



XB6-P04A

Pulse output module

User Manual



Nanjing Solidot Electronic Technology Co., Ltd.

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1 Product Overview

1.1 Products

XB6-P04A is a plug-in pulse output module, using X-bus bottom bus, adapted to our XB6 series coupler module, which can be connected to external stepper/servo motor driver, and drive stepper/servo motors by means of pulse output. The module has four pulse output channels, each channel contains two pulse output ports. Each pulse output channel is equipped with 4 input channels, so there are a total of 16 input channels, the combination of input and output can meet most of the stepper/servo motor drive scenarios.

1.2 Product Characteristics

- Four-channel pulse output
Single pulse (pulse + direction) and double pulse (CW/CCW) modes can be set.
- One output with four inputs
Each channel output is equipped with local positive limit, negative limit, home, and brake signal inputs.
- Enriched pulse function
It supports a series of functions such as trapezoidal acceleration and deceleration, return to zero, and braking.
- Supports three motion modes
Absolute position mode, relative position mode, velocity mode.
- Supports multiple return-to-zero methods
Four return-to-zero modes can be selected, and return-to-zero speed and return-to-zero approach speed support configuration.
- Support for the merger of campaigns
Dynamically adjustable speed, position, operating mode, acceleration and deceleration times.
- Channel Configuration
The four channels support individual configuration of parameters.
- Small size and easy to install

Compact structure, small space occupation, DIN 35 mm standard rail mounting, the use of pop-up terminals, wiring is convenient and quick.

- easy diagnosis

Innovative channel indicator design, close to the channel, at a glance, easy to detect and maintain.

- easy configuration

Simple configuration, supports mainstream PROFINET masters, EtherCAT masters and CC-Link IE Field Basic masters.

2 Product Parameters

2.1 Common parameter

Interface parameter		
Product Model	XB6-P04A	
Bus protocol	X-bus	
Process data volume: downstream	52 Bytes	
Process data volume: uplink	48 Bytes	
Channel Type	Input: 16 Ch, PNP/NPN	Output: 4 Ch, NPN
Refresh rate	1 ms	

Technical Parameters	
System Input Power	5 VDC
Input Channel Voltage	24VDC (15V~30V)
Pulse output voltage	Determined by input voltage
Output channel	4 channels
Pulse output frequency	200kHz
Pulse Mode	Single pulse (pulse + direction), double pulse (CW/CCW)
Pulse output type	NPN
Input channel	16 channels
Input Channel Function	Positive limit, negative limit, home switch, brake
Input Type	PNP/NPN
Input signal logic selection	Separate normally open/closed configurations for limits, home and brake
Sports	Absolute position mode, incremental position mode, velocity mode
Trapezoidal acceleration and deceleration	Support
Campaign merger	Support
Channel Level Parameter Configuration	Support
Zero Return Mode	Supports 4 types
Brake (when driving)	Support
Overall dimensions	106×73×25.7mm
Weights	100g
Wiring Method	Screwless Quick Plugs
Installation	DIN 35 mm standard rail mounting
Operating temperature	-10°C~+60°C
Storage temperature	-20°C~+75°C
Relative humidity	95%, non-condensing
Protection class	IP20

3 Panel

3.1 Module structure

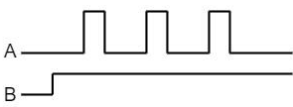
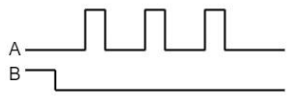
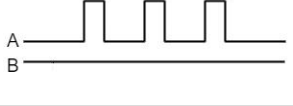

Name of each part of the product



3.2 Indicator light function

Name (of a thing)	Markings	Color	State of affairs	State Description
Power indicator	P	Green	ON	Power supply normal
			OFF	The product is not powered up or the power supply is abnormal
Communication Indicator Light	R	Green	ON	The system is functioning normally
			Flashing 1Hz	Module connected, X-bus system ready for interaction
			OFF	Device is not powered up, X-bus is not interacting with data or is abnormal

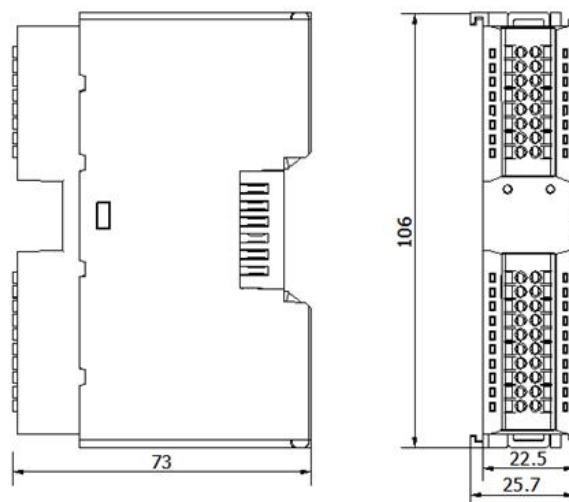
Name (of a thing)	Markings	Color	Input Signal Logic	State of affairs	State Description
Input Channel Indicator	0~F	Green	Normally open	ON	Channels have signal inputs
				OFF	No signal input for channel
			Normally closed	ON	No signal input for channel
				OFF	Channels have signal inputs

Name (of a thing)	Color	Pulse output mode	Running direction	Forward/reverse pulse waveform	Lamp A (C1A~C4A)	B Lamp (C1B~C4B)
Output Channel Indicator	Green	Pulse + Direction	forward motion (mechanics)		ON	ON
			invert (upside-down, inside-out, back-to-front, white to black etc)		ON	OFF
		CW/CCW	forward motion (mechanics)		ON	OFF
			invert (upside-down, inside-out, back-to-front, white to black etc)		OFF	ON

4 Installation and disassembly

4.1 Overall dimensions

Outline specifications (in mm)



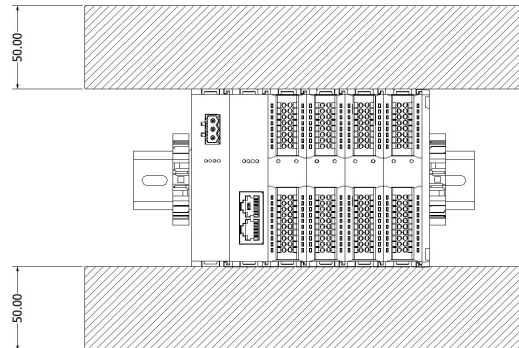
4.2 Installation Guide

Precautions for installation\dismantling

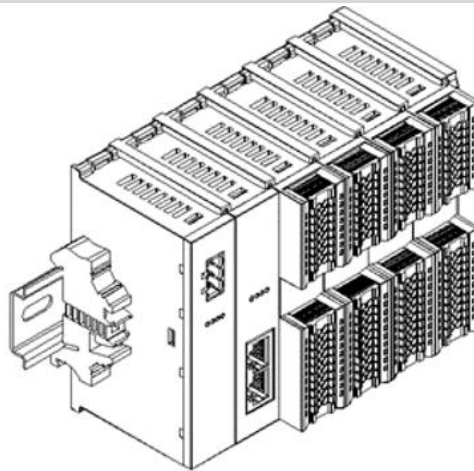
- Ensure that the cabinet is well ventilated (e.g., the cabinet is fitted with an exhaust fan).
- Do not install this equipment next to or above equipment that may cause overheating.
- Be sure to install the module vertically and maintain air circulation around it (at least 50 mm air circulation space above and below the module).
- Once the module is installed, be sure to secure the module by installing rail mounts on both ends.

- Be sure to disconnect the power supply when installing/disassembling.

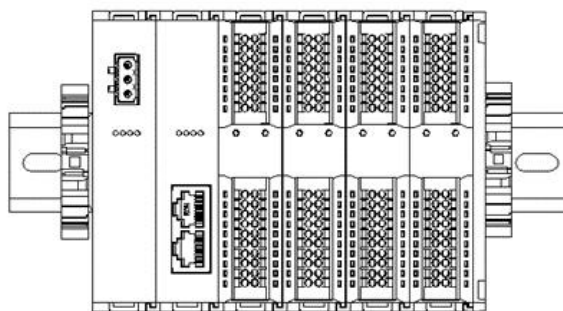
Minimum clearance for module mounting ($\geq 50\text{mm}$)



Ensure that the module is mounted vertically



Be sure to install the rail mounts



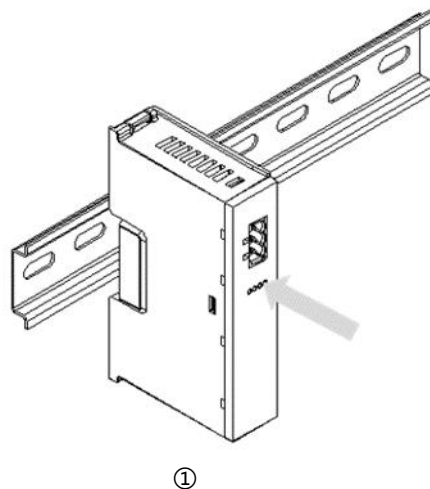
4.3 Installation and disassembly steps

Module Installation and Removal	
Module Installation Steps	1. Install the power supply module first on the rail that has been fixed.
	2. Install the coupler and the required I/O modules in turn to the right of the power supply module.
	3. After installing all required I/O modules, install the end caps to complete the module assembly.
	4. Install the rail fixings on both ends of the power module and end cap to fix the module.
Module disassembly procedure	1. Loosen the rail fixings at both ends of the module.
	2. Use a one screwdriver to pry off the module snap.
	3. Pull out the disassembled module.

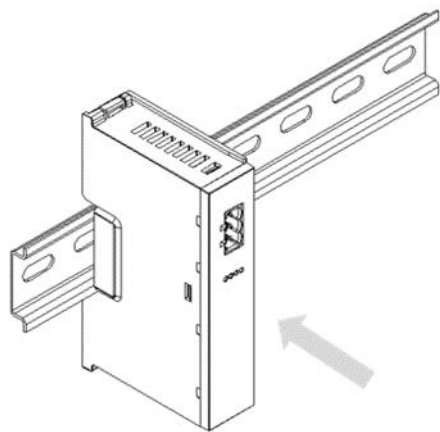
4.4 Installation Diagram

Power Module Installation

move



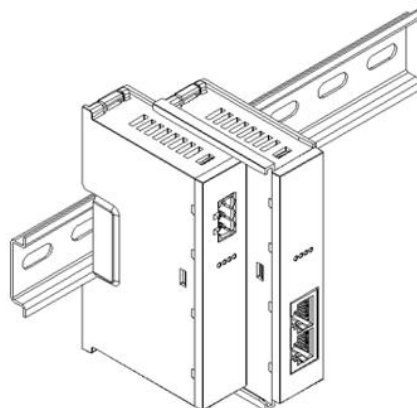
Align the power module rail slots, as shown in Figure ① on the left, vertically to the rails.



As shown in Figure ② on the left, press the power module firmly, and the module will be installed in place when you hear the "click" sound.

Coupler Module Installation

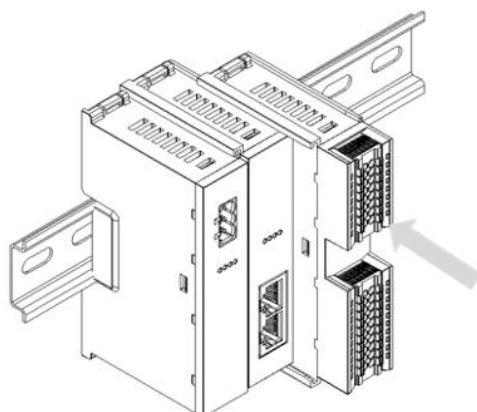
move



Align the left slot of the coupler module with the right side of the power supply module and push it in as shown in figure ③ on the left. Press the coupler module firmly and the module will click into place.

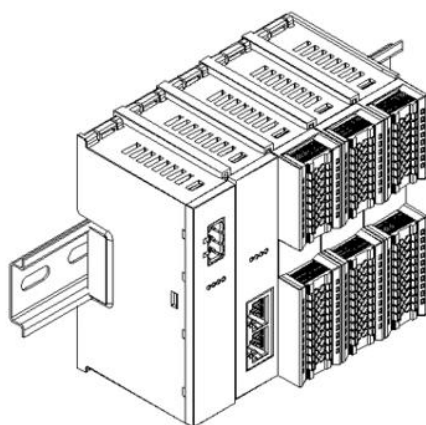
I/O Module Installation

move



④

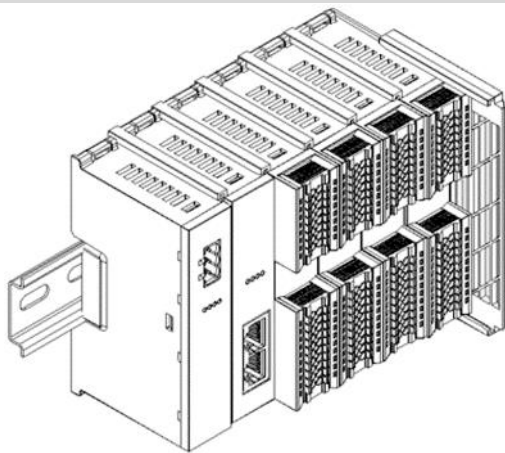
Install the required I/O modules one by one as shown in Figures ④ and ⑤ on the left, following the procedure of installing the coupler module in the previous step.



⑤

End cap retrofit

move

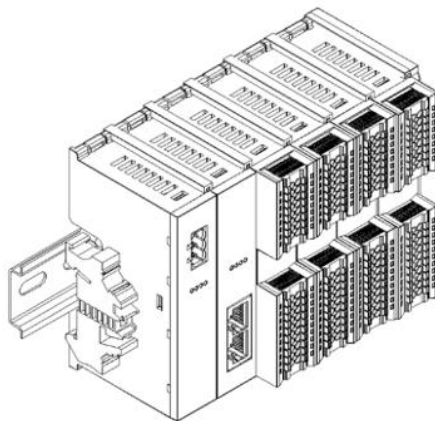


⑥

Install the end cap on the right side of the last module as shown in Fig. 6 on the left, and refer to the installation method of the coupler module.

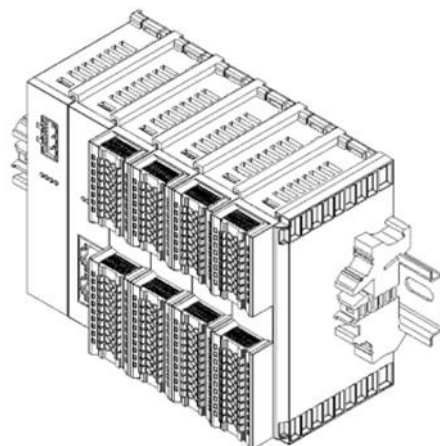
Retrofitting of guide rail fixings

move



⑦

Install and lock the rail retainer firmly against the left side face of the coupler, as shown in Figure 7 at left.

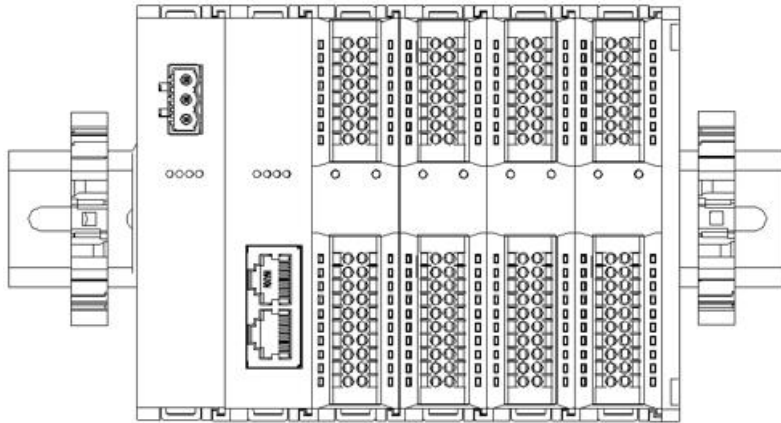


⑧

Install the rail fixture on the right side of the end cap, first push the rail fixture firmly in the direction of the coupler to ensure that the module is mounted tightly, and use a screwdriver to lock the rail fixture as shown in Figure ⑧ on the left.

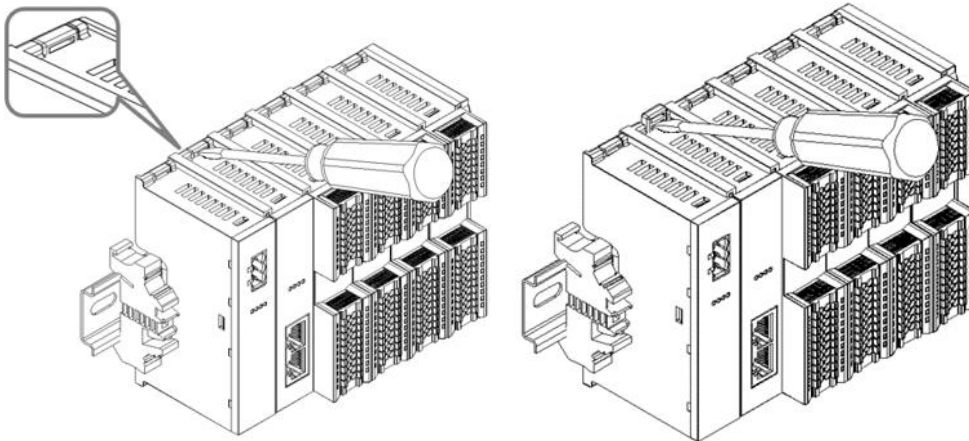
Dismantle

move



Loosen the rail retainer at one end of the module with a screwdriver and move it to one side, making sure there is clearance between the module and the rail retainer, as shown in Figure 9 on the left.

