Serial Drive Manual

Catalog

1、ComSet Interface

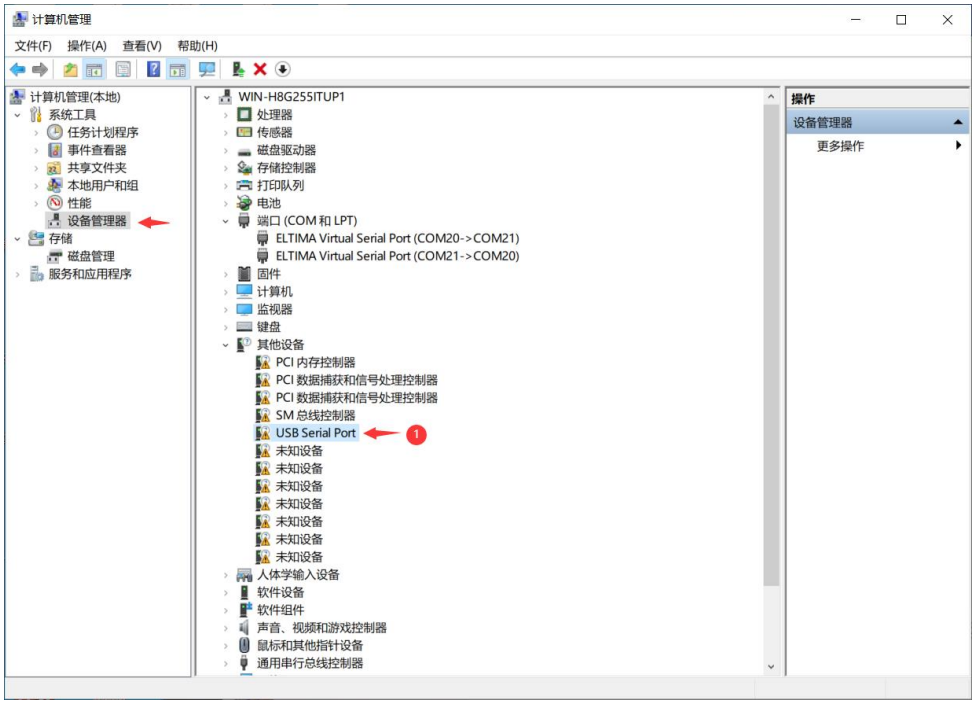
1.1 Interface Introduction

Id	Function
1	Select the device model, which is the connected driver model
2	Select the serial port and the drive needs to be installed when connecting to the motor using the module
3	Select serial bit rate, default 19200
4	Select site number, default 1
5	Site search, which can be searched when there is only one driver connected and the site is not confirmed
6	Connect and disconnect

