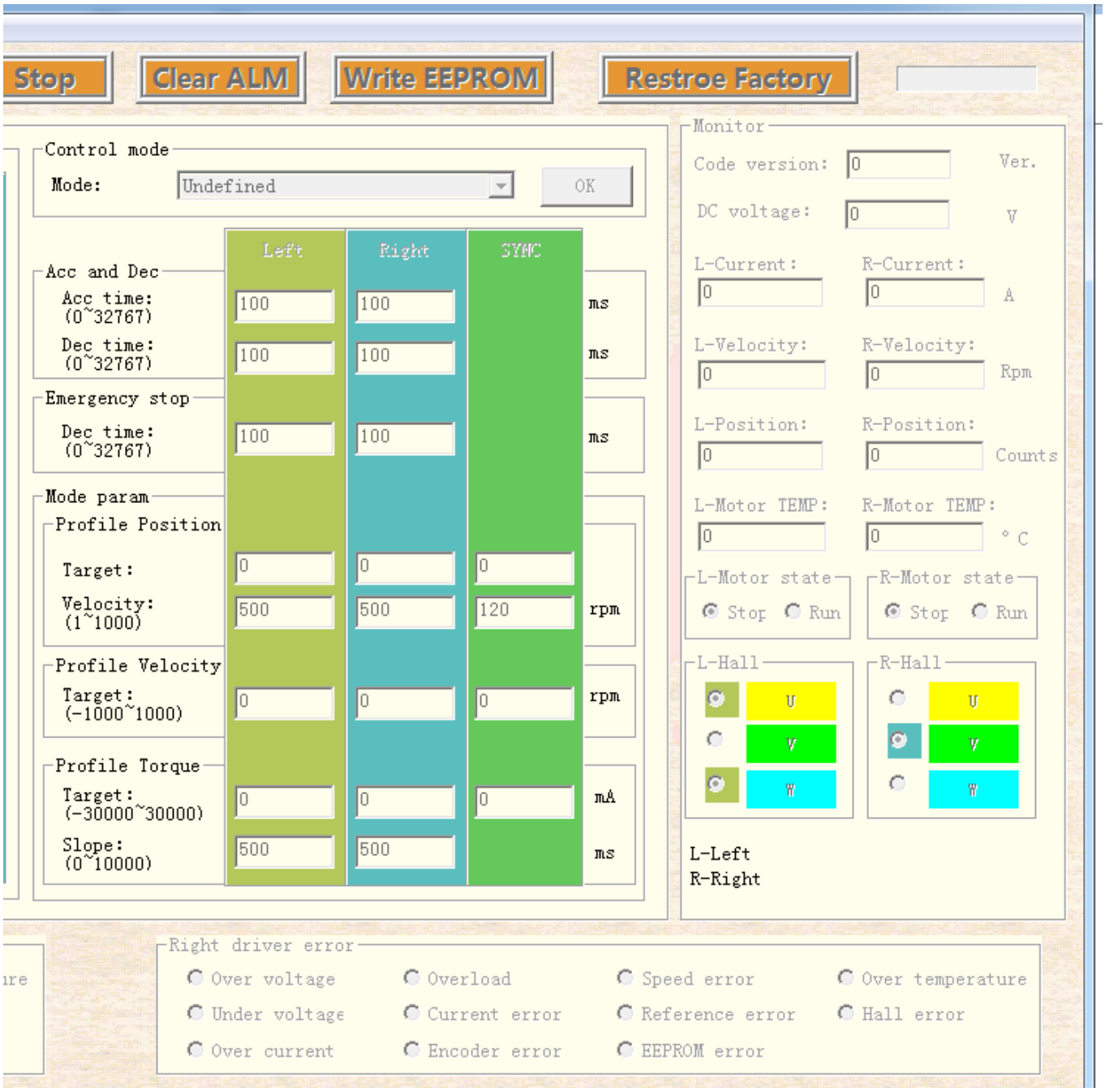
D. Empiric value of PID parameters under velocity mode

Velocity Kp: 200-300

Velocity Ki: 1000-1500

Current Kp: 600-800

Current Ki: 300-400



⑤ **Acceleration and deceleration time**

We suggest customer to use their own acceleration and deceleration algorithm, as customer's own acceleration and deceleration algorithm could make the control effect better.