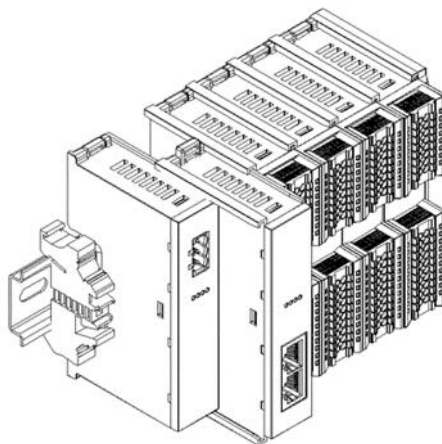
⑨



Insert a flat head start into the snap of the module to be removed, and apply force (hear the rattle) in the direction of the module sideways, as shown in Figures ⑩ and ⑪ on the left.

Note: Each module has a snap at the top and bottom, all operate in this way.

⑪ ⑩

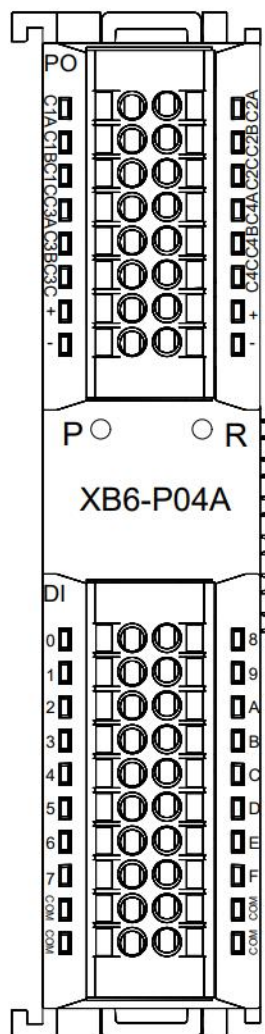
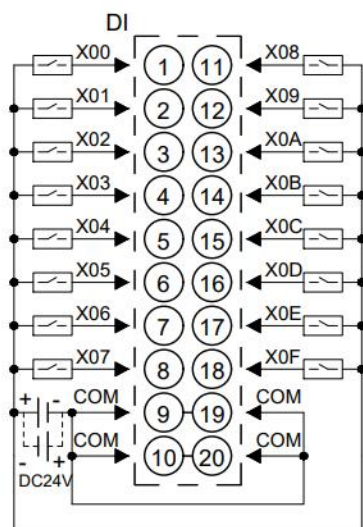
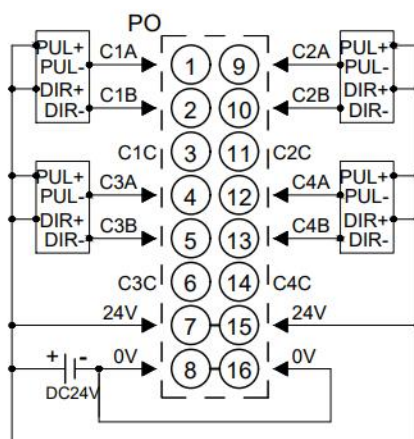


Remove the module as shown in Figure ⑫ on the left, following the opposite operation of installing the module.

⑫

5 Wiring

5.1 Wiring Diagram



*PO侧的24V内部导通; 0V内部导通
 *COM为DI侧公共端, 内部导通, NPN/PNP兼容
 *PUL+与DIR+必须为同一电源+

5.2 Terminal Block Definition

DO					
Terminal Serial Number	Terminal identification	Clarification	Terminal Serial Number	Terminal identification	Clarification
1	C1A	CH1 output A	9	C2A	CH2 output A
2	C1B	CH1 output B	10	C2B	CH2 output B
3	C1C	CH1 digital output C (reserved)	11	C2C	CH2 digital output C (reserved)
4	C3A	CH3 output A	12	C4A	CH4 output A
5	C3B	CH3 output B	13	C4B	CH4 output B
6	C3C	CH3 digital output C (reserved)	14	C4C	CH4 digital output C (reserved)
7	+	Power+	15	+	Power+
8	-	Power supply -	16	-	Power supply -
DI					
Terminal Serial Number	Terminal identification	Clarification	Terminal Serial Number	Terminal identification	Clarification
1	0	CH1 input positive limit	11	8	CH2 input positive limit
2	1	CH1 input negative limit	12	9	CH2 input negative limit
3	2	CH1 input home signal	13	A	CH2 input home signal
4	3	CH1 input brake	14	B	CH2 input brake
5	4	CH3 input positive limit	15	C	CH4 input positive limit
6	5	CH3 input negative limit	16	D	CH4 input negative limit
7	6	CH3 input home signal	17	E	CH4 input home signal
8	7	CH3 Input Brake	18	F	CH4 Input Brake
9	COM	Input Common	19	COM	Input Common
10	COM	Input Common	20	COM	Input Common

6 Use

6.1 Configuration Parameter Definitions

Module configuration has a total of 26 parameters, there are two configuration parameters common to four channels (common parameters have been marked green in the table below), there are six configuration parameters are the same and can be set independently, channel 1 as an example to introduce the configuration parameters, as shown in the table below. **Note: After the configuration information is modified, it will take effect only when the channel is stationary.**

Functionality	Parameter name	Range of values	Default value
Pulse output mode	Pulse Mode	0: Pulse+Direction Pul+Dir 1: Double pulse CW/CCW	0
Braking time	Brake time	20~5000ms	200
Start-up speed	CH1 Startup Speed	0~200kHz	1
Zero Return Mode	CH1 Homing Mode	0: mode 19 1: mode 21 2: mode 24 3: mode 28	2
Return to zero speed	CH1 Homing Speed	1~200kHz	1000
Approach speed to zero	CH1 Homing Approach Speed	1~200kHz	500
Input signal logic selection	CH1 Input Logic	0: Limit normally open, home brake normally open 1: Limit normally open, home brake normally closed 2: Limit normally closed, home brake normally open 3: Limit normally closed,	0

		home brake normally closed	
scale	CH1 Scaling	1~60000	1

6.1.1 Pulse Mode Configuration

The XB6-P04A supports two pulse output modes Pulse Mode: 0: pulse + direction, 1: double pulse (CW/CCW). The four output channels share this configuration parameter and do not support individual configuration.

6.1.2 Brake Time Configuration

Once the brake command is triggered, the device will enter the braking phase and will brake within the set time regardless of the speed. Currently the brake time is 200ms by default, the four output channels share this configuration parameter and do not support individual configuration.

6.1.3 Start-up speed

A total of four parameters are needed to determine a trapezoidal acceleration/deceleration curve: acceleration time, deceleration time, start speed, and run speed. Among them, the running speed, acceleration time and deceleration time are modified more frequently, so they are placed in the downstream command. The startup speed is placed in the configuration parameters, and the four channels can be set individually.

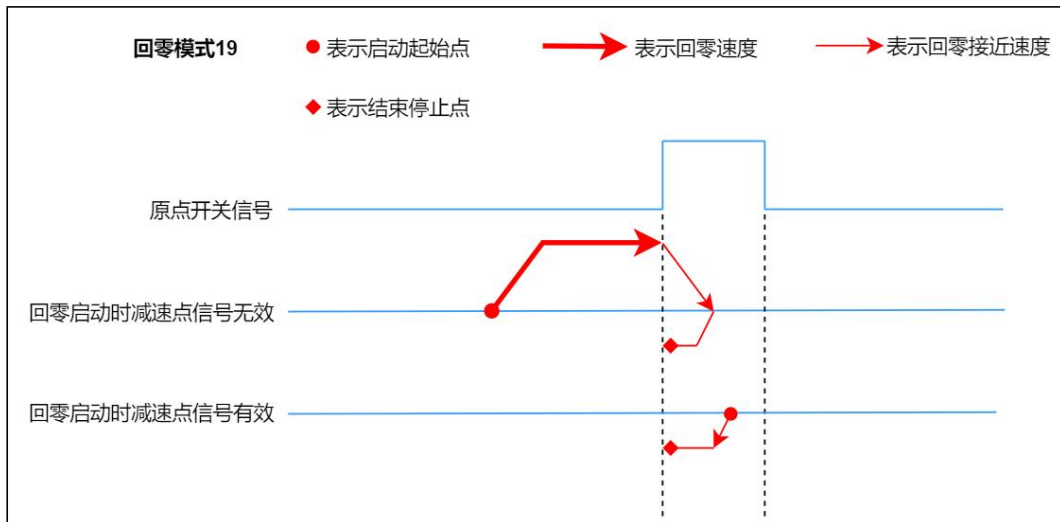
In practice, the trajectories in absolute/relative position mode, velocity mode, and return-to-zero mode all follow this set of trapezoidal acceleration and deceleration parameters.

6.1.4 Return to zero parameter

Zeroing, i.e., finding the home signal through a combination of positive limit, negative limit, and home signal. There are three configuration parameters related to zero return: zero return mode, zero return speed, and zero approach speed. There are four zero return modes to choose from: Zero return mode 19, 21, 24, 28, and these three parameters can be set individually for each of the four channels. After successfully returning to zero, a coordinate clearing command will be executed automatically.

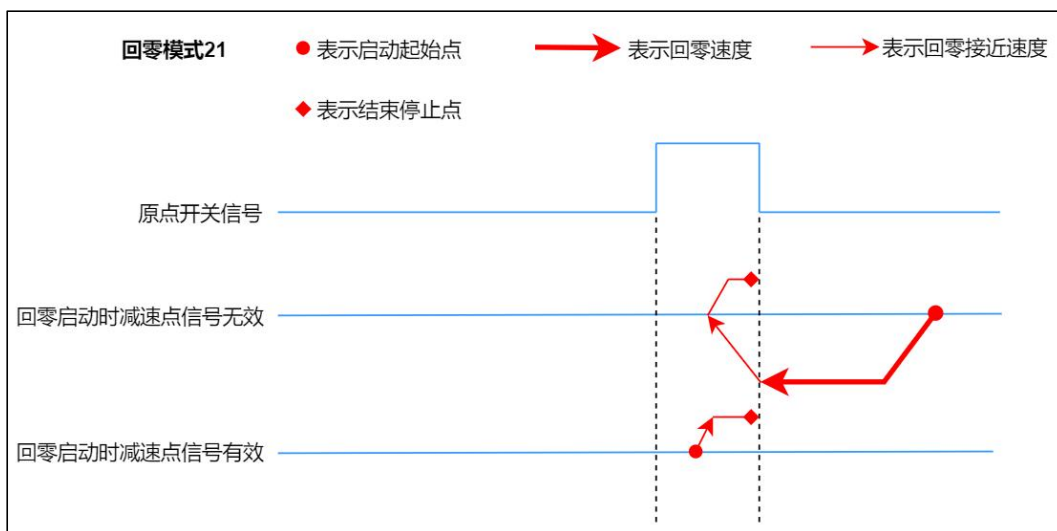
◆ **Back to zero mode 19:**

- ① When there is no home signal input:
 - a. Moves in the positive direction at the return-to-zero speed and decelerates to 0 when a home signal is input;
 - b. Again move in the negative direction at a speed approaching back to zero until the home signal disappears and the movement stops.
- ② When the origin signal is present:
 - a. Moves in the negative direction at a speed approaching back to zero and stops moving when the home signal disappears.



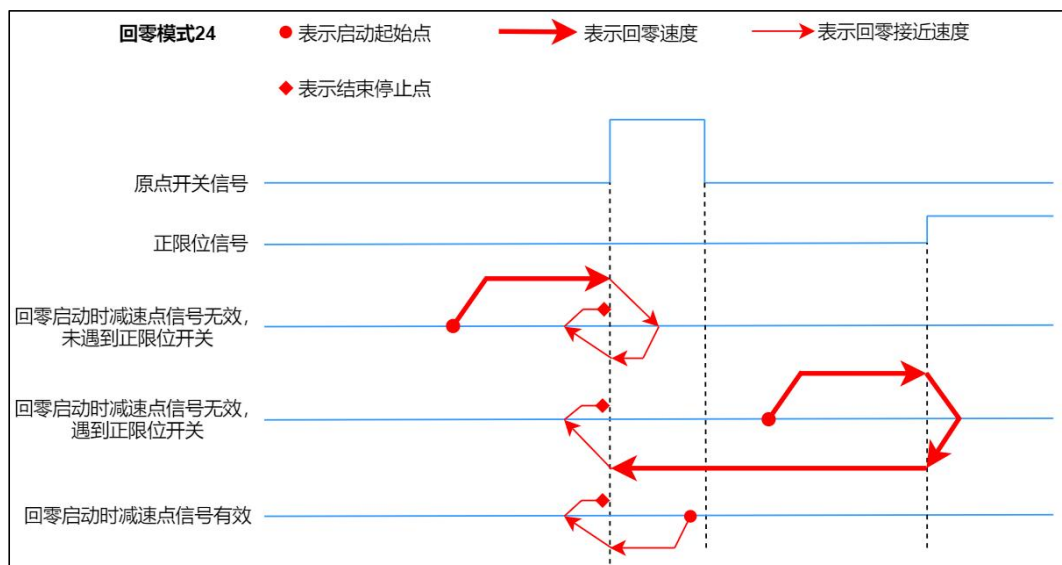
◆ **Back to zero mode 21:**

- ① When there is no home signal input:
 - a. Moves in the negative direction at a speed that returns to zero, and decelerates to zero when a home signal is input;
 - b. Again move in the positive direction with a return to zero approach speed until the home signal disappears and the movement stops.
- ② When the origin signal is present:
 - a. Moves in the positive direction at a speed approaching back to zero, and stops moving when the home signal disappears.



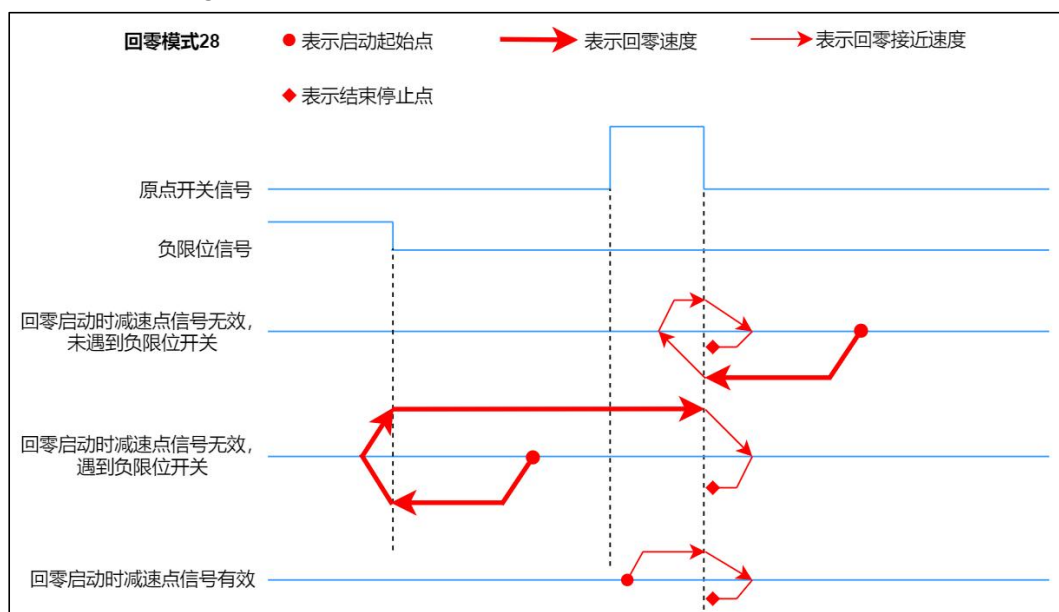
◆ **Back to zero mode 24:**

- ① When there is no home/positive limit signal input:
 - a. Move in the positive direction at a speed back to zero until the home signal input is detected, and then do deceleration until the speed is zero;
 - b. Then move in the negative direction with a speed approaching back to zero until the origin signal disappears, and then do deceleration until the speed is zero;
 - c. Then move in the positive direction with a return-to-zero approach speed until the home signal appears and stops the movement.
- ② When there is no home/positive limit signal input:
 - a. Move in the positive direction at a speed back to zero, and when a positive limit signal is input, make a braking movement until the speed is zero;
 - b. Then move in the negative direction at a speed back to zero, and when exiting the home signal, do a deceleration until the speed is zero;
 - c. Then move in the positive direction with a return-to-zero approach speed until the home signal appears and stops the movement.
- ③ When the origin signal is present:
 - a. Move in the negative direction at a speed approaching back to zero, and when exiting the home signal, do a deceleration until the speed is zero;
 - b. Then move in the positive direction with a return-to-zero approach speed until the home signal appears and stops the movement.



◆ **Back to zero mode 28:**

- ① When there is no home/negative limit signal input:
 - a. Move in the negative direction at a speed back to zero until the home signal input is detected, and then do deceleration until the speed is zero;
 - b. Then move in the positive direction at a speed close to zero until the origin signal disappears, and then do deceleration until the speed is zero;
 - c. It then moves in the negative direction at a speed approaching back to zero until the home signal appears and stops the movement.
- ② When there is no home/negative limit signal input:
 - a. Move in the negative direction at a speed back to zero, and when a negative limit signal is input, make a braking movement until the speed is zero;
 - b. Then move in the positive direction at a speed back to zero, and when exiting the home signal, do a deceleration until the speed is zero;
 - c. It then moves in the negative direction at a speed approaching back to zero until the home signal appears and stops the movement.
- ③ When the origin signal is present:
 - a. Move in the positive direction at a speed approaching back to zero, and when exiting the home signal, do a deceleration until the speed is zero;
 - b. It then moves in the negative direction at a speed approaching back to zero until the home signal appears and stops the movement.



6.1.5 Input Signal Logic

The input signal Input Logic is configurable:

- 0: Limit normally open, home brake normally open;
- 1: Limit normally open, home brake normally closed;
- 2: Limit normally closed, home brake normally open;
- 3: Limit normally closed, home brake normally closed;

The input signal logic can be set individually for the four channels, where positive and negative limits can only be set uniformly, and home and brake can only be set uniformly.

6.1.6 Scale

Set the unit of speed and position according to the demand. For example, if 1000 pulses are 1 lap, you can set Scaling to 1000, then the running speed, running steps, startup speed, return to zero speed, and return to zero approach speed will all be multiplied by 1000, which can be understood as the number of steps and speed parameters issued at this time, and the unit will be changed to lap.