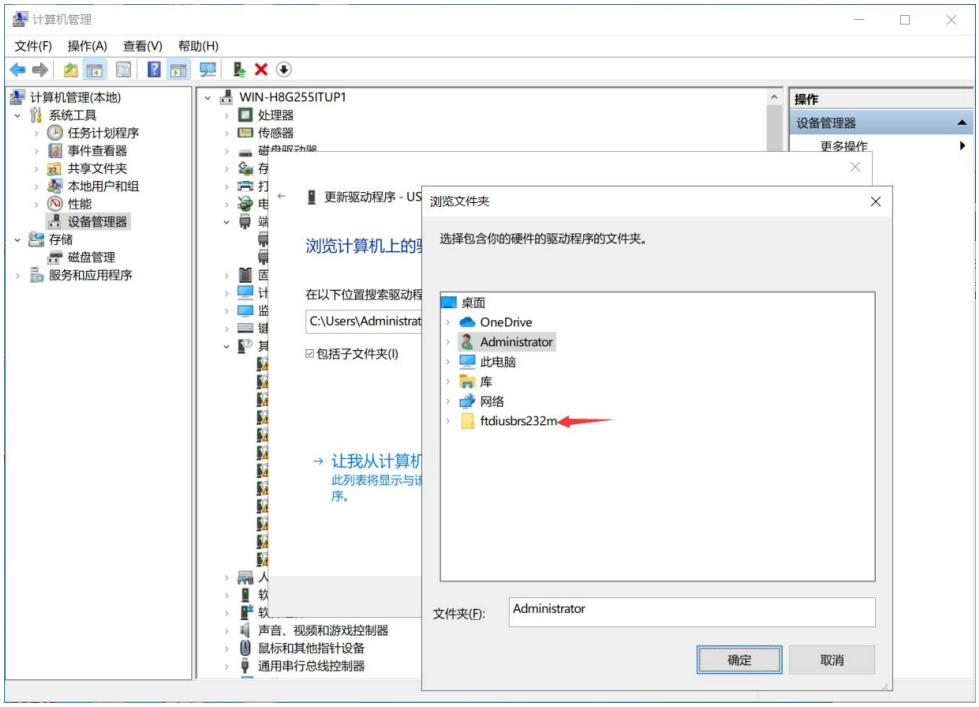
1.2 Connection Preparation

1.2.1 Drive Installation

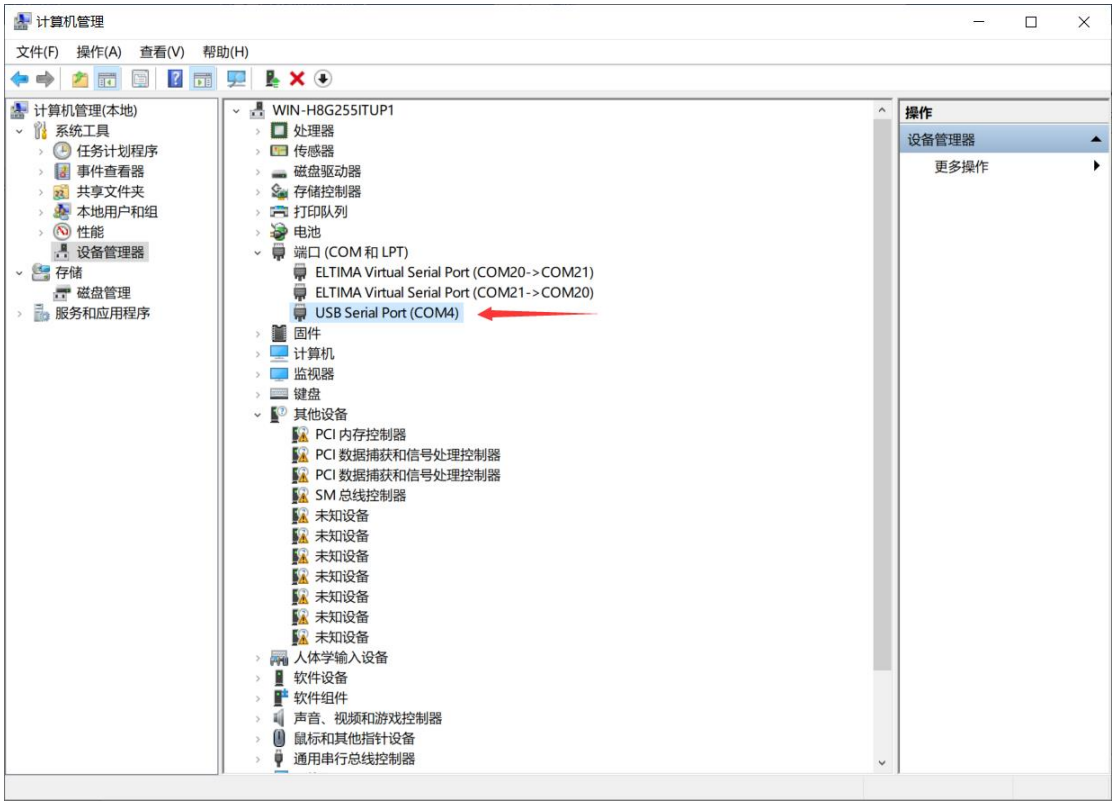
Right-click My Computer - Manage, open the computer management interface, select Device Manager.