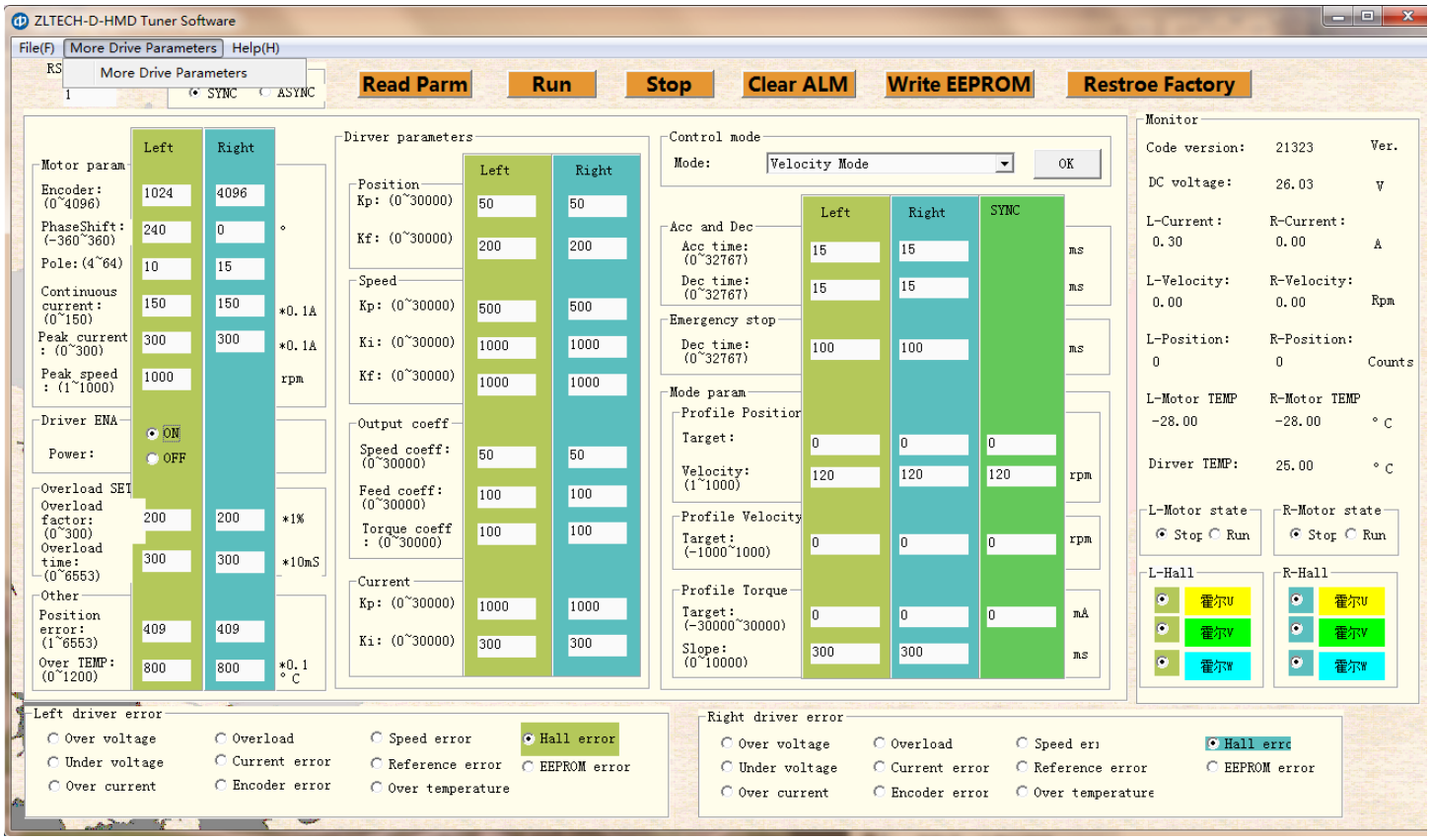
Note: the acceleration and deceleration time must be lower than the time interval the customer changes instructions.