6.2 Process data

6.2.1 Uplink data

48 bytes of uplink data (12 bytes per channel, channel [n] takes values 1 to 4)				
Name (of a thing)	Meaning	Range of values	Data type	Lengths
Ch[n] Pulse Output Direction	Actual pulse output direction	0: positive rotation	bool	1 bit0
		1: Inversion		
Ch[n] Pulse Status Flag 1	Pulse Status Flag	00: No pulse output	bool	2 bits bit1~bit2
Ch[n] Pulse Status Flag 2		01: Accelerating	bool	
		10: Decelerating		
		11: in even speed		
Ch[n] Homing Mode Running	Back to zero in operation	1: In the return-to-zero state	bool	1 bit3
		0: Not in zero return state		
Ch[n] Position Mode Running	Position mode in operation	1: In position mode state	bool	1 bit4
		0: Not in position mode state		
Ch[n] Velocity Mode Running	Speed mode in operation	1: In speed mode	bool	1 bit5
		0: Not in speed mode state		
Ch[n] Homed	Return to zero complete.	1: Zero return complete	bool	1 bit6
		0: Return to zero incomplete		
Ch[n] Location Arrival	Location Arrival	1: Location arrival	bool	1 bit7
		0: Position not reached		
Ch[n] Velocity Arrival	Speed	1: Speed of arrival	bool	1 bit8
		0: Speed not reached		
Ch[n] Positive Limit Signal	Positive limit signal input	1: With signal input	bool	1 bit9
		0: No signal input		
Ch[n] Negative Limit Signal	Negative limit signal input	1: With signal input	bool	1 bit10
		0: No signal input		
Ch[n] Home Signal	Home signal input	1: With signal input	bool	1 bit11
		0: No signal input		
Ch[n] Brake Signal	Brake signal input	1: With signal input	bool	1 bit12
		0: No signal input		
Ch[n] Reserved	Reserve	reserve	bool	1 bit bit13~bit15
Ch[n] Error Code	Alarm code	0x0001: Startup speed > Running	unsigned16	2 bytes

		<p>speed</p> <p>0x0002: Startup speed > Back to zero speed</p> <p>0x0004: Startup speed > Back to zero approach speed</p> <p>0x0008: Zero Approach Speed > Zero Return Speed</p> <p>0x0010: Running speed out of bounds (Speed x Scaling > 200000)</p> <p>0x0020: Running steps out of bounds (Position x Scaling > 2³²)</p> <p>0x0040: Startup speed out of bounds (Speed x Scaling > 200000)</p> <p>0x0080: Back to zero speed crossing (Speed x Scaling > 200000)</p> <p>0x0100: Back to zero approaching velocity crossing (Velocity x Scaling > 200000)</p> <p>0x0200: Acceleration time out of bounds (20~5000ms)</p> <p>0x0400: Deceleration time out of bounds (20~5000ms)</p> <p>0x1000: Positive Limit Trigger, do not allow to continue to move in the positive direction</p> <p>0x2000: Negative limit triggered, no further movement in negative direction allowed</p>		
Ch[n] Current Location	current position	-2,147,483,648 ~ 2,147,483,647	signed32	4 bytes
Ch[n] Current Velocity	current velocity	0~200kHz	signed32	4 bytes

Data Description:

◆ Pulse Output Direction

The pulse output direction flag bit reflects the actual direction of motion in different modes.

◆ Pulse Status Flag

The status flag bit indicates the current state of the pulse output. Note that normal deceleration and braking will cause the state to switch to deceleration in progress. You can determine whether the current state is deceleration or braking by using the positive and negative limits and whether there is a signal input for braking.

◆ **Back to Zero Homing Mode Running**

Indicates whether the channel device is currently in return-to-zero mode.

◆ **Position Mode Running**

Indicates whether the current channel device is in position mode operation.

◆ **Velocity Mode Running**

Indicates if the current channel device is running in speed mode

◆ **Back to zero. Homed.**

When the module initiates the return-to-zero command and finds the home position successfully, this bit is set to 1. When the channel initiates motion again, this bit is reset to 0. It should be noted that if the return-to-zero command fails for any reason, this bit will not be set to 1.

◆ **Location Arrival**

When the module is running in position mode and has run to the target position, this bit is set to 1. When the channel initiates motion again, it will re-set the bit to 0.

◆ **Velocity Arrival**

When the module is running in speed mode and the running speed has reached the set value, this bit is set to 1. When the channel starts the motion again, it will re-set this bit to 0.

◆ **Positive Limit, Negative Limit, Origin, and Brake Signal Inputs Positive Limit Signal, Negative Limit Signal, Origin Signal, and Brake Signal**

The four signals correspond to the four input channels, indicating the presence or absence of the four input signals of the corresponding channels.

◆ **Error Code**

Once a channel generates an alarm message, the motion associated with the alarm message cannot be initiated, while the motion not associated with the alarm message can still be initiated normally. Example 1: When the start speed > operation speed of channel 1, the channel generates an alarm message, the 1st bit of the alarm message is 1 (2#0001 is converted to decimal as 10#1), and the Online value of the Error Code is 1, then channel 1 can not start the operation of the speed/position mode, but it can be started back to zero normally.

Example 2: Channel 1 bit 1 alarm message is not triggered, bit 4 return to zero approach speed > return to zero speed generates an alarm message, the alarm code is 8 (2#1000 converted to decimal is 10#8), the Online value of Error Code is 8, then channel 1 can not start the return to zero, but it can start the operation of speed/position mode normally.

◆ **Current Location**

The current position indicates the number of offset pulses relative to zero, i.e. the commanded position (coordinate). If the downward coordinate is cleared to zero when there are no pulses output from the channel, then this value is set directly to zero.

◆ **Current Velocity**

The actual running speed of the current channel.

6.2.2 Downlink data

52 bytes of downstream instructions (13 bytes per channel, channel [n] takes values 1 to 4)				
Name (of a thing)	Meaning	Range of values	Data type	Lengths
Ch[n] Running Direction	Movement direction	0: positive rotation	bool	1 bit0
		1: Inversion		
Ch[n] Absolute/Relative Position Mode	Absolute/relative position mode	0: Absolute position	bool	1 bit1
		1: Relative position		
Ch[n] Position/Velocity Mode	Position/Speed Mode	0: Position mode	bool	1 bit2
		1: Speed Mode		
Ch[n] Reset Coordinates	Zeroing of current coordinates	Edge control: 0->1 clear the current coordinate	bool	1 bit3
Ch[n] Start	priming campaign	Edge control: 0->1 start	bool	1 bit4
Ch[n] Brake	Brake Command	1: Trigger brake command	bool	1 bit5
		0: No brake command		
Ch[n] Home	Start to return to zero	Edge control: 0->1 start	bool	1 bit6
Ch[n] Reserved	reserve	reserve	bool	1 bit7
Ch[n] Acceleration Time	Acceleration Time Configuration	20~5000ms	unsigned16	2 bytes
Ch[n] Deceleration Time	Deceleration time configuration	20~5000ms	unsigned16	2 bytes
Ch[n] Running Velocity	Running Speed Configuration	0~200kHz	unsigned32	4 bytes
Ch[n] Running Position	Configuration of the number of running steps	$-2^{31} \sim 2^{31}-1$	signed32	4 bytes

Data Description:◆ **Running Direction**

Motion direction is actually only valid in velocity mode. Because the relative position mode can directly judge the positive and negative of the steps to set the direction, and the absolute position mode can directly judge the size relationship between the current coordinate and the target

coordinate to judge the running direction, so only the speed mode needs to rely on this parameter to decide the running direction.

◆ **Absolute/Relative Position Mode, Position/Velocity Mode**

Together, these three parameters determine how the movement will take place. Relative position mode and absolute position mode need to be established with the position mode selected. If the current setting is velocity mode, then this parameter is meaningless.

Absolute Position Mode: The number of running steps indicates running from the current coordinates to the set coordinate position.

For example, if the current position is 600 steps and the number of running steps is 800, it means running to the position of 800 steps, i.e. running 200 steps in the positive direction.

In this mode, it is allowed to modify the speed and position in real time, and it is allowed to switch to the speed mode directly. It should be noted that it is not allowed to set the speed to 0 in this mode. For example, if the current position is 10000 steps, the first startup is in absolute position mode, and the target position is 20000 steps, and the 20000 steps are modified to 50000 steps during the running process, then it will run directly to the position of 50000 steps.

Relative Position Mode: The number of running steps indicates how many steps are run directly. For example, a run step of -500 indicates a run of 500 steps directly in the opposite direction.

In this mode, it is allowed to modify the speed and position in real time, and it is allowed to switch to speed mode directly. It should be noted that it is not allowed to set the speed to 0 in this mode.

For example, if the current position is 10000 steps, the first startup is in relative position mode, and the target position is 20000 steps, and the 20000 steps are modified to 50000 steps during the running process, then it will directly run to the position of 60000 steps.

Speed Mode: The channel will accelerate to the running speed according to the set acceleration curve and run continuously, changing the running speed parameter in this mode is effective immediately. If the speed is set to 0 in the speed mode, the channel will follow the set deceleration time to do deceleration until the speed is reduced to 0 and then turn off this speed mode, in this mode, it allows real-time modification of the speed and the running direction, and it allows to switch to the position mode directly.

Note: In speed mode and position mode, after triggering the limit, it is not allowed to continue the movement in the same direction. The limit is lifted after initiating one movement in the reverse direction.

◆ **Current Coordinates Zero Reset Coordinates**

Zeroing the current coordinates, edge control 0->1 takes effect. This command only takes effect if the channel is configured when it is stationary.

◆ **Start CampaignStart**

Edge control, when the channel is at rest, detect this parameter from 0 to 1 that is to open a movement.

◆ **Brake command Brake**

The brake command has the highest priority in the entire system, is immediately effective at any moment, and is level controlled. Therefore, as long as the brake instruction is 1, not only must the current motion be turned off immediately, but also the next motion is not allowed to be turned on. In other words, if you want the device to move, the brake instruction must be 0.

◆ **Starting to return to zero.**

Edge control, when the channel is in the stop state, this parameter is detected to change from 0 to 1 that is to turn on the channel back to zero. The channel zeroing mode and the corresponding speed follow [6.1.4 Zeroing Parameters](#) The channel zeroing mode and corresponding speed follow the configuration in 6.1.4 Zeroing Parameters.

◆ **Acceleration Time, Deceleration Time, Running Velocity, Running Position**

The acceleration time, deceleration time, running speed, and number of running steps in this parameter together determine the trapezoidal acceleration/deceleration curve.

6.3 Use Cases

- ◆ **Channel 1 runs 50,000 pulses in the forward direction at 100 kHz**
 - a. On-demand configuration of configuration parameters;
 - b. Set channel 1 to relative position mode
 - a) Ch1 Position/Velocity Mode is set to 0;
 - b) Ch1 Absolute/Relative Position Mode is set to 1;
 - c. Configure channel 1 to run at 50,000 steps and 100 kHz;
 - a) Ch1 Running Velocity is set to 100000;
 - b) Ch1 Running Position is set to 50000;
 - d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
 - e. Set the start command of channel 1 from 0 to 1 to start the movement.
 - a) Ch1 Start is set from 0 to 1.

- ◆ **Channel 1 with a current position of 1000 moves to a position of -20,000 with a running speed of 100 kHz.**
 - a. On-demand configuration of configuration parameters;
 - b. Sets channel 1 to absolute position mode;
 - a) Ch1 Position/Velocity Mode is set to 0;
 - b) Ch1 Absolute/Relative Position Mode is set to 0;
 - c. Configure channel 1 to run at -20000 steps and 100 kHz;
 - a) Ch1 Running Velocity is set to 100000;
 - b) Ch1 Running Position is set to -20000;
 - d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
 - e. Set the start command of channel 1 from 0 to 1 to start the movement.
 - a) Ch1 Start is set from 0 to 1.

- ◆ **Channel 1 turns on speed mode and runs at 100 kHz**
 - a. Configure the configuration parameters;
 - b. Sets channel 1 to speed mode;
 - a) Ch1 Position/Velocity Mode is set to 1;
 - c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 forward;
 - a) Ch1 Running Velocity is set to 100000;
 - b) Ch1 Running Direction is set to 0;
 - d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
 - e. Set the start command of channel 1 from 0 to 1 to start the movement;
 - a) Ch1 Start is set from 0 to 1.

◆ **Channel 1 on zero return**

- a. Configure the configuration parameters, select the return-to-zero mode and set the return-to-zero speed and the return-to-zero approach speed;
- b. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
- c. Set the zero return command for channel 1 from 0 to 1 to start zero return.
 - a) Ch1 Home is set from 0 to 1.

◆ **Channel 1 turns on speed mode, running at 100 kHz, with the speed modified to 10 kHz during operation**

- a. Configure the configuration parameters;
- b. Sets channel 1 to speed mode;
 - a) Ch1 Position/Velocity Mode is set to 1;
- c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 forward;
 - a) Ch1 Running Velocity is set to 100000;
 - b) Ch1 Running Direction is set to 0;
- d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
- e. Set the start command of channel 1 from 0 to 1 to start the movement;
 - a) Ch1 Start is set from 0 to 1.
- f. Modify the running speed of channel 1 to 10kHz during motion;
 - a) Ch1 Running Velocity is set to 10000;
- g. Reset the start command of channel 1 from 0 to 1 to start the motion merge.
 - a) Ch1 Start is set from 0 to 1.

◆ **The current position of channel 1 is 10000, move to the position of 20000, and modify the position to 50000 during the movement.**

- a. On-demand configuration of configuration parameters;
- b. Sets channel 1 to absolute position mode;
 - a) Ch1 Position/Velocity Mode is set to 0;
 - b) Ch1 Absolute/Relative Position Mode is set to 0;
- c. Configure channel 1 to run at 20000 steps and 1 kHz;
 - a) Ch1 Running Velocity is set to 1000;
 - b) Ch1 Running Position is set to 20000;
- d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
 - a) Make sure that Ch1 Brake, Ch1 Pulse Status Flag 1, and Ch1 Pulse Status Flag 2 are equal to 0;
- e. Set the start command of channel 1 from 0 to 1 to start the movement.
 - a) Ch1 Start is set from 0 to 1.
- f. Modify the number of running steps for channel 1 to 50,000 during exercise;
 - a) Ch1 Running Position is set to 50000;
- g. Reset the start command of channel 1 from 0 to 1 to start the motion merge.
 - a) Ch1 Start is set from 0 to 1.

6.4 Module Configuration Description

6.4.1 Application in TwinCAT3 software environment

1、 Preliminary

- **Hardware environment**

- **Module Model XB6-P04A**
- **Power Module, EtherCAT Coupler, End Cap**

This description takes the XB6-P2000H power supply, XB6-EC0002 coupler as an example

- **A computer with pre-installed TwinCAT3 software**
- **Shielded cables for EtherCAT**
- **Motor drives, stepper/servo motors and other equipment**
- **One switching power supply**
- **Module mounting rails and rail mounts**
- **Device Configuration Files**

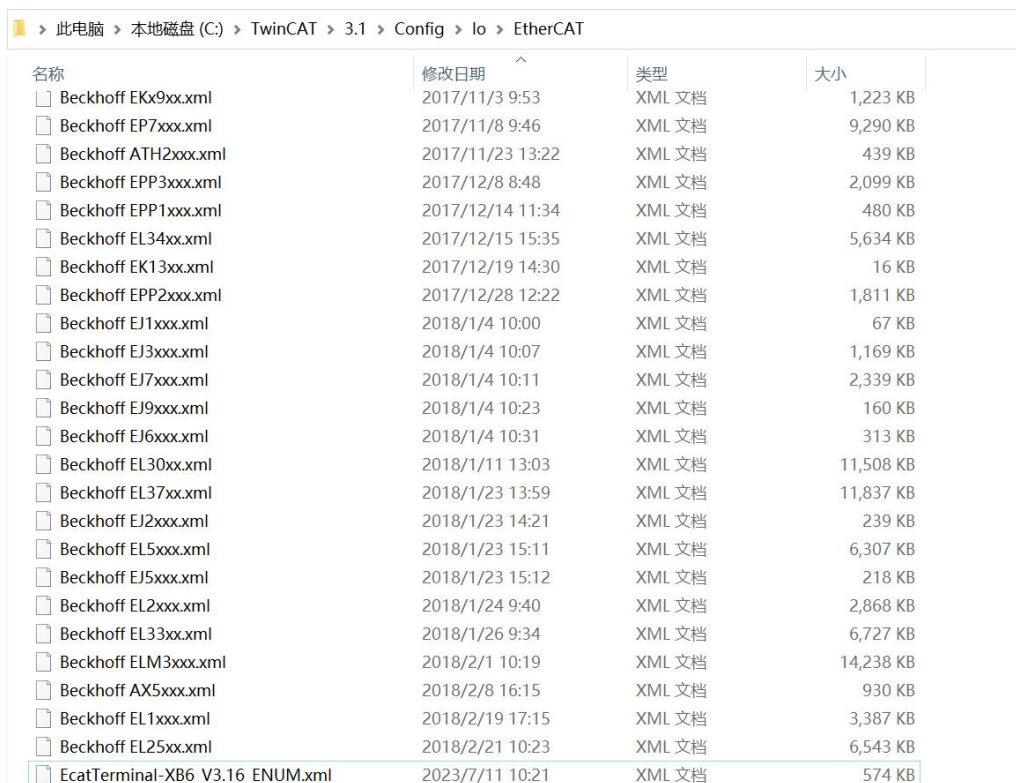
Configuration file to get the address: <https://www.solidotech.com/documents/configfile>

- **Hardware configuration and wiring**

Please follow " [4 Mounting and dismounting](#) "" [5 Wiring](#) "" [5 Wiring](#) "

2、 Preset Profiles

Place the ESI configuration file (EcatTerminal-XB6_V3.16_ENUM.xml) in the TwinCAT installation directory under "C:\TwinCAT\3.1\Config\Io\EtherCAT" as shown