If ①USB Serial Port appears on other devices, Right-click - Update driver choose to browse my computer to find driver, click Browse, select driver folder, ok click next, driver is installed.



After the driver installation is successful, you can see USB Serial Port under the port option, and the driver installation is successful.



1.2.2 Set Connection Parameters

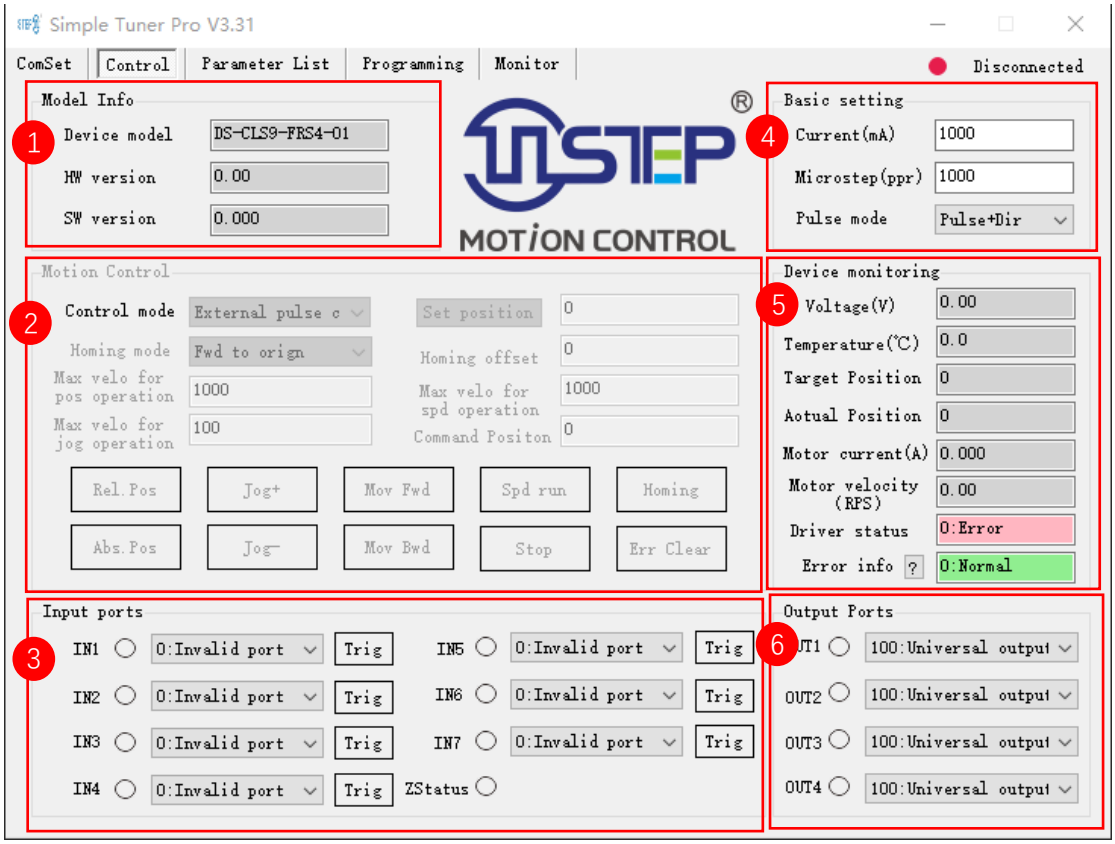
Select the device model, the device model needs to be consistent with the connected driver model, and then select the serial port, that is, the device access computer out of the serial port, if you first open the software in the access serial module, you need to press the refresh key, re-read the serial port, and then select the correct serial port. Then select the serial Baud Rate, the default Baud Rate is 19200, just select. Finally, the site number, generally if no modification default is 1, confirm it.