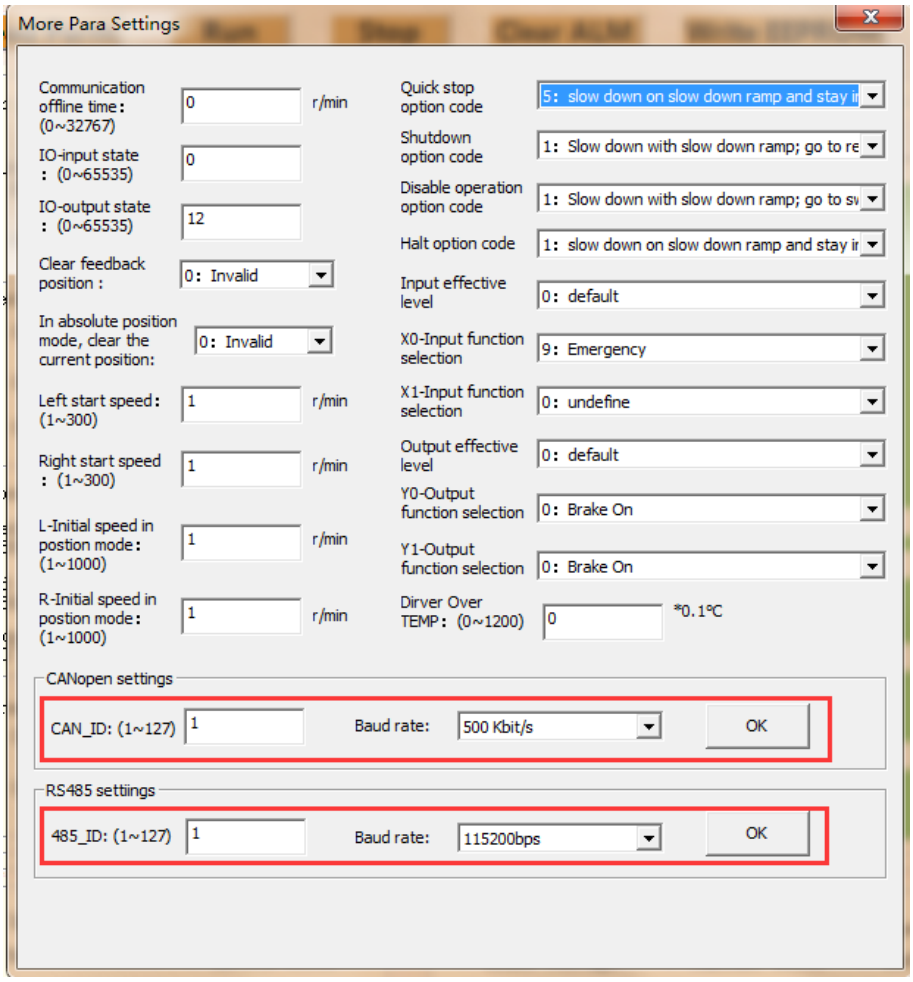
Eg: if the time interval the customer changes instructions is 50ms, so the acceleration and deceleration time should be set to 25ms.