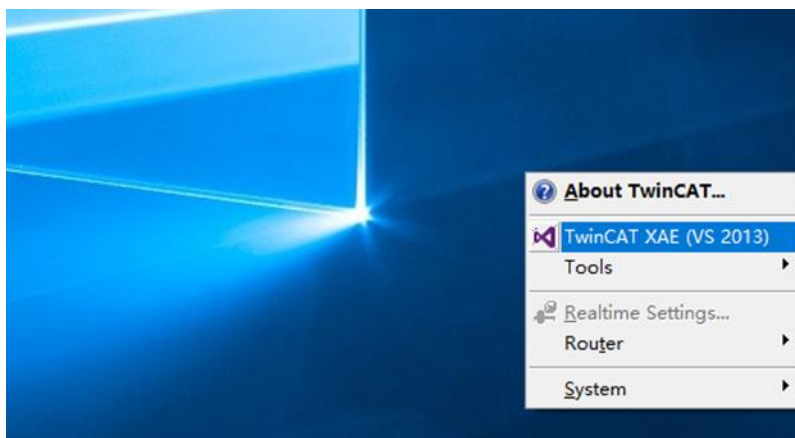


名称	修改日期	类型	大小
Beckhoff EKx9xx.xml	2017/11/3 9:53	XML 文档	1,223 KB
Beckhoff EP7xx.xml	2017/11/8 9:46	XML 文档	9,290 KB
Beckhoff ATH2xxx.xml	2017/11/23 13:22	XML 文档	439 KB
Beckhoff EPP3xxx.xml	2017/12/8 8:48	XML 文档	2,099 KB
Beckhoff EPP1xxx.xml	2017/12/14 11:34	XML 文档	480 KB
Beckhoff EL34xx.xml	2017/12/15 15:35	XML 文档	5,634 KB
Beckhoff EK13xx.xml	2017/12/19 14:30	XML 文档	16 KB
Beckhoff EPP2xxx.xml	2017/12/28 12:22	XML 文档	1,811 KB
Beckhoff EJ1xxx.xml	2018/1/4 10:00	XML 文档	67 KB
Beckhoff EJ3xxx.xml	2018/1/4 10:07	XML 文档	1,169 KB
Beckhoff EJ7xxx.xml	2018/1/4 10:11	XML 文档	2,339 KB
Beckhoff EJ9xxx.xml	2018/1/4 10:23	XML 文档	160 KB
Beckhoff EJ6xxx.xml	2018/1/4 10:31	XML 文档	313 KB
Beckhoff EL30xx.xml	2018/1/11 13:03	XML 文档	11,508 KB
Beckhoff EL37xx.xml	2018/1/23 13:59	XML 文档	11,837 KB
Beckhoff EJ2xxx.xml	2018/1/23 14:21	XML 文档	239 KB
Beckhoff EL5xxx.xml	2018/1/23 15:11	XML 文档	6,307 KB
Beckhoff EJ5xxx.xml	2018/1/23 15:12	XML 文档	218 KB
Beckhoff EL2xxx.xml	2018/1/24 9:40	XML 文档	2,868 KB
Beckhoff EL33xx.xml	2018/1/26 9:34	XML 文档	6,727 KB
Beckhoff ELM3xxx.xml	2018/2/1 10:19	XML 文档	14,238 KB
Beckhoff AX5xxx.xml	2018/2/8 16:15	XML 文档	930 KB
Beckhoff EL1xxx.xml	2018/2/19 17:15	XML 文档	3,387 KB
Beckhoff EL25xx.xml	2018/2/21 10:23	XML 文档	6,543 KB
EcatTerminal-XB6_V3.16_ENUM.xml	2023/7/11 10:21	XML 文档	574 KB

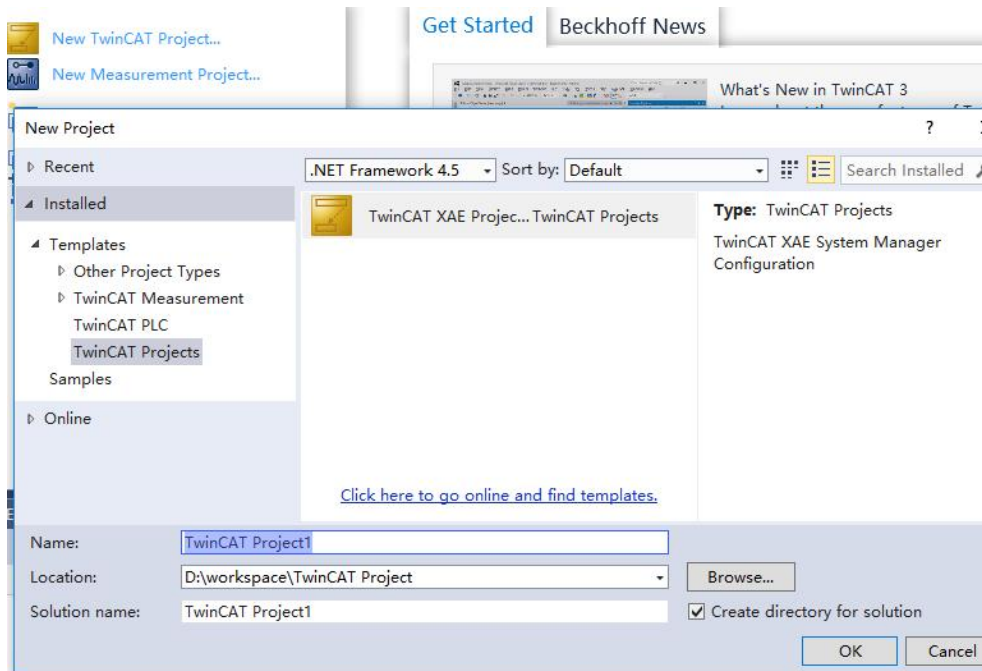
below.

3. Create Project

- Click the TwinCAT icon in the lower right corner of the desktop and select "TwinCAT XAE (VS xxxx)" to open the TwinCAT software, as shown below.

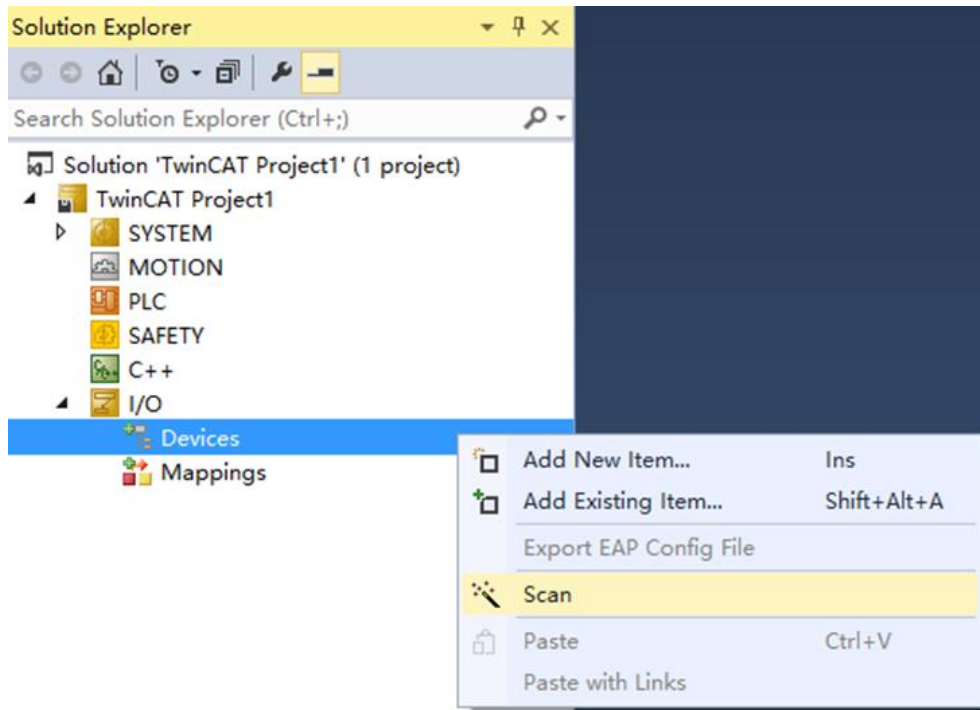


- Click "New TwinCAT Project", in the pop-up window, "Name" and "Solution name" correspond to the project name and solution name respectively. Solution name" in the pop-up window, "Name" and "Solution name" correspond to the project name and solution name respectively, "Location" corresponds to the project path, these three items can be selected by default, click "OK", the project was created successfully, as shown in the following figure.



4. Scanning device

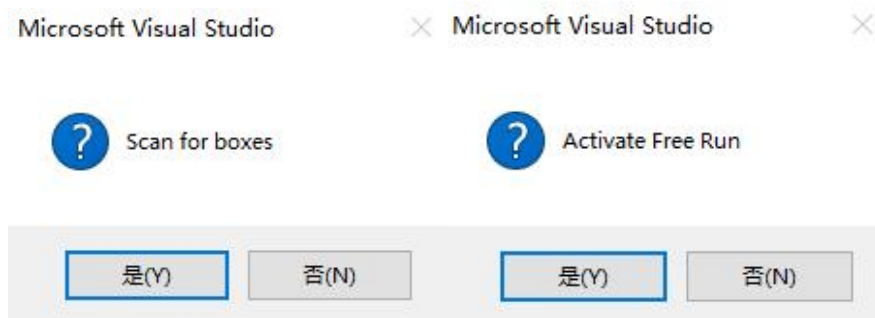
- a. After creating the project, right-click on the "Scan" option under "I/O -> Devices" to perform a slave device scan, as shown in the following figure.



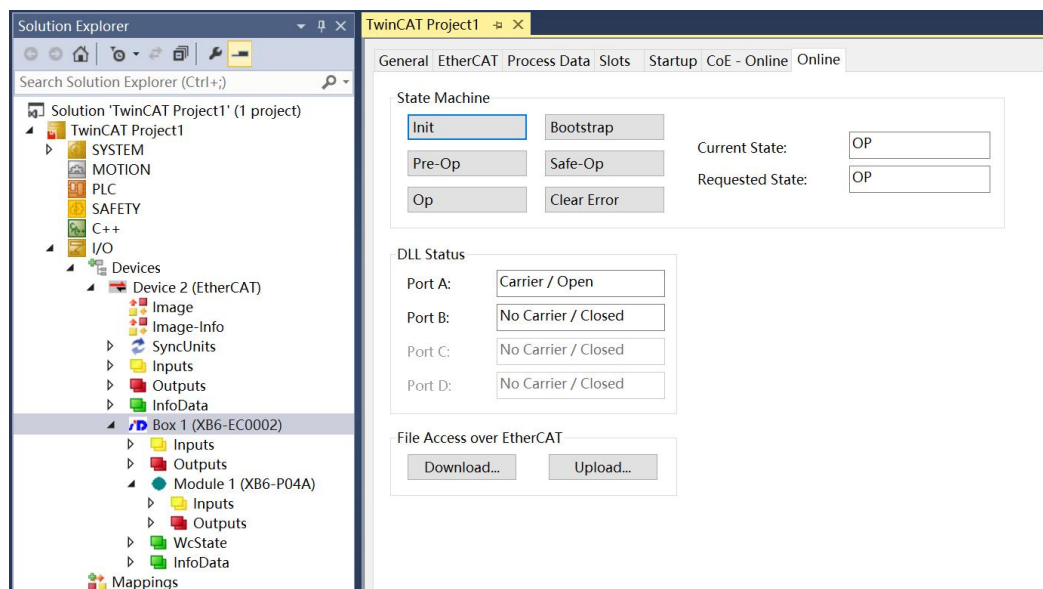
- b. Check the "Local Connection" box, as shown in the following figure.



- c. Click on the pop-up window "Scan for boxes" and select "Yes"; click on the pop-up window "Activate Free Run" and select "Yes". "Yes", as shown in the figure below.

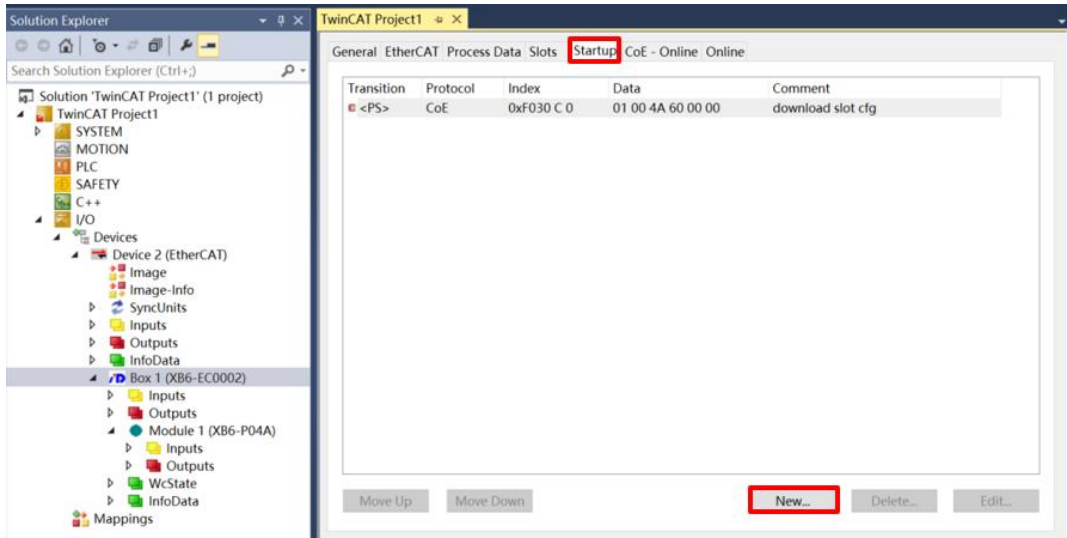


- d. After scanning to the device, you can see Box1 (XB6-EC0002) and Module 1 (XB6-P04A) in the left navigation tree, and you can see TwinCAT is in the "OP" state at "Online". You can see that the RUN lamp of the slave device is always on, as shown in the figure below.

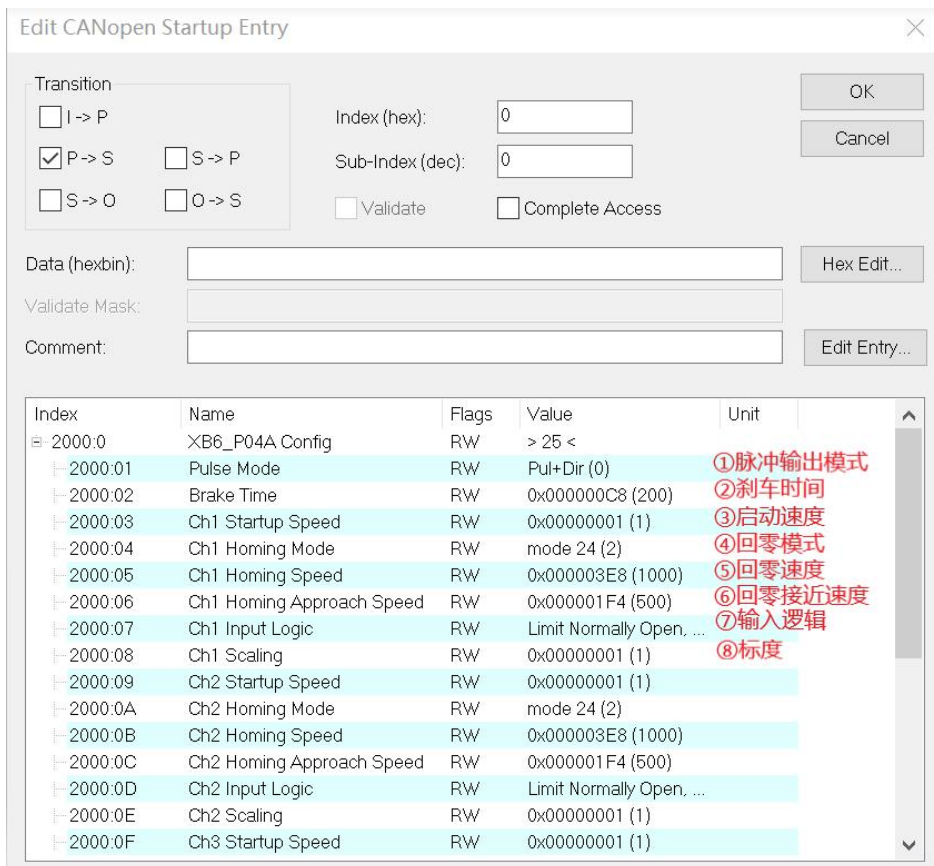


5. Validating Basic Functions

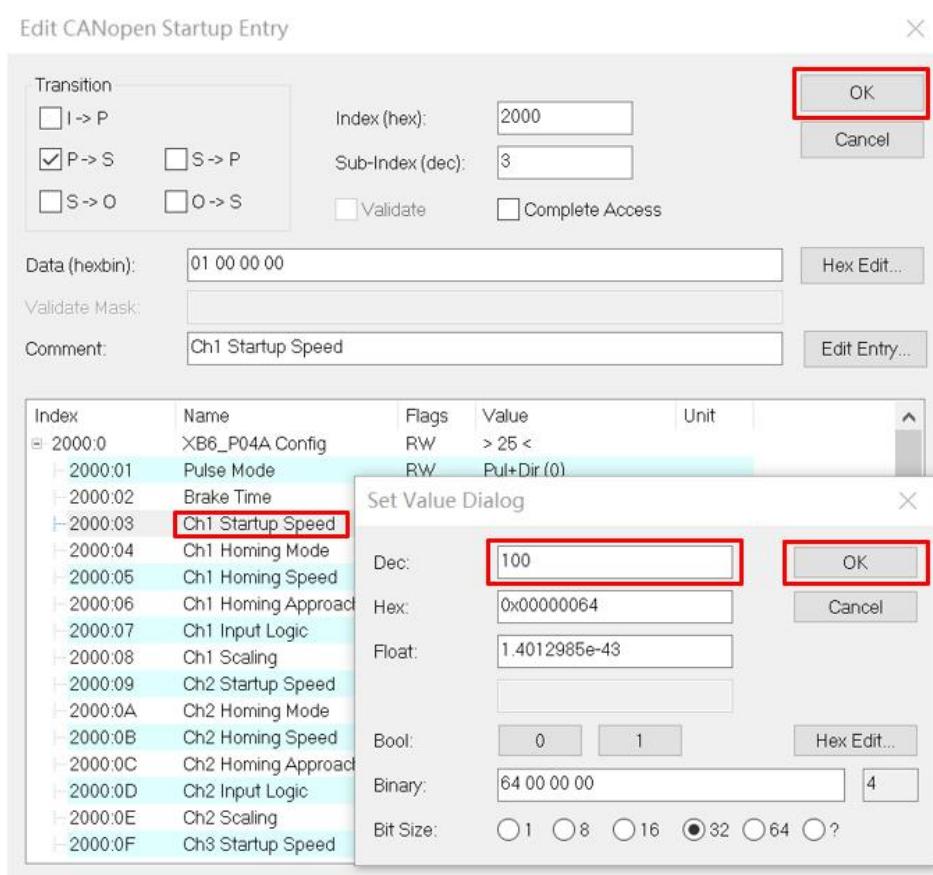
- a. Click "Box1 -> Startup -> New" in the left navigation tree to enter the configuration parameter editing page, as shown in the following figure.