Once you've confirmed it's all done, tap Connect, and the software jumps to the device monitoring interface.

2、Control Interface

2.1 Interface Introduction

The device monitoring interface is divided into 6 parts, Model Information、Motion Control、Input ports、Basic setting、Device monitoring and Output ports.



Id	Function
1	Displays the driver basic information
2	Set motion parameters and perform basic control and alarm clearing
3	Set the input ports configuration and software trigger
4	Set the run's microstep and current
5	Displays the current status of the device
6	Set the output ports configuration

2.2 Use Introduction

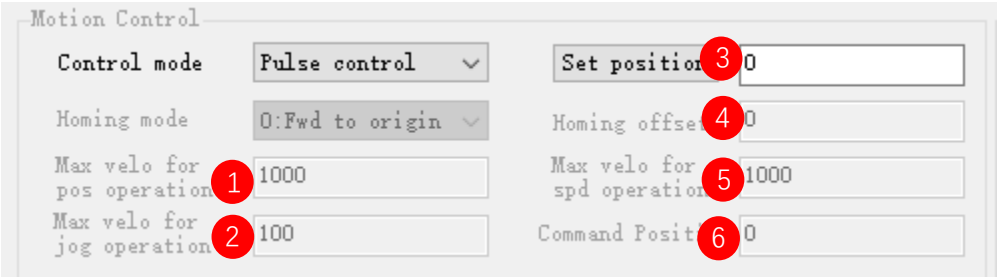
2.2.1 Model Information and Device monitoring

Both parts are display sections where product information is automatically read when

connected, and device detection is constantly updated to implement the real-time parameters of the device, including the real-time status of motors such as bus voltage driver temperature.

2.2.2 Basic setting and Motion Control

The first is to set the current setting and segmentation setting, the current setting value should be consistent with the motor current, the segmentation setting determines the number of pulses per revolution of the motor, generally after the first set-up will not change. Then there are the parameters and the corresponding functions.

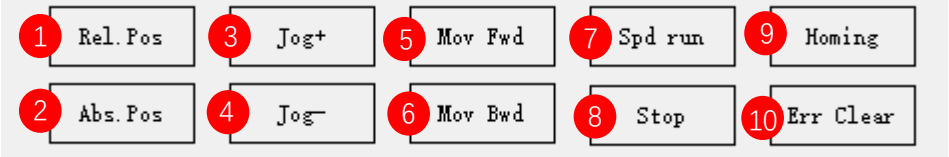


Id	Affected Button	Function
1	Rel.Pos , Abs.Pos , Mov Fwd, Mov Bwd	Setting the position mode velo unit (0.01rps) is independent of microstep
2	Jog+, Jog-	Set Jog mode velo
3	Set position	When set position is pressed, replace the actual position with the value in the box
4	Homing	Set orign offset, Pulses entered in the extra motion box after the return-to-origin motion ends
5	Spd run	Set velo mode velo
6	Rel.Pos , Abs.Pos , Mov Fwd, Mov Bwd	Set the number of pulses to run

The main concern is the speed of several movements, the units are 0.01rps, do not calculate the subdivision, directly calculate the number of laps per second.

The specific position of operation needs to refer to the instruction position and the actual position, the motor without the encoder cannot display the actual position, always show 0, the motor with the encoder will show the actual position. The operation of all buttons modifies the command position, which is always equal to the actual position in closed-loop mode. Open loop mode may appear deviation, after power-up the default command position is 0, that is, the default origin, the relationship between the instruction position and segmentation is: segmentation set a pulse to run a circle, such as segmentation set 1000, when the command position is 1000, the motor is rotating forward, the command position is -1000, the motor is running a circle in reverse.