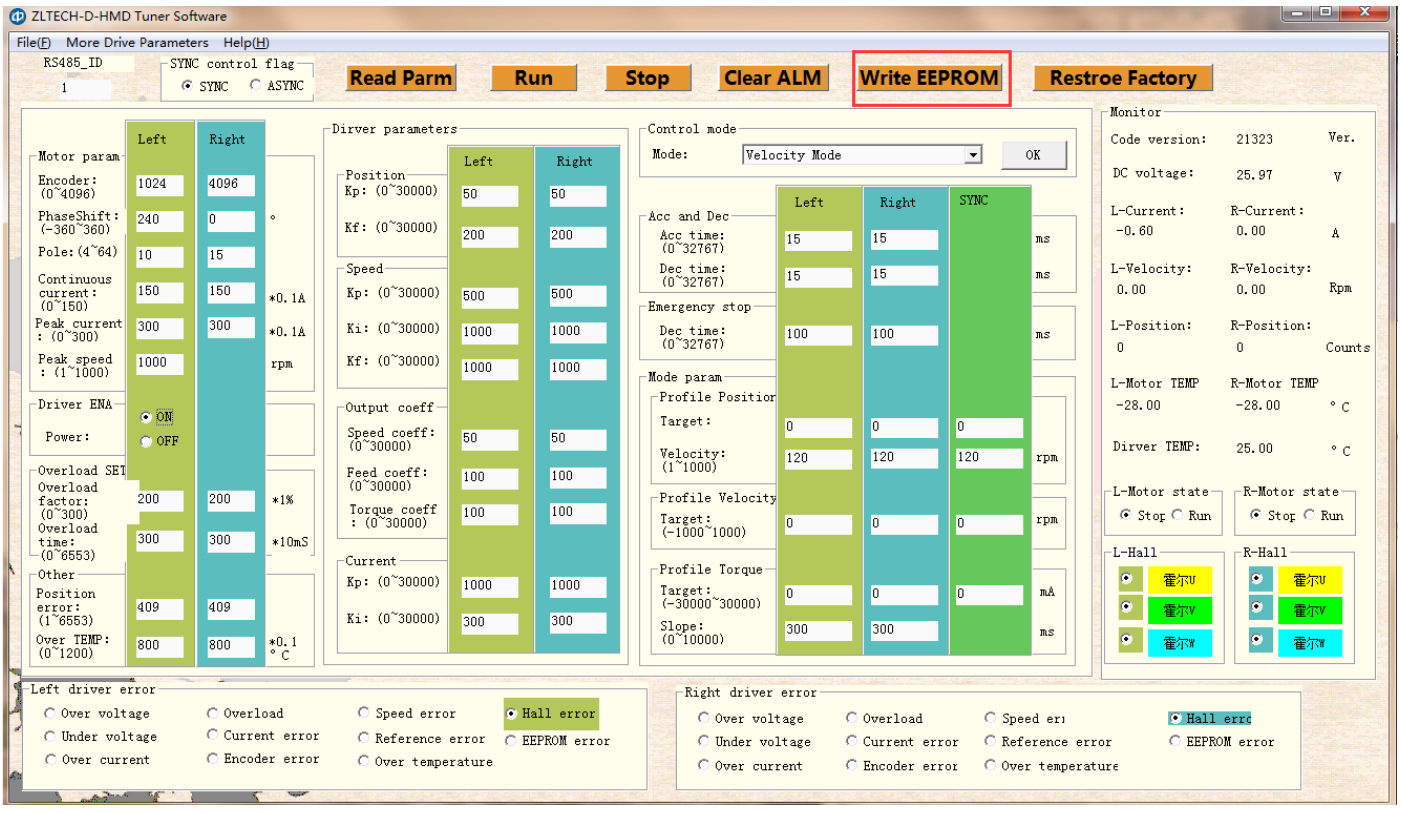
4. Note for setting parameters

When setting CAN or RS485 ID, please note:

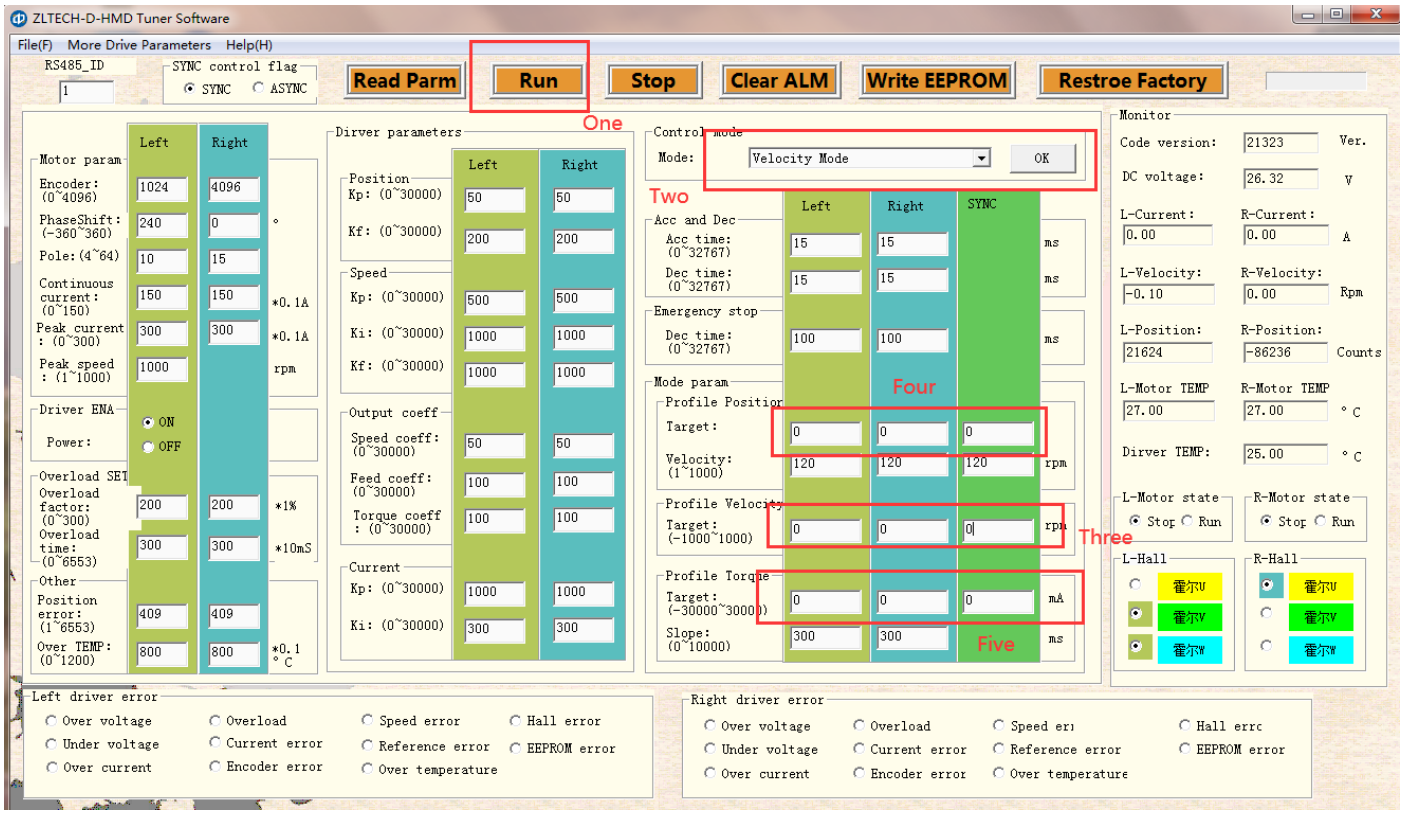
After filling in CAN or RS485 ID, press Enter→Select CAN or RS485 baud rate value, click OK→click Wite EEPROM