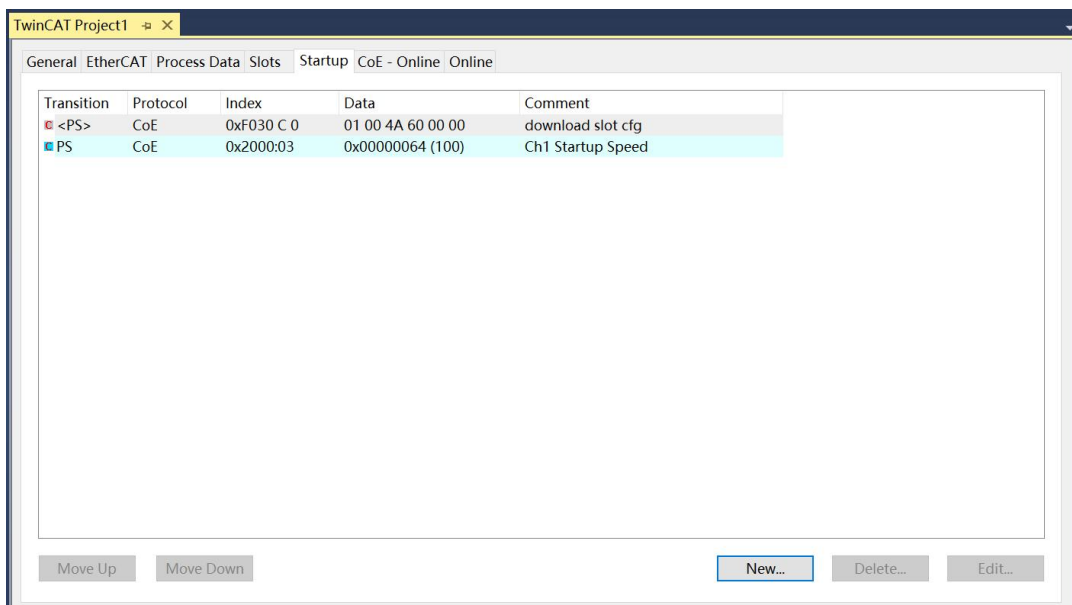
- b. In the Edit CANopen Startup Entry pop-up window, click the "+" in front of Index 2000:0 to expand the configuration parameter menu, you can see 8 configuration parameters, click on any one of the parameters, you can set the relevant configuration, as shown in the following figure.



- c. For example, to modify the Startup Speed parameter, you can double-click "Startup Speed" to modify the parameter value, as shown in the following figure.



- d. After the parameter modification is completed, you can see the modified parameter items and parameter values below Startup, as shown in the following figure.



e. The left navigation tree "Module 1 -> Inputs" displays the upstream data of the pulse output module, which is used to monitor the status of the module, as shown in the figure below.

Name	Online	Type	Size	>A...	In/Out	User ID	Linked to
Ch1 Pulse Output Direction	0	BIT	0.1	41.0	Input	0	
Ch1 Pulse Status Flag 1	0	BIT	0.1	41.1	Input	0	
Ch1 Pulse Status Flag 2	0	BIT	0.1	41.2	Input	0	
Ch1 Homing Mode Running	0	BIT	0.1	41.3	Input	0	
Ch1 Position Mode Running	0	BIT	0.1	41.4	Input	0	
Ch1 Velocity Mode Running	0	BIT	0.1	41.5	Input	0	
Ch1 Homed	0	BIT	0.1	41.6	Input	0	
Ch1 Location Arrival	0	BIT	0.1	41.7	Input	0	
Ch1 Velocity Arrival	0	BIT	0.1	42.0	Input	0	
Ch1 Positive Limit Signal	0	BIT	0.1	42.1	Input	0	
Ch1 Negative Limit Signal	0	BIT	0.1	42.2	Input	0	
Ch1 Home Signal	0	BIT	0.1	42.3	Input	0	
Ch1 Brake Signal	0	BIT	0.1	42.4	Input	0	
Ch2 Pulse Output Direction	0	BIT	0.1	43.0	Input	0	
Ch2 Pulse Status Flag 1	0	BIT	0.1	43.1	Input	0	
Ch2 Pulse Status Flag 2	0	BIT	0.1	43.2	Input	0	
Ch2 Homing Mode Running	0	BIT	0.1	43.3	Input	0	
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Homed	0	BIT	0.1	47.6	Input	0	
Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
Ch1 Error Code	1537	UINT	2.0	49.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch1 Current Location	0	DINT	4.0	57.0	Input	0	
Ch1 Current Velocity	0	DINT	4.0	61.0	Input	0	
Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

f. The left navigation tree "Module 1 -> Outputs" displays the downstream data of the pulse output module, which is used to monitor the output status of the module, as shown in the figure below.

Name	Online	Type	Size	>A...	In/Out	User ID	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	
Ch1 Position/Velocity Mode	0	BIT	0.1	41.2	Output	0	
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	0	BIT	0.1	41.4	Output	0	
Ch1 Brake	0	BIT	0.1	41.5	Output	0	
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	0	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	0	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	0	UDINT	4.0	49.0	Output	0	
Ch1 Running Position	0	DINT	4.0	53.0	Output	0	
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

Examples of Module Functions

◆ **Channel 1 runs 50,000 pulses in the forward direction at 100 kHz**

a. Configure the configuration parameters as shown below.

Edit CANopen Startup Entry

Transition:
 I->P
 P->S
 S->O
 S->P
 O->S

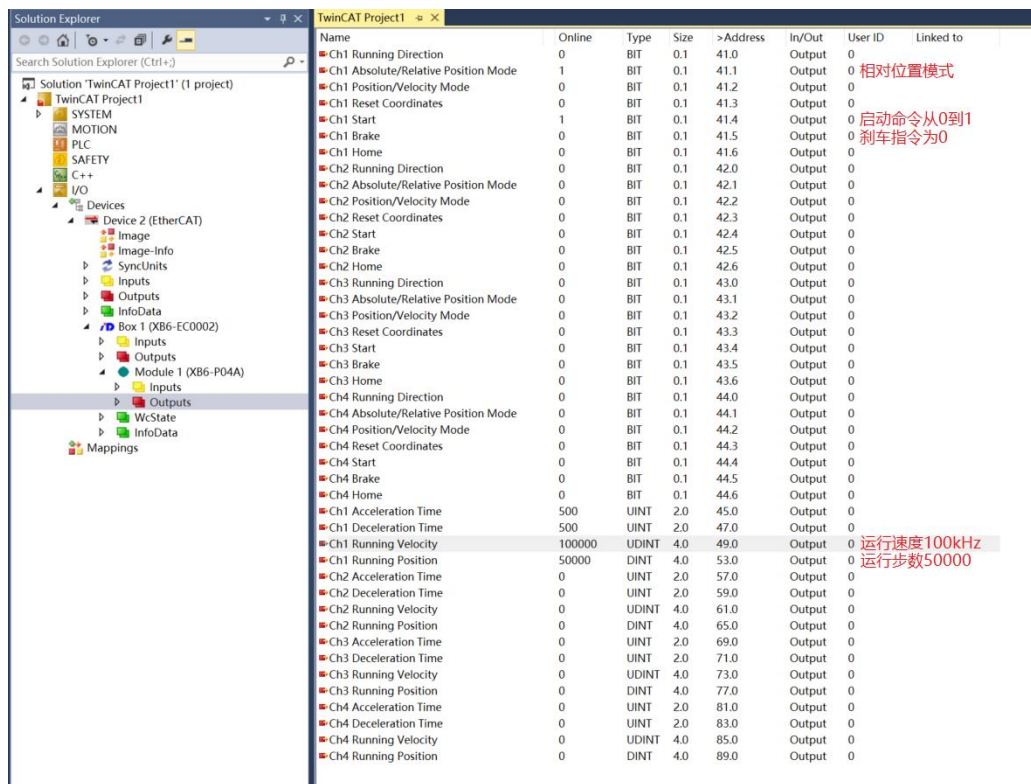
Index (hex): 2000
 Sub-Index (dec): 7

Validate Complete Access

Data (hexbin): 00 00 00 00
 Validate Mask:
 Comment: Ch1 Input Logic

Index	Name	Flags	Value	Unit
2000:0	XB6_P04A Config	RW	> 25 <	
2000:01	Pulse Mode	RW	Pul+Dir (0)	
2000:02	Brake Time	RW	0x000000C8 (200)	
2000:03	Ch1 Startup Speed	RW	0x00000001 (1)	
2000:04	Ch1 Homing Mode	RW	mode 24 (2)	
2000:05	Ch1 Homing Speed	RW	0x000003E8 (1000)	
2000:06	Ch1 Homing Approach Speed	RW	0x000001F4 (500)	
2000:07	Ch1 Input Logic	RW	Limit Normally Open, ...	
2000:08	Ch1 Scaling	RW	0x00000001 (1)	
2000:09	Ch2 Startup Speed	RW	0x00000001 (1)	
2000:0A	Ch2 Homing Mode	RW	mode 24 (2)	
2000:0B	Ch2 Homing Speed	RW	0x000003E8 (1000)	
2000:0C	Ch2 Homing Approach Speed	RW	0x000001F4 (500)	
2000:0D	Ch2 Input Logic	RW	Limit Normally Open, ...	
2000:0E	Ch2 Scaling	RW	0x00000001 (1)	
2000:0F	Ch3 Startup Speed	RW	0x00000001 (1)	

- b. Sets channel 1 to relative position mode;
- c. Configure channel 1 to run at 50000 steps and 100kHz;
- d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- e. Set the start command for channel 1 from 0 to 1 as shown below.



- f. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch1 Pulse Output Direction	0	BIT	0.1	41.0	Input	0	
Ch1 Pulse Status Flag 1	0	BIT	0.1	41.1	Input	0	
Ch1 Pulse Status Flag 2	0	BIT	0.1	41.2	Input	0	
Ch1 Homing Mode Running	0	BIT	0.1	41.3	Input	0	
Ch1 Position Mode Running	0	BIT	0.1	41.4	Input	0	
Ch1 Velocity Mode Running	0	BIT	0.1	41.5	Input	0	
Ch1 Homed	1	BIT	0.1	41.6	Input	0	
Ch1 Location Arrival	0	BIT	0.1	41.7	Input	0	
Ch1 Velocity Arrival	0	BIT	0.1	42.0	Input	0	
Ch1 Positive Limit Signal	0	BIT	0.1	42.1	Input	0	
Ch1 Negative Limit Signal	0	BIT	0.1	42.2	Input	0	
Ch1 Home Signal	0	BIT	0.1	42.3	Input	0	
Ch1 Brake Signal	0	BIT	0.1	42.4	Input	0	
Ch2 Pulse Output Direction	0	BIT	0.1	43.0	Input	0	
Ch2 Pulse Status Flag 1	0	BIT	0.1	43.1	Input	0	
Ch2 Pulse Status Flag 2	0	BIT	0.1	43.2	Input	0	
Ch2 Homing Mode Running	0	BIT	0.1	43.3	Input	0	
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	

g. You can also see that the current coordinates of channel 1 are 50000, as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Homed	0	BIT	0.1	47.6	Input	0	
Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
Ch1 Error Code	0	UINT	2.0	49.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch1 Current Location	50000	DINT	4.0	57.0	Input	0	
Ch1 Current Velocity	0	DINT	4.0	61.0	Input	0	
Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

◆ Channel 1 with a current position of 1000 moves to a position of -20,000 with a running speed of 100 kHz.

a. Configure the configuration parameters as shown below.

✕

Edit CANopen Startup Entry

Transition

I -> P

P -> S S -> P

S -> O O -> S

Index (hex): 2000

Sub-Index (dec): 7

Validate Complete Access

OK

Cancel

Data (hexbin): 00 00 00 00 Hex Edit...

Validate Mask:

Comment: Ch1 Input Logic Edit Entry...

Index	Name	Flags	Value	Unit
2000:0	XB6_P04A Config	RW	> 25 <	
2000:01	Pulse Mode	RW	Pul+Dir (0)	
2000:02	Brake Time	RW	0x000000C8 (200)	
2000:03	Ch1 Startup Speed	RW	0x00000001 (1)	
2000:04	Ch1 Homing Mode	RW	mode 24 (2)	
2000:05	Ch1 Homing Speed	RW	0x000003E8 (1000)	
2000:06	Ch1 Homing Approach Speed	RW	0x000001F4 (500)	
2000:07	Ch1 Input Logic	RW	Limit Normally Open, ...	
2000:08	Ch1 Scaling	RW	0x00000001 (1)	
2000:09	Ch2 Startup Speed	RW	0x00000001 (1)	
2000:0A	Ch2 Homing Mode	RW	mode 24 (2)	
2000:0B	Ch2 Homing Speed	RW	0x000003E8 (1000)	
2000:0C	Ch2 Homing Approach Speed	RW	0x000001F4 (500)	
2000:0D	Ch2 Input Logic	RW	Limit Normally Open, ...	
2000:0E	Ch2 Scaling	RW	0x00000001 (1)	
2000:0F	Ch3 Startup Speed	RW	0x00000001 (1)	

b. The current position of channel 1 is 1000, as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
*Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
*Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
*Ch2 Homed	0	BIT	0.1	43.6	Input	0	
*Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
*Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
*Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
*Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
*Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
*Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
*Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
*Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
*Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
*Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
*Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
*Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
*Ch3 Homed	0	BIT	0.1	45.6	Input	0	
*Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
*Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
*Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
*Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
*Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
*Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
*Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
*Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
*Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
*Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
*Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
*Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
*Ch4 Homed	0	BIT	0.1	47.6	Input	0	
*Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
*Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
*Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
*Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
*Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
*Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
*Ch1 Error Code	0	UINT	2.0	49.0	Input	0	
*Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
*Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
*Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
*Ch1 Current Location	1000	DINT	4.0	57.0	Input	0	
*Ch1 Current Velocity	0	DINT	4.0	61.0	Input	0	
*Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
*Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
*Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
*Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
*Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
*Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

- c. Sets channel 1 to absolute position mode;
- d. Configure channel 1 to run at -20000 steps and 100kHz;
- e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- f. Set the start command for channel 1 from 0 to 1 as shown below.

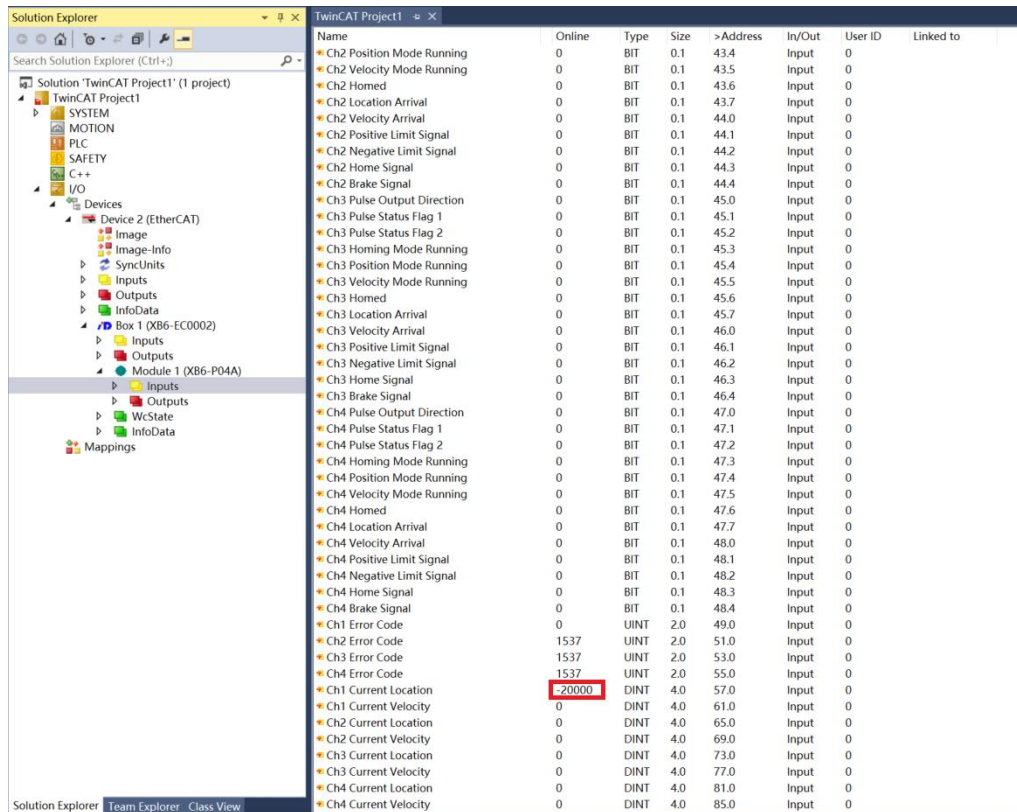
Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
*Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	
*Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	绝对位置模式
*Ch1 Position/Velocity Mode	0	BIT	0.1	41.2	Output	0	
*Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
*Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令从0到1
*Ch1 Brake	0	BIT	0.1	41.5	Output	0	刹车指令为0
*Ch1 Home	0	BIT	0.1	41.6	Output	0	
*Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
*Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
*Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
*Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
*Ch2 Start	0	BIT	0.1	42.4	Output	0	
*Ch2 Brake	0	BIT	0.1	42.5	Output	0	
*Ch2 Home	0	BIT	0.1	42.6	Output	0	
*Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
*Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
*Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
*Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
*Ch3 Start	0	BIT	0.1	43.4	Output	0	
*Ch3 Brake	0	BIT	0.1	43.5	Output	0	
*Ch3 Home	0	BIT	0.1	43.6	Output	0	
*Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
*Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
*Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
*Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
*Ch4 Start	0	BIT	0.1	44.4	Output	0	
*Ch4 Brake	0	BIT	0.1	44.5	Output	0	
*Ch4 Home	0	BIT	0.1	44.6	Output	0	
*Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
*Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
*Ch1 Running Velocity	100000	UDINT	4.0	49.0	Output	0	运行速度100kHz
*Ch1 Running Position	-20000	DINT	4.0	53.0	Output	0	运行步数-20000
*Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
*Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
*Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
*Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
*Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
*Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
*Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
*Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
*Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
*Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
*Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
*Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

g. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.