Then there is the control mode, the internal pulse control is directly through the drive motor control, can be directly used in the software interface of the ten buttons to achieve motor control. The button functions as follows:



Id	Data reference	Action
1	Position mode velo Running pulse num	Instruction position increases running pulse num. Move backward when the motor actually moves the circle (Microstep/Running pulse num), with a symbol, running pulse num is negative.
2	Position mode velo Running pulse num	Set the instruction position to running pulse num and the motor runs to the command position.
3	Jog mode velo	Move forward at Jog mode velo while holding.
4	Jog mode velo	Move backward at Jog mode velo while holding.
5	Position mode velo Running pulse num	Same Rel.Pos as the Id 1
6	Position mode velo Running pulse num	Instruction position increases running pulse num. Move forward when the motor actually moves the circle (Microstep/Running pulse num), with a symbol, running pulse num is negative.
7	Velo mode velo	Run at velo mode, and the command position automatically increases by microstep
8	Null	Stop running while running
9	Null	Make Homing mode, This is explained separately below.
10	Null	Clear the alarm when there is an alarm.

The operating logic of Homing mode is shown in Figure 2.1Homing+ and Figure 2.2 Homing-

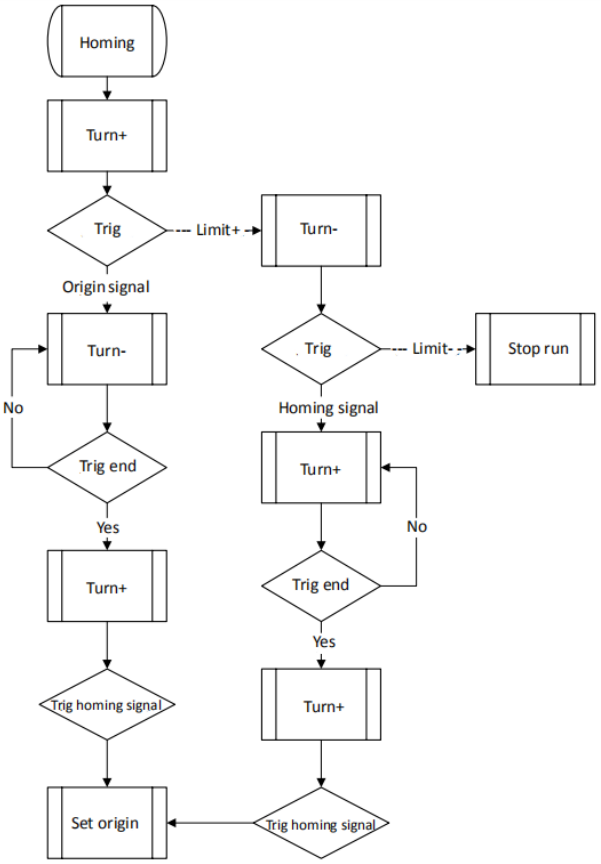


Figure2.1 Homing+

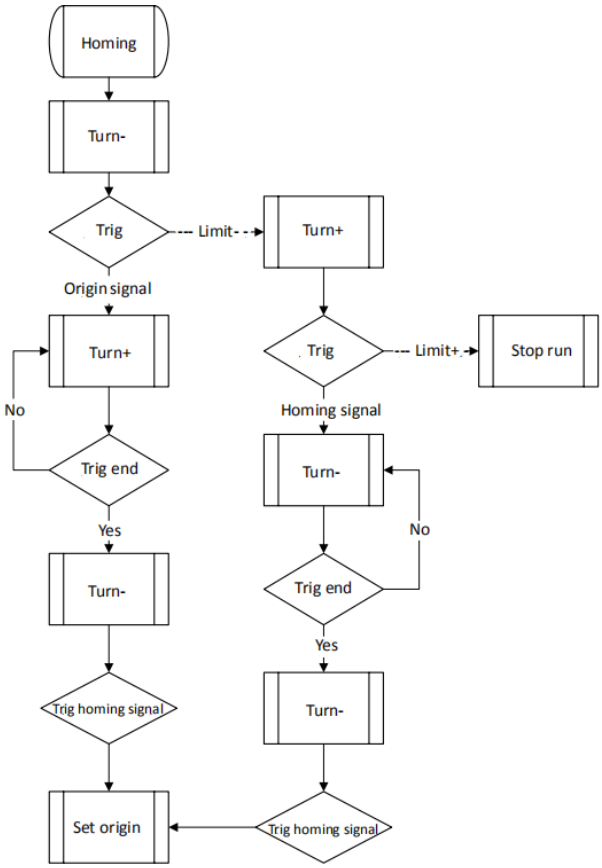


Figure2.2 Homing-

2.2.3 Input ports and Output ports

The input port configuration allows for simple control through external triggering, and the functionality of the same name in the drop-down list and the button above is not repeated, mainly the function not mentioned above.

First is input port configuration

Function Id	Function	Note
0	Make the port invalid, no action	
7	Let the port stop quickly, faster than slow down	
9	Triggers a limit+ signal	Used at the homing
10	Triggers a limit- signal	Used at the homing
16	Start running multiple segments	
17	Pause running multiple segments	
18	Stop running multiple segments	
20	The motor is offline when triggered and resumes when it is not triggered	
25	Input program bit0	
26	Input program bit1	
27	Input program bit2	
28	Input program bit3	
29	Input program bit4	

Function id 25-2's input program bit is described in the following multi-segment uniform.

The next is output port configuration