More Para Settings
Communication offline time: (0~32767)
0
r/min
IO-input state : (0~65535)
0
IO-output state : (0~65535)
12
Clear feedback position :
0: Invalid
In absolute position mode, clear the current position:
0: Invalid
Left start speed: (1~300)
1
r/min
Right start speed : (1~300)
1
r/min
L-Initial speed in postion mode: (1~1000)
1
r/min
R-Initial speed in postion mode: (1~1000)
1
r/min
Quick stop option code
5: slow down on slow down ramp and stay i
Shutdown option code
1: Slow down with slow down ramp; go to re
Disable operation option code
1: Slow down with slow down ramp; go to sv
Halt option code
1: slow down on slow down ramp and stay i
Input effective level
0: default
X0-Input function selection
9: Emergency
X1-Input function selection
0: undefine
Output effective level
0: default
Y0-Output function selection
0: Brake On
Y1-Output function selection
0: Brake On
Dirver Over TEMP: (0~1200)
0
*0.1℃
CANopen settings
CAN_ID: (1~127)
1
Baud rate:
500 Kbit/s
OK
RS485 settiings
485_ID: (1~127)
1
Baud rate:
115200bps
OK


ZLTECH-D-HMD Tuner Software
File(F) More Drive Parameters Help(H)
RS485_ID
1
SYNC control flag
SYNC
ASYNC
Read Parm
Run
Stop
Clear ALM
Write EEPROM
Restroe Factory
Motor param
Left
Right
Encoder: (0~4096)
1024
4096
PhaseShift: (-360~360)
240
0
Pole:(4~64)
10
15
Continuous current: (0~150)
150
150
*0.1A
Peak current : (0~300)
300
300
*0.1A
Peak speed : (1~1000)
1000
rpm
Driver ENA
Power:
ON
OFF
Overload SET
Overload factor: (0~300)
200
200
*1%
Overload time: (0~6553)
300
300
*10mS
Other
Position error: (1~6553)
409
409
Over TEMP: (0~1200)
800
800
*0.1 °C
Dirver parameters
Position
Kp: (0~30000)
50
50
Kf: (0~30000)
200
200
Speed
Kp: (0~30000)
500
500
Ki: (0~30000)
1000
1000
Kf: (0~30000)
1000
1000
Output coeff
Speed coeff: (0~30000)
50
50
Feed coeff: (0~30000)
100
100
Torque coeff : (0~30000)
100
100
Current
Kp: (0~30000)
1000
1000
Ki: (0~30000)
300
300
Control mode
Mode:
Velocity Mode
OK
Acc and Dec
Left
Right
SYNC
Acc time: (0~32767)
15
15
ms
Dec time: (0~32767)
15
15
ms
Emergency stop
Dec time: (0~32767)
100
100
ms
Mode param
Profile Position
Target:
0
0
0
Velocity: (1~1000)
120
120
120
rpm
Profile Velocity
Target: (-1000~1000)
0
0
0
rpm
Profile Torque
Target: (-30000~30000)
0
0
0
mA
Slope: (0~10000)
300
300
ms
Monitor
Code version:
21323
Ver.
DC voltage:
25.97
V
L-Current:
-0.60
R-Current:
0.00
A
L-Velocity:
0.00
R-Velocity:
0.00
Rpm
L-Position:
0
R-Position:
0
Counts
L-Motor TEMP
-28.00
R-Motor TEMP
-28.00
° C
Dirver TEMP:
25.00
° C
L-Motor state
Stop
Run
R-Motor state
Stop
Run
L-Hall
霍尔U
霍尔V
霍尔W
R-Hall
霍尔U
霍尔V
霍尔W
Left driver error
Over voltage
Overload
Speed error
Hall error
Under voltage
Current error
Reference error
EEPROM error
Over current
Encoder error
Over temperature
Right driver error
Over voltage
Overload
Speed er
Hall erro
Under voltage
Current error
Reference error
EEPROM error
Over current
Encoder error
Over temperature

5. How to control motor using ZLAC8015(D) software



Please check if the motor parameters are matched with the motor P/N firstly.

① Click RUN

② Select control mode→click OK (if you need to save control mode, you need to clock Write EEPROM→restart power)

③ Profile Velocity control mode: fill target velocity→press Enter

④ Profile Position control mode: fill target position and velocity→press Enter

⑤ Profile Torque control mode: fill target torque and slope→press Enter