The screenshot shows the TwinCAT Project1 interface. On the left is the Solution Explorer tree view, and on the right is the I/O table. The 'Ch1 Location Arrival' row in the table has a red box around the value '1' in the 'Online' column.

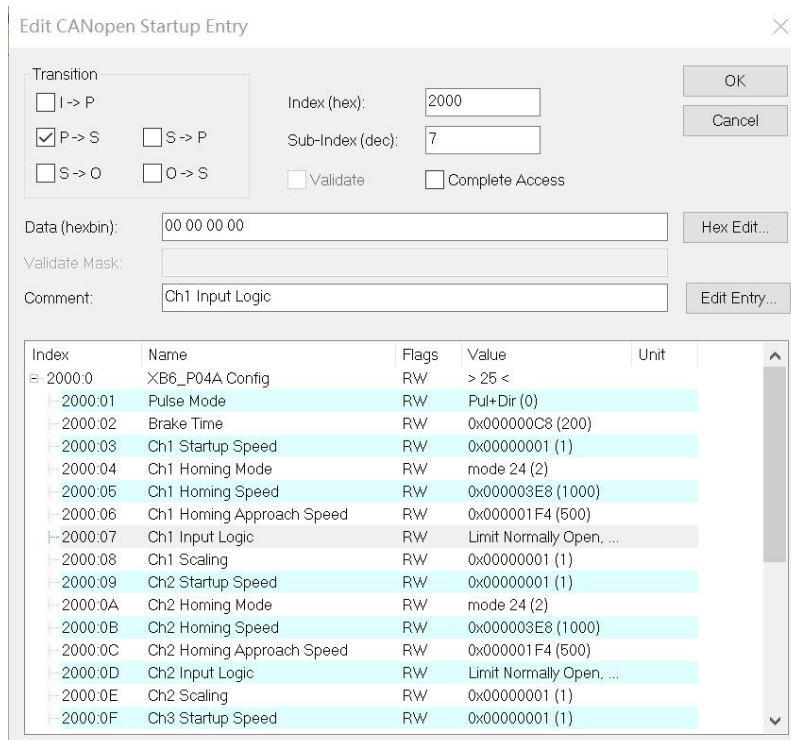
Name	Online	Type	Size	>Add...	In/Out	Us...	Linked to
Ch1 Pulse Output Direction	1	BIT	0.1	41.0	Input	0	
Ch1 Pulse Status Flag 1	0	BIT	0.1	41.1	Input	0	
Ch1 Pulse Status Flag 2	0	BIT	0.1	41.2	Input	0	
Ch1 Homing Mode Running	0	BIT	0.1	41.3	Input	0	
Ch1 Position Mode Running	0	BIT	0.1	41.4	Input	0	
Ch1 Velocity Mode Running	0	BIT	0.1	41.5	Input	0	
Ch1 Homed	0	BIT	0.1	41.6	Input	0	
Ch1 Location Arrival	1	BIT	0.1	41.7	Input	0	
Ch1 Velocity Arrival	0	BIT	0.1	42.0	Input	0	
Ch1 Positive Limit Signal	0	BIT	0.1	42.1	Input	0	
Ch1 Negative Limit Signal	0	BIT	0.1	42.2	Input	0	
Ch1 Home Signal	0	BIT	0.1	42.3	Input	0	
Ch1 Brake Signal	0	BIT	0.1	42.4	Input	0	
Ch2 Pulse Output Direction	0	BIT	0.1	43.0	Input	0	
Ch2 Pulse Status Flag 1	0	BIT	0.1	43.1	Input	0	
Ch2 Pulse Status Flag 2	0	BIT	0.1	43.2	Input	0	
Ch2 Homing Mode Running	0	BIT	0.1	43.3	Input	0	
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	

h. You can also see that channel 1 has a current coordinate of -20000, as shown below.



◆ **Channel 1 turns on speed mode and runs at 100 kHz**

a. Configure the configuration parameters as shown below.



b. Sets channel 1 to speed mode;

c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 forward;

d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

e. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	运动方向为正转
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	
Ch1 Position/Velocity Mode	1	BIT	0.1	41.2	Output	0	速度模式
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令从0到1
Ch1 Brake	0	BIT	0.1	41.5	Output	0	刹车指令为0
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	100000	UDINT	4.0	49.0	Output	0	运行速度100kHz
Ch1 Running Position	0	DINT	4.0	53.0	Output	0	
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

f. During the movement, you can see that the channel 1 velocity arrival is set to 1, as shown below.

Name	Online	Type	Size	>Add...	In/Out	Us...	Linked to
Ch1 Pulse Output Direction	0	BIT	0.1	41.0	Input	0	
Ch1 Pulse Status Flag 1	1	BIT	0.1	41.1	Input	0	
Ch1 Pulse Status Flag 2	1	BIT	0.1	41.2	Input	0	
Ch1 Homing Mode Running	0	BIT	0.1	41.3	Input	0	
Ch1 Position Mode Running	0	BIT	0.1	41.4	Input	0	
Ch1 Velocity Mode Running	1	BIT	0.1	41.5	Input	0	
Ch1 Homed	0	BIT	0.1	41.6	Input	0	
Ch1 Location Arrival	0	BIT	0.1	41.7	Input	0	
Ch1 Velocity Arrival	1	BIT	0.1	42.0	Input	0	
Ch1 Positive Limit Signal	0	BIT	0.1	42.1	Input	0	
Ch1 Negative Limit Signal	0	BIT	0.1	42.2	Input	0	
Ch1 Home Signal	0	BIT	0.1	42.3	Input	0	
Ch1 Brake Signal	0	BIT	0.1	42.4	Input	0	
Ch2 Pulse Output Direction	0	BIT	0.1	43.0	Input	0	
Ch2 Pulse Status Flag 1	0	BIT	0.1	43.1	Input	0	
Ch2 Pulse Status Flag 2	0	BIT	0.1	43.2	Input	0	
Ch2 Homing Mode Running	0	BIT	0.1	43.3	Input	0	
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	

g. During the movement, it is also possible to currently run at the actual speed of 100 kHz, as shown in the following figure.

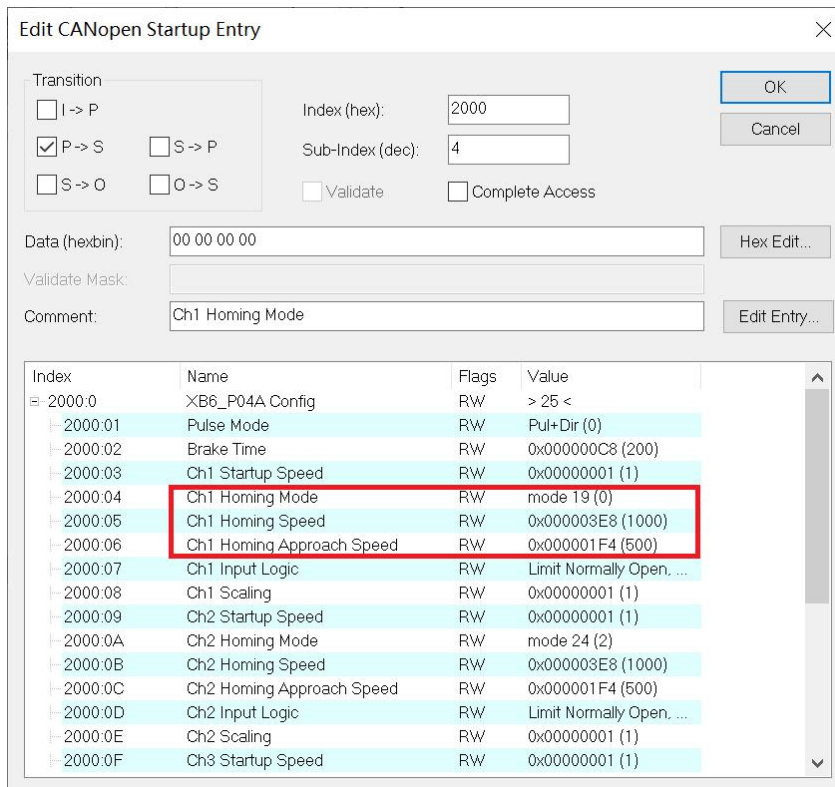
Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Homed	0	BIT	0.1	47.6	Input	0	
Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
Ch1 Error Code	0	UINT	2.0	49.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch1 Current Location	442978	DINT	4.0	57.0	Input	0	
Ch1 Current Velocity	100000	DINT	4.0	61.0	Input	0	
Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

- h. The movement can be stopped by inputting a brake command or triggering a positive limit signal, as shown in the figure below.

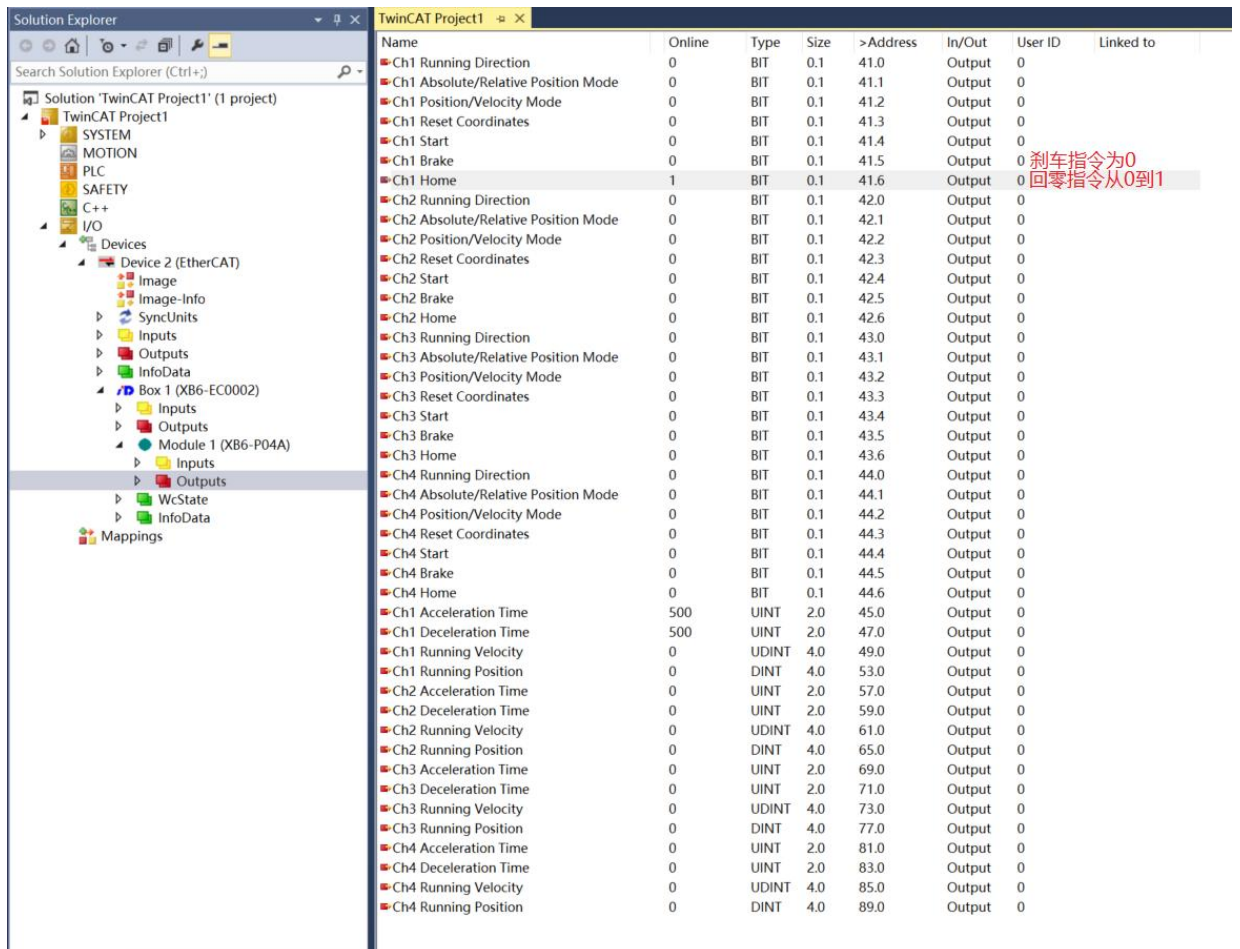
Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Homed	0	BIT	0.1	47.6	Input	0	
Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
Ch1 Error Code	0	UINT	2.0	49.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch1 Current Location	2171666	DINT	4.0	57.0	Input	0	
Ch1 Current Velocity	0	DINT	4.0	61.0	Input	0	
Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

◆ **Channel 1 on zero return**

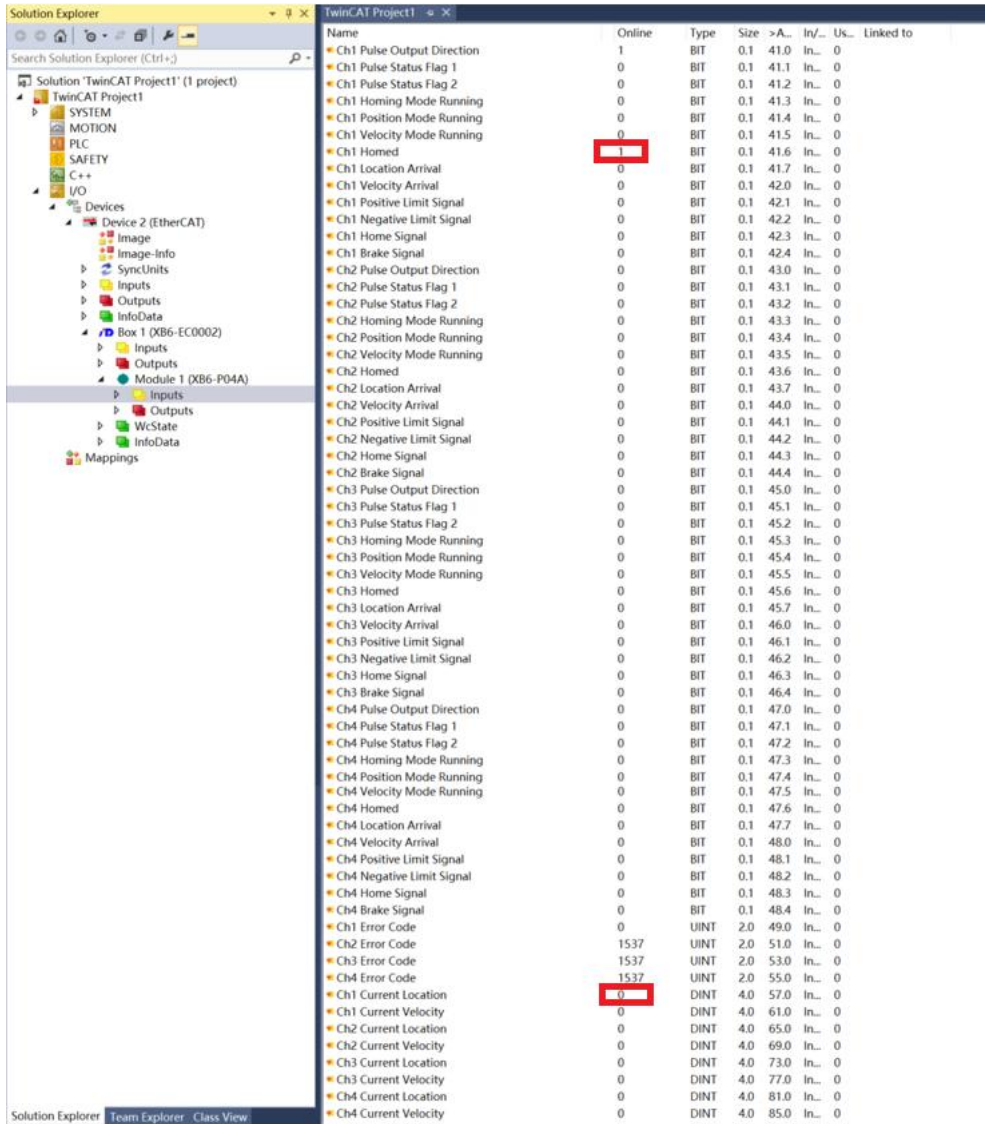
- a. Configure the configuration parameters, select the zero return mode and set the zero return speed and zero approach speed as shown below.



- b. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- c. Set the zero return command for channel 1 from 0 to 1 as shown below.