Function Id	Function	Note
100	Universal output, which can be triggered by modifying parameters	
101	No alarm status triggered	
102	Positioning completes the trigger	
103	Triggered when the enables control to servo ON	
104	Invalid	

3、Parameter List Interface

3.1 Interface Introduction

Parameter List Interface is mainly to adjust the movement parameters and parameters bulk import, most of the parameters by our engineers to match, this section mainly describes the parameters commonly used to need to be modified in the parameter setting interface and parameters import and export methods.

3.2 Parameter Introduction

The main parameters that need to be used are as follows

Parameter category	Address	Function
Basic para	298	Serial Port Rate
Basic para	299	Station No.
Input port logic	429	Input port logic
Output port setting	428	Universal digital output control
Output port setting	430	Output port setting

Serial bit rate is the serial baud rate on the interface, the default is 19200, need to change can be changed manually, but should not exceed the driver support on-line.

The station number corresponds to the site number on the connection interface, 485 bus can be connected to many devices at the same time, in the middle through the modbus protocol communication, each machine's site number should be the only one at this time need to modify the site number to achieve multi-device access and control.

Input port logic can change the input port trigger logic, input range is 0-65535, where bit0-bit6 corresponds to in1-in7, when the corresponding bit data is 1, the logic of the input port inversion, here is an example, when the address 429 (input port settings) data is 1, bit0 s 1, and then in1 logic inversion, default trigger, when there is signal input, trigger end.

IN1	IN2	……	IN7	Data
0	0	……	0	0
1	0	……	0	1
0	1	……	0	2
1	1	……	0	3
……	……	……		
1	1	……	1	127

The output port logic is modified the same as the input port logic, which is not repeated here.

Universal digital output control corresponds to universal digital output, which can be controlled directly from the data at the output port when the universal output is set up in the output port configuration. The input range is 0-15, the data bit0-bit3 corresponds to out1-out4, for example, when the address 428 (universal digital output control) data is 1, then bit0-1 then out1 in the universal output mode output high level.

OUT1	OUT2	OUT3	OUT4	Data
0	0	0	0	0
1	0	0	0	1
0	1	0	0	2
1	1	0	0	3
……	……	……	……	……
1	1	1	1	15

4、Programming Interface

4.1 Programming Feature Introduction

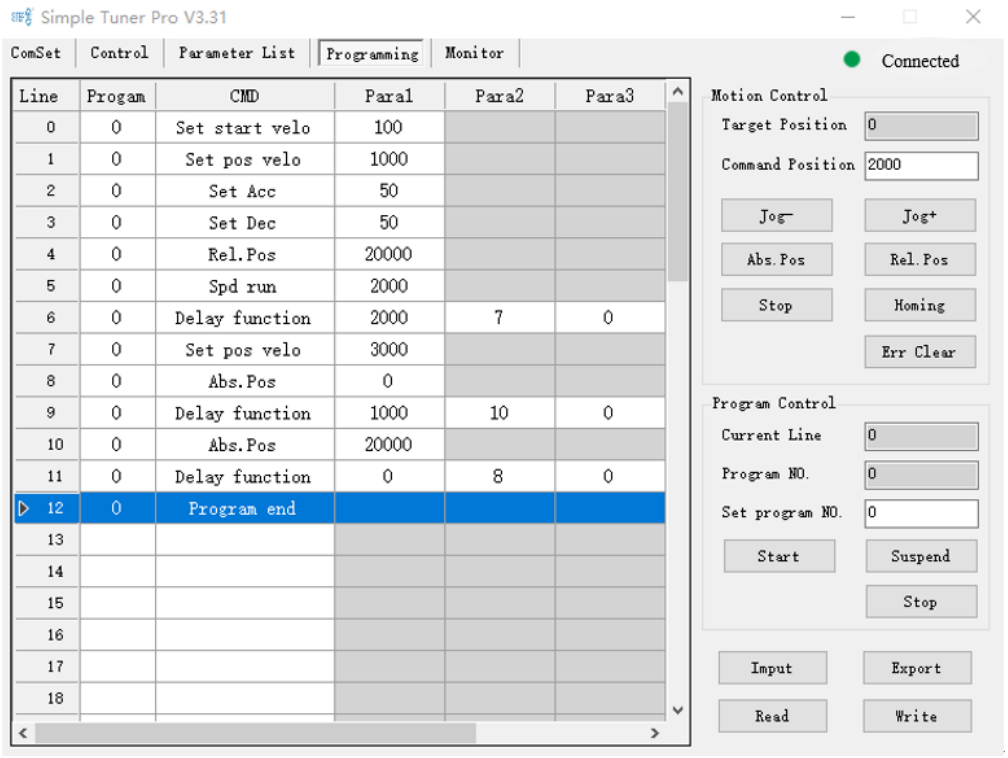
Multi-segment position mode is a way to combine multiple position segments in a certain order, trigger motion through an external IO signal, and complete a series of position segment actions. This function can be regarded as a multi-segment combination of position mode, the user can several segments of the description parameters such as deceleration, pulse number, etc. are stored in the EEPROM in advance, need to enable these position segments when only need to provide a trigger signal to complete the work.

4.2 Programming Writing

Multi-segment functions can write multiple paragraphs, each of which can set its own motion, supporting up to 16 paragraphs, each of which must end with a paragraph to trigger properly. Paragraph content can be randomly arranged, first in the command bar drop-down, select the need for instructions, most instructions only parameter one can enter the corresponding parameters, here alone about Delay function and velo mode.

Delay function first is the delay time unit ms, the second is the jump line number, the third fixed input 0 can be, but when using Delay function should be set at least 1ms delay, otherwise it will not be able to use normally.

Spd run runs at the set speed, and the run time can be set by a delay jump at the back, as an example.