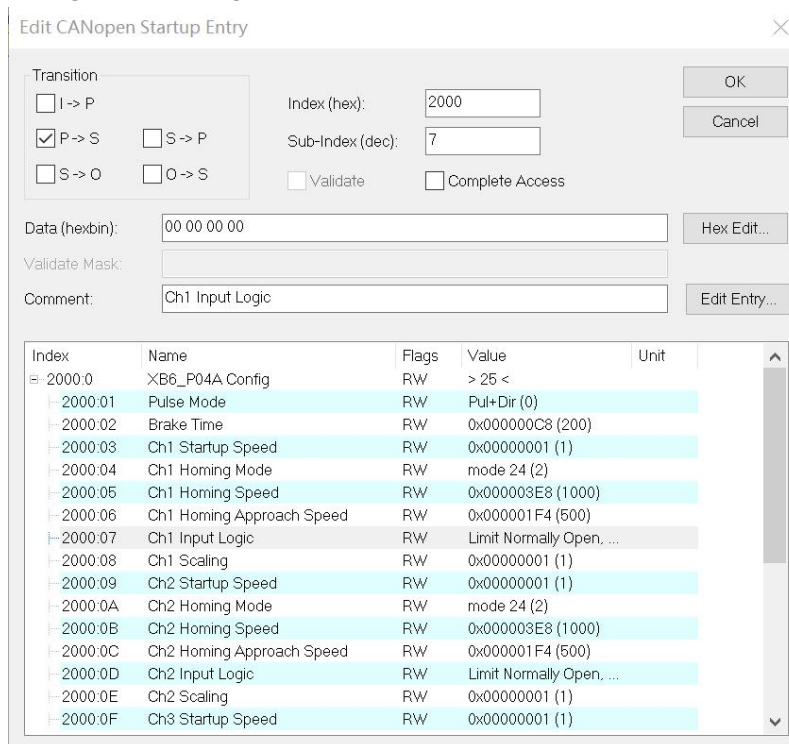


- d. Back to zero mode 19 need to input the origin signal, after inputting the origin signal, decelerate to 0, and then again to return to zero close to the speed of the negative direction of movement, until the origin signal disappears, stop the movement back to zero is complete, you can see the channel 1 coordinates are cleared to zero, the completion of the return to zero is set to 1, as shown in the figure below.



◆ **Channel 1 turns on speed mode, running at 100 kHz, with the speed modified to 10 kHz during operation**

a. Configure the configuration parameters as shown below.



b. Sets channel 1 to speed mode;

c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 positive;

d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

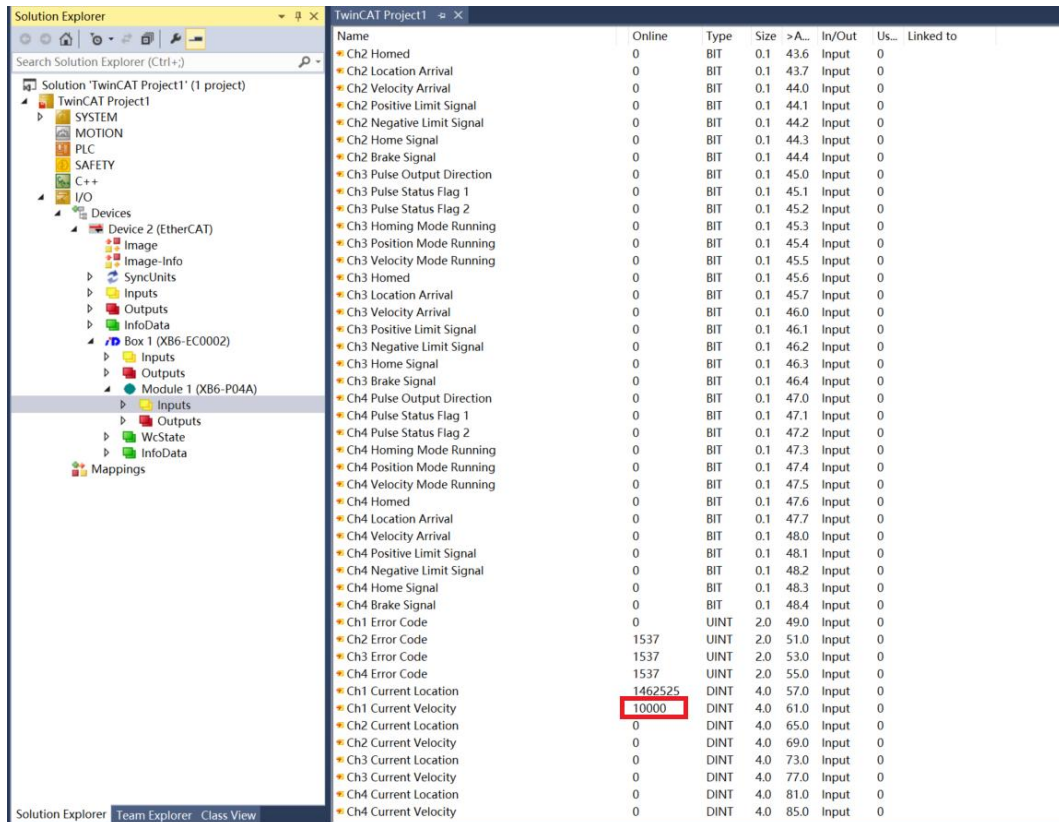
e. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	启动命令
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	运动方向为正转
Ch1 Position/Velocity Mode	1	BIT	0.1	41.2	Output	0	速度模式
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令从0到1
Ch1 Brake	0	BIT	0.1	41.5	Output	0	刹车指令为0
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	100000	UDINT	4.0	49.0	Output	0	运行速度100kHz
Ch1 Running Position	0	DINT	4.0	53.0	Output	0	
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

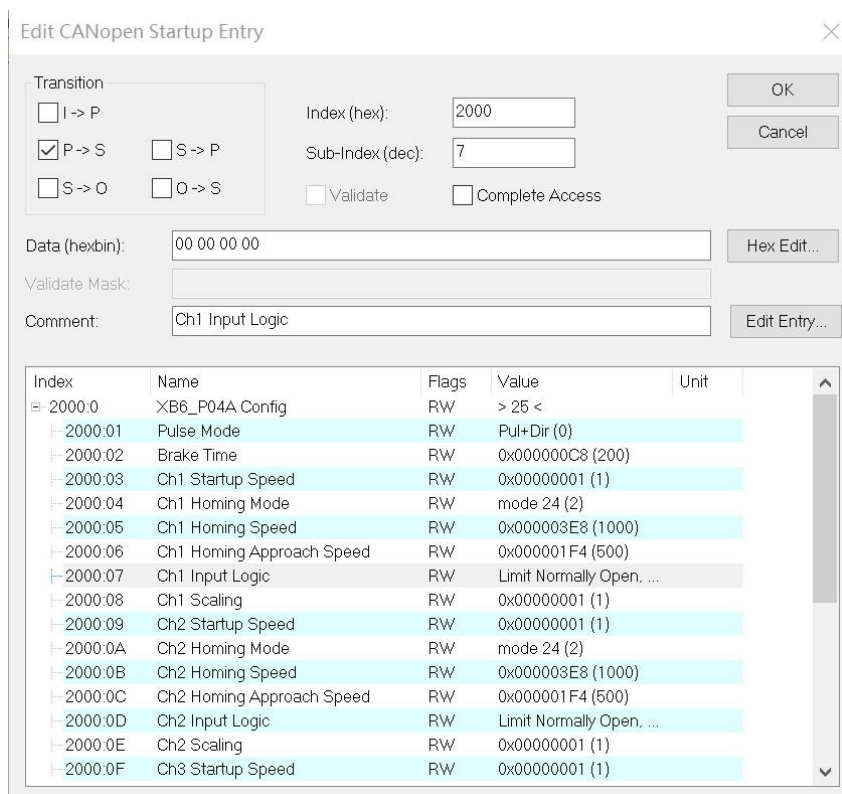
- f. Modify the running speed of channel 1 to 10kHz during motion;
- g. Reset the start command of channel 1 from 0 to 1 to start the motion merge as shown below.

Name	Online	Type	Size	>A...	In/Out	Us...	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	
Ch1 Position/Velocity Mode	1	BIT	0.1	41.2	Output	0	
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令重新置0再置1
Ch1 Brake	0	BIT	0.1	41.5	Output	0	
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	10000	UDINT	4.0	49.0	Output	0	运行速度10kHz
Ch1 Running Position	0	DINT	4.0	53.0	Output	0	
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

- h. Channel 1 can be seen decelerating to 10kHz motion as shown below.



- ◆ The current position of channel 1 is 10000, move to the position of 20000, and modify the position to 50000 during the movement.
 - Configure the configuration parameters as shown below.



b. The current position of channel 1 is 10000, as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.2	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.3	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.6	Input	0	
Ch3 Homed	0	BIT	0.1	45.7	Input	0	
Ch3 Location Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.1	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.4	Input	0	
Ch3 Brake Signal	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.2	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.3	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.6	Input	0	
Ch4 Homed	0	BIT	0.1	47.7	Input	0	
Ch4 Location Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.1	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.4	Input	0	
Ch4 Brake Signal	0	BIT	0.1	49.0	Input	0	
Ch1 Error Code	0	UINT	2.0	51.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	57.0	Input	0	
Ch1 Current Location	10000	DINT	4.0	61.0	Input	0	
Ch1 Current Velocity	0	DINT	4.0	65.0	Input	0	
Ch2 Current Location	0	DINT	4.0	69.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	73.0	Input	0	
Ch3 Current Location	0	DINT	4.0	77.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	81.0	Input	0	
Ch4 Current Location	0	DINT	4.0	85.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	89.0	Input	0	

- c. Sets channel 1 to absolute position mode;
- d. Configure channel 1 to run at 20000 steps and 1kHz;
- e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- f. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	绝对位置模式
Ch1 Position/Velocity Mode	0	BIT	0.1	41.2	Output	0	
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令从0到1
Ch1 Brake	0	BIT	0.1	41.5	Output	0	刹车指令为0
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	1000	UDINT	4.0	49.0	Output	0	运行速度1kHz
Ch1 Running Position	20000	DINT	4.0	53.0	Output	0	运行步数20000
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

- g. Modify the channel 1 running step count to 50,000 during the campaign;
- h. Re-set the start command of channel 1 from 0 to 1 to start the motion merge as shown below.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch1 Running Direction	0	BIT	0.1	41.0	Output	0	
Ch1 Absolute/Relative Position Mode	0	BIT	0.1	41.1	Output	0	
Ch1 Position/Velocity Mode	0	BIT	0.1	41.2	Output	0	
Ch1 Reset Coordinates	0	BIT	0.1	41.3	Output	0	
Ch1 Start	1	BIT	0.1	41.4	Output	0	启动命令重新置0再置1
Ch1 Brake	0	BIT	0.1	41.5	Output	0	
Ch1 Home	0	BIT	0.1	41.6	Output	0	
Ch2 Running Direction	0	BIT	0.1	42.0	Output	0	
Ch2 Absolute/Relative Position Mode	0	BIT	0.1	42.1	Output	0	
Ch2 Position/Velocity Mode	0	BIT	0.1	42.2	Output	0	
Ch2 Reset Coordinates	0	BIT	0.1	42.3	Output	0	
Ch2 Start	0	BIT	0.1	42.4	Output	0	
Ch2 Brake	0	BIT	0.1	42.5	Output	0	
Ch2 Home	0	BIT	0.1	42.6	Output	0	
Ch3 Running Direction	0	BIT	0.1	43.0	Output	0	
Ch3 Absolute/Relative Position Mode	0	BIT	0.1	43.1	Output	0	
Ch3 Position/Velocity Mode	0	BIT	0.1	43.2	Output	0	
Ch3 Reset Coordinates	0	BIT	0.1	43.3	Output	0	
Ch3 Start	0	BIT	0.1	43.4	Output	0	
Ch3 Brake	0	BIT	0.1	43.5	Output	0	
Ch3 Home	0	BIT	0.1	43.6	Output	0	
Ch4 Running Direction	0	BIT	0.1	44.0	Output	0	
Ch4 Absolute/Relative Position Mode	0	BIT	0.1	44.1	Output	0	
Ch4 Position/Velocity Mode	0	BIT	0.1	44.2	Output	0	
Ch4 Reset Coordinates	0	BIT	0.1	44.3	Output	0	
Ch4 Start	0	BIT	0.1	44.4	Output	0	
Ch4 Brake	0	BIT	0.1	44.5	Output	0	
Ch4 Home	0	BIT	0.1	44.6	Output	0	
Ch1 Acceleration Time	500	UINT	2.0	45.0	Output	0	
Ch1 Deceleration Time	500	UINT	2.0	47.0	Output	0	
Ch1 Running Velocity	1000	UDINT	4.0	49.0	Output	0	
Ch1 Running Position	50000	DINT	4.0	53.0	Output	0	运行步数50000
Ch2 Acceleration Time	0	UINT	2.0	57.0	Output	0	
Ch2 Deceleration Time	0	UINT	2.0	59.0	Output	0	
Ch2 Running Velocity	0	UDINT	4.0	61.0	Output	0	
Ch2 Running Position	0	DINT	4.0	65.0	Output	0	
Ch3 Acceleration Time	0	UINT	2.0	69.0	Output	0	
Ch3 Deceleration Time	0	UINT	2.0	71.0	Output	0	
Ch3 Running Velocity	0	UDINT	4.0	73.0	Output	0	
Ch3 Running Position	0	DINT	4.0	77.0	Output	0	
Ch4 Acceleration Time	0	UINT	2.0	81.0	Output	0	
Ch4 Deceleration Time	0	UINT	2.0	83.0	Output	0	
Ch4 Running Velocity	0	UDINT	4.0	85.0	Output	0	
Ch4 Running Position	0	DINT	4.0	89.0	Output	0	

- i. After the movement, you can see that the current coordinates of channel 1 are 50000, as shown in the following figure.

Name	Online	Type	Size	>Address	In/Out	User ID	Linked to
Ch2 Position Mode Running	0	BIT	0.1	43.4	Input	0	
Ch2 Velocity Mode Running	0	BIT	0.1	43.5	Input	0	
Ch2 Homed	0	BIT	0.1	43.6	Input	0	
Ch2 Location Arrival	0	BIT	0.1	43.7	Input	0	
Ch2 Velocity Arrival	0	BIT	0.1	44.0	Input	0	
Ch2 Positive Limit Signal	0	BIT	0.1	44.1	Input	0	
Ch2 Negative Limit Signal	0	BIT	0.1	44.2	Input	0	
Ch2 Home Signal	0	BIT	0.1	44.3	Input	0	
Ch2 Brake Signal	0	BIT	0.1	44.4	Input	0	
Ch3 Pulse Output Direction	0	BIT	0.1	45.0	Input	0	
Ch3 Pulse Status Flag 1	0	BIT	0.1	45.1	Input	0	
Ch3 Pulse Status Flag 2	0	BIT	0.1	45.2	Input	0	
Ch3 Homing Mode Running	0	BIT	0.1	45.3	Input	0	
Ch3 Position Mode Running	0	BIT	0.1	45.4	Input	0	
Ch3 Velocity Mode Running	0	BIT	0.1	45.5	Input	0	
Ch3 Homed	0	BIT	0.1	45.6	Input	0	
Ch3 Location Arrival	0	BIT	0.1	45.7	Input	0	
Ch3 Velocity Arrival	0	BIT	0.1	46.0	Input	0	
Ch3 Positive Limit Signal	0	BIT	0.1	46.1	Input	0	
Ch3 Negative Limit Signal	0	BIT	0.1	46.2	Input	0	
Ch3 Home Signal	0	BIT	0.1	46.3	Input	0	
Ch3 Brake Signal	0	BIT	0.1	46.4	Input	0	
Ch4 Pulse Output Direction	0	BIT	0.1	47.0	Input	0	
Ch4 Pulse Status Flag 1	0	BIT	0.1	47.1	Input	0	
Ch4 Pulse Status Flag 2	0	BIT	0.1	47.2	Input	0	
Ch4 Homing Mode Running	0	BIT	0.1	47.3	Input	0	
Ch4 Position Mode Running	0	BIT	0.1	47.4	Input	0	
Ch4 Velocity Mode Running	0	BIT	0.1	47.5	Input	0	
Ch4 Homed	0	BIT	0.1	47.6	Input	0	
Ch4 Location Arrival	0	BIT	0.1	47.7	Input	0	
Ch4 Velocity Arrival	0	BIT	0.1	48.0	Input	0	
Ch4 Positive Limit Signal	0	BIT	0.1	48.1	Input	0	
Ch4 Negative Limit Signal	0	BIT	0.1	48.2	Input	0	
Ch4 Home Signal	0	BIT	0.1	48.3	Input	0	
Ch4 Brake Signal	0	BIT	0.1	48.4	Input	0	
Ch1 Error Code	0	UINT	2.0	49.0	Input	0	
Ch2 Error Code	1537	UINT	2.0	51.0	Input	0	
Ch3 Error Code	1537	UINT	2.0	53.0	Input	0	
Ch4 Error Code	1537	UINT	2.0	55.0	Input	0	
Ch1 Current Location	50000	DINT	4.0	57.0	Input	0	
Ch1 Current Velocity	0	DINT	4.0	61.0	Input	0	
Ch2 Current Location	0	DINT	4.0	65.0	Input	0	
Ch2 Current Velocity	0	DINT	4.0	69.0	Input	0	
Ch3 Current Location	0	DINT	4.0	73.0	Input	0	
Ch3 Current Velocity	0	DINT	4.0	77.0	Input	0	
Ch4 Current Location	0	DINT	4.0	81.0	Input	0	
Ch4 Current Velocity	0	DINT	4.0	85.0	Input	0	

Application in TIA Portal V17 software environment

1、 Preliminary

- **hardware environment**

- **Module Model XB6-P04A**

- **Power Module, PROFINET Coupler, End Cap**

This description takes the XB6-P2000H power supply, XB6-PN0002 coupler as an example

- **One computer with pre-installed TIA Portal V17 software**

- **Shielded cables for PROFINET**

- **Motor drives, stepper/servo motors and other equipment**

- **One Siemens PLC, this description takes Siemens S7-1200 CPU1214C DC/DC/DC as an example**

- **One switching power supply**

- **Module mounting rails and rail mounts**

- **Device Configuration Files**

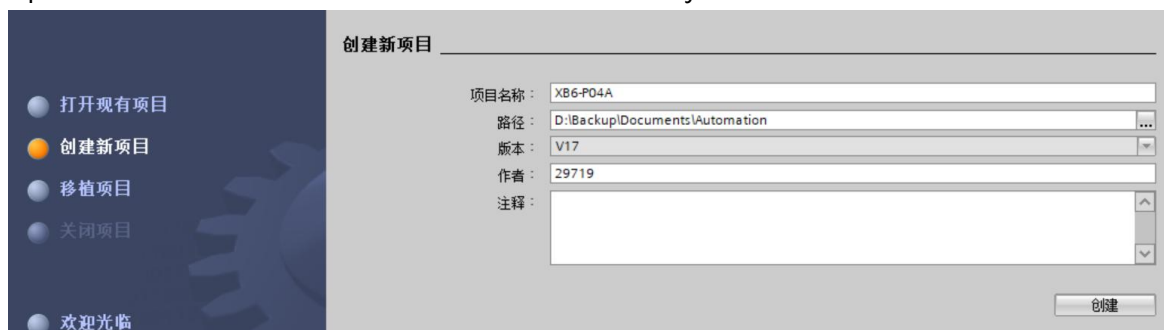
Configuration file to get the address: <https://www.solidotech.com/documents/configfile>

- **Hardware configuration and wiring**

Please follow " [4 Mounting and dismounting](#) " " [5 Wiring](#) " " [5 Wiring](#) "

2、 New construction

a. Open the TIA Portal V17 software and click Create New Project.