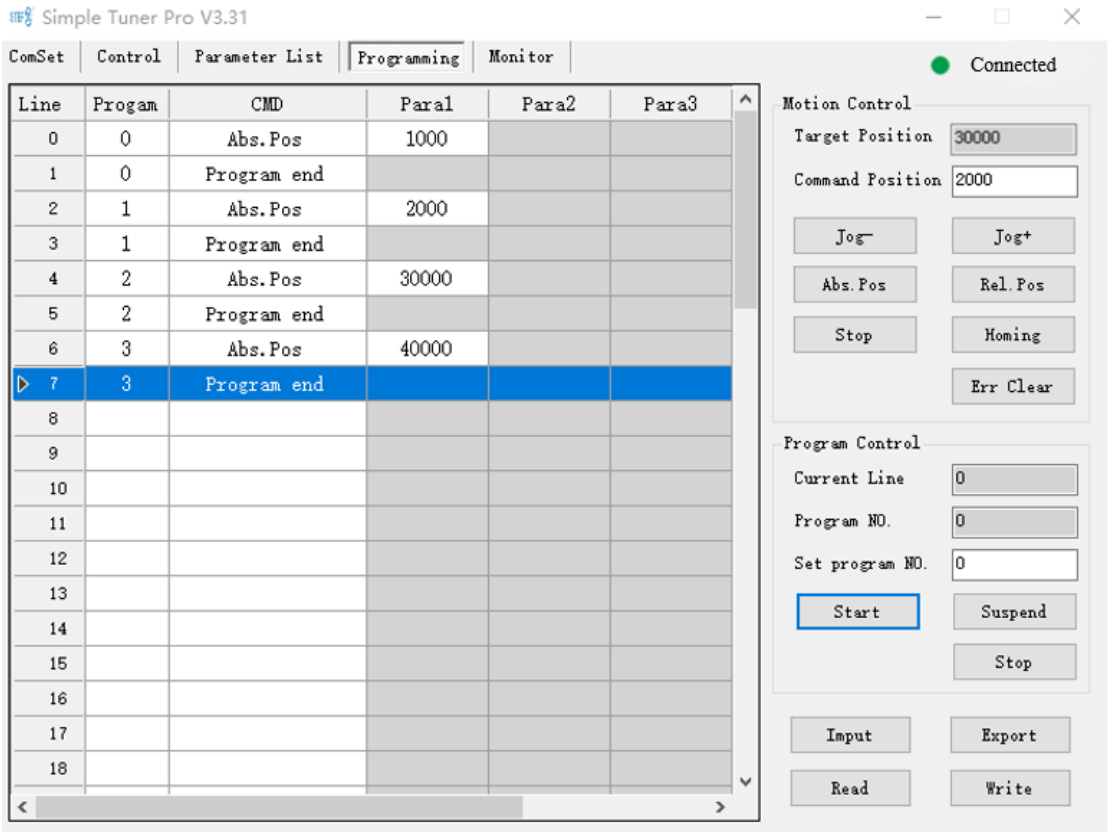
This is a multi-segment, 0-3 line set the running parameters, the fourth line relative movement runs to 20000, then the fifth line starts running at 2rps, the sixth line is set to run 2s, then jumps to the 7th line, and then the 8th line resets Position speed is 3rps, run to 0 at 3rps absolute position, then line 9 delays 1s, jumps to line 10, absolute position runs to 20000, then row 11 delays 1s jumps to line 8, and loops continuously. The end of the paragraph on the twelfth line marked the end of the multi-paragraph.

4.3 Programming Segment Selection

The choice of multi-segment paragraph number is based on multi-segment bit, multi-segment bit needs to be entered through the input port, the multi-segment bit has a total of four digits, the default is all 0, you can set the multi-segment bit at the input port, and then triggered by input, below is the relationship between multi-segment bit and multi-segment selection.

Bit0	Bit1	Bit2	Bit3	Bit4	段数
0	0	0	0	0	0
1	0	0	0	0	1
0	1	0	0	0	2
1	1	0	0	0	3
...	...	...	...		...
1	1	1	1	1	31

For example, when bit1 is at high level, the number of segments is selected as 2, and when starting multiple segments is enabled, a multi-segment with segment number 2 runs



Clicking to Start will start the Progam 2 to run to 30000 in Target Position.