- ◆ Item name: customizable, can be left as default.

- ◆ Path: the project keeps the path, which can be left as default.

- ◆ Version: can be left as default.

- ◆ AUTHOR: The default can be maintained.

- ◆ Note: Customizable, may not be filled in.

3. Adding a PLC controller

- a. Click Configure Devices, as shown in the following figure.

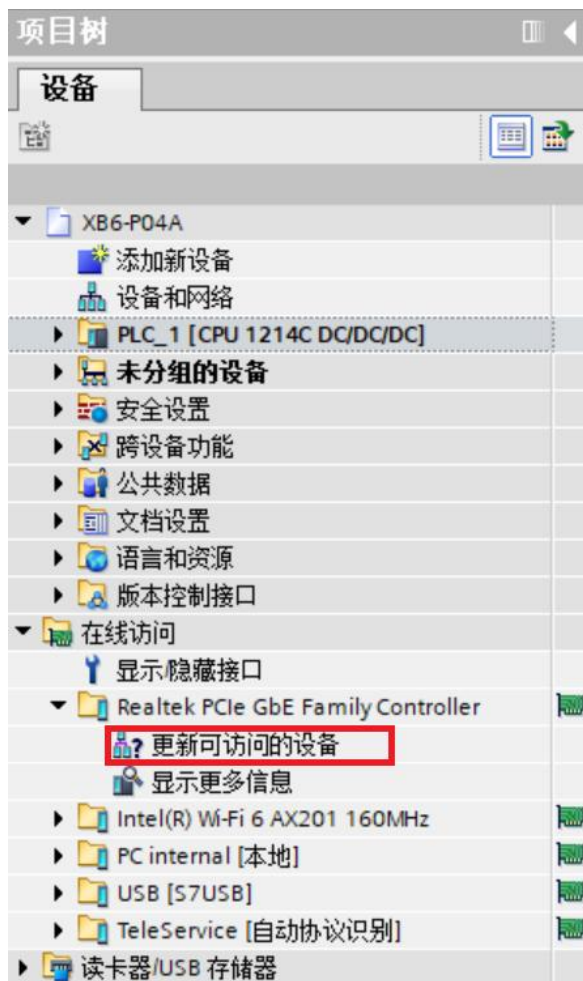


- b. Click "Add New Device", select the PLC model you are currently using, and click "Add", as shown in the following figure. After adding, you can see that the PLC has been added to the device navigation tree.



4. Scanning connected devices

- a. Click "Online Access -> Update Accessible Devices" in the left navigation tree as shown below.



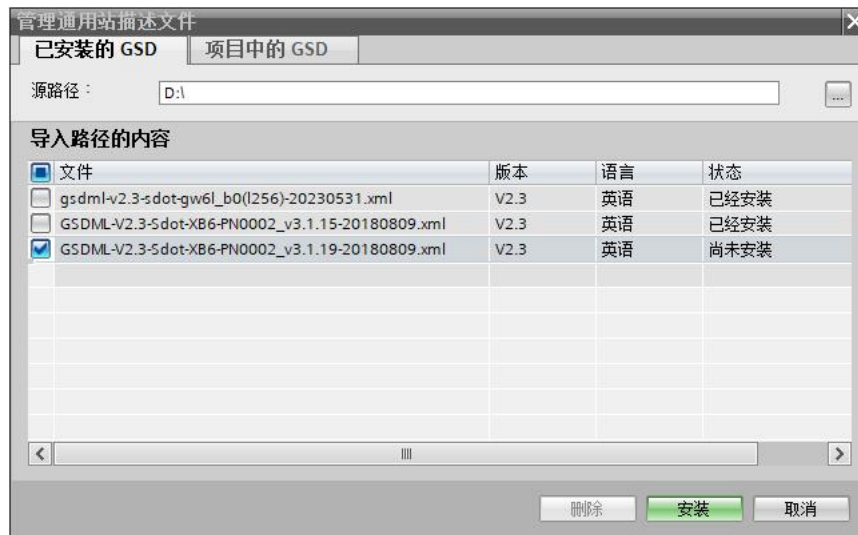
- b. When the update is complete, the connected slave devices are displayed, as shown in the following figure.



The IP address of the computer must be in the same network segment as the PLC, if not, modify the IP address of the computer and repeat the above steps.

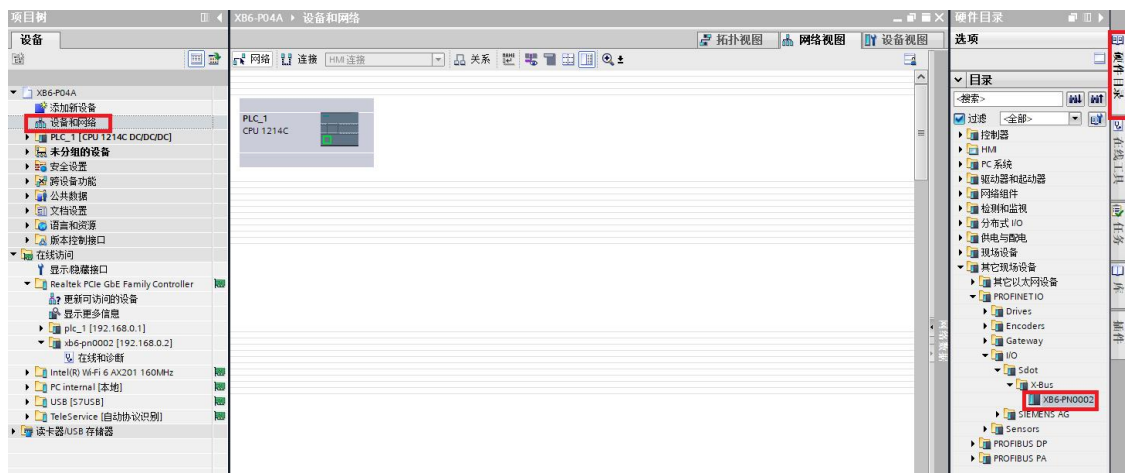
5. Adding a GSD profile

- In the menu bar, select "Options -> Manage General Station Description File (GSDML) (D)".
- Click Source Path to select the file.
- Check if the status of the GSD file you want to add is "Not yet installed", click the "Install" button if it is not installed, or click "Cancel" if it is already installed to skip the installation step.



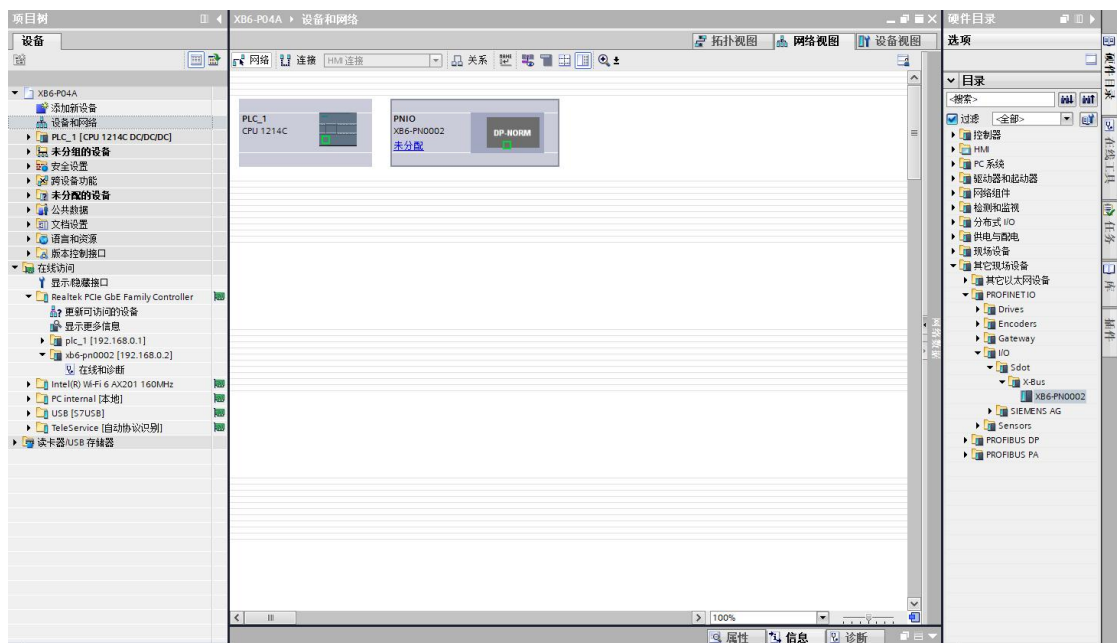
6. Adding Slave Devices

- Double-click on "Devices & Networks" in the left navigation bar.
- Click the "Hardware Catalog" vertical button on the right, the catalog is displayed as shown below.

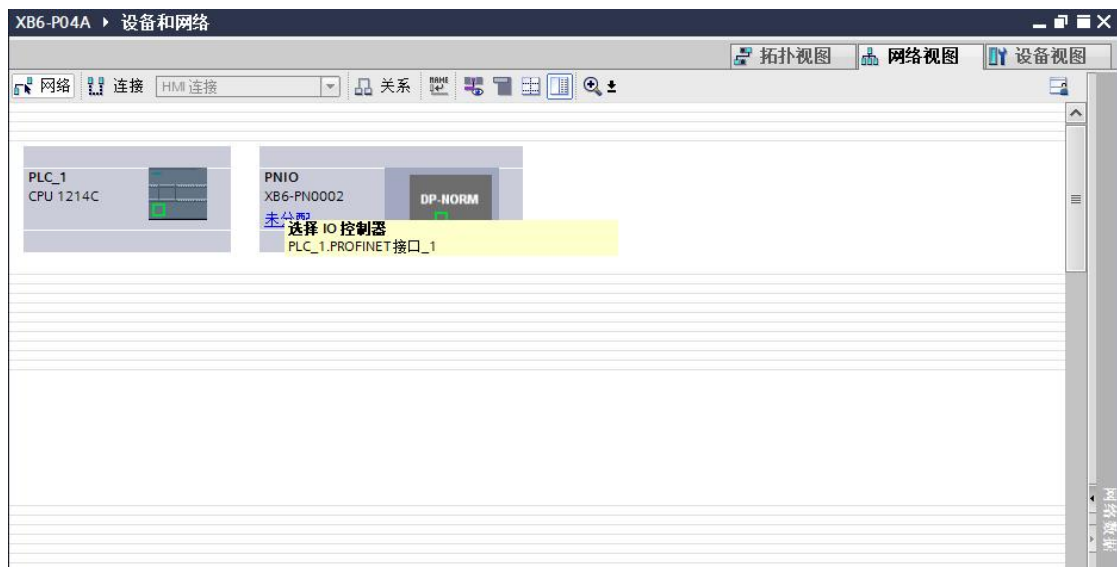


- Select "Other Ethernet Devices -> ROFINET IO -> I/O -> Sdot -> X-Bus -> XB6-PN0002".

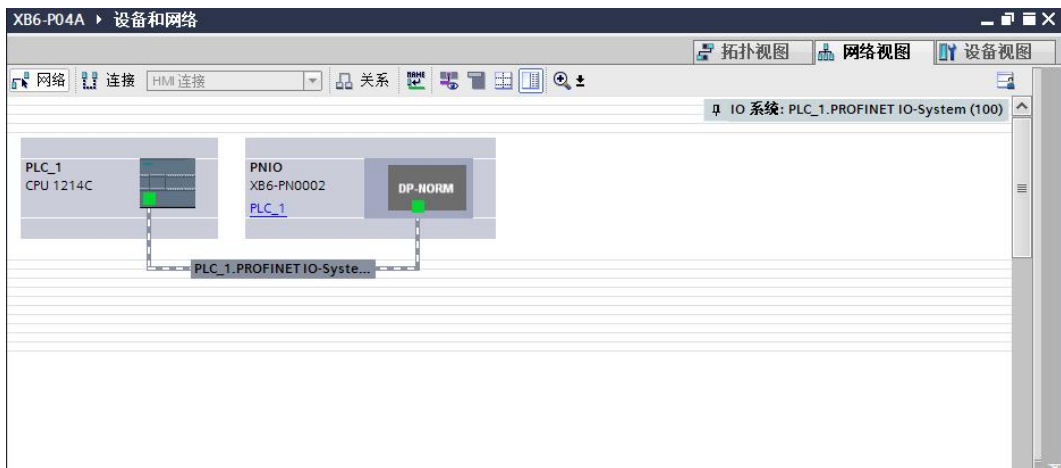
- d. Drag or double-click "XB6-PN0002" to "Network View" as shown below.



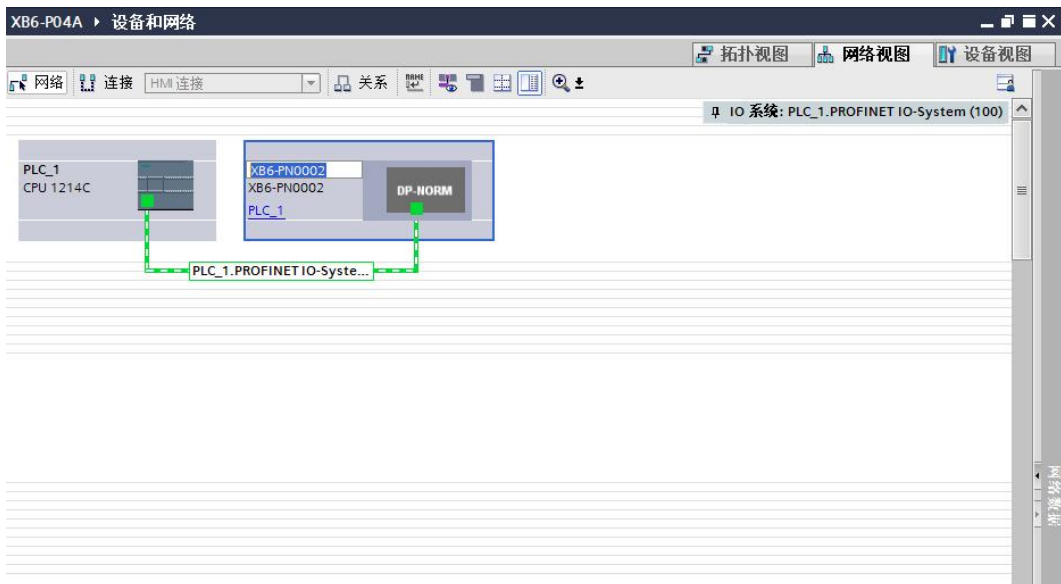
- e. Click "Unassigned (blue font)" on the slave device and select "PLC_1.PROFINET Interface_1" as shown below.



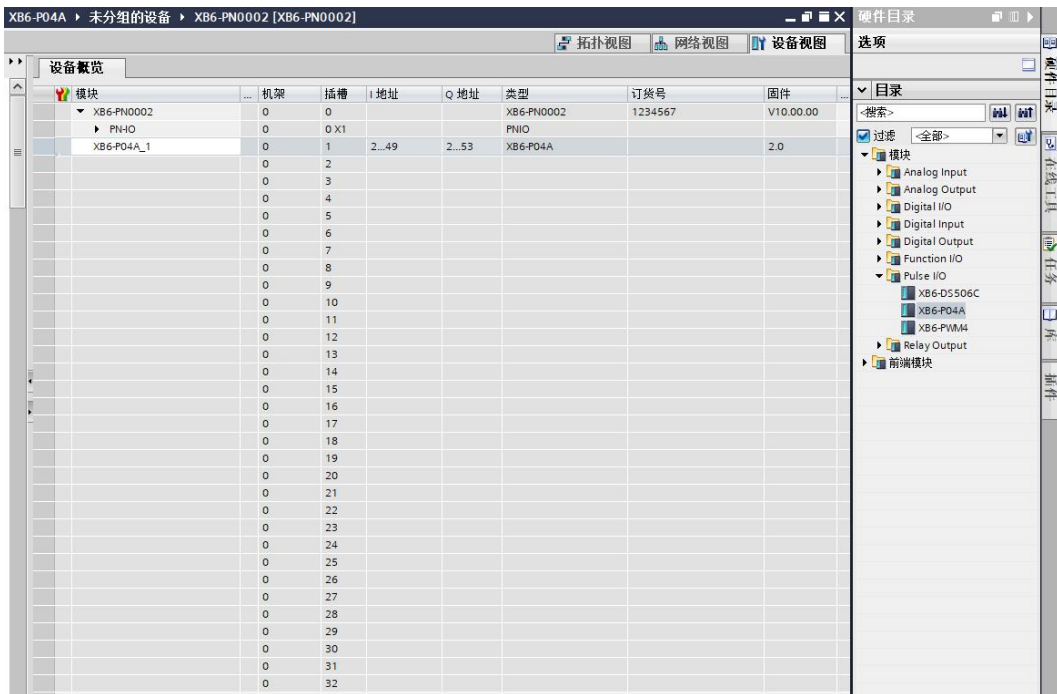
f. When the connection is complete, it is shown in the following figure.



g. Click on the device name to rename the device, as shown in the following figure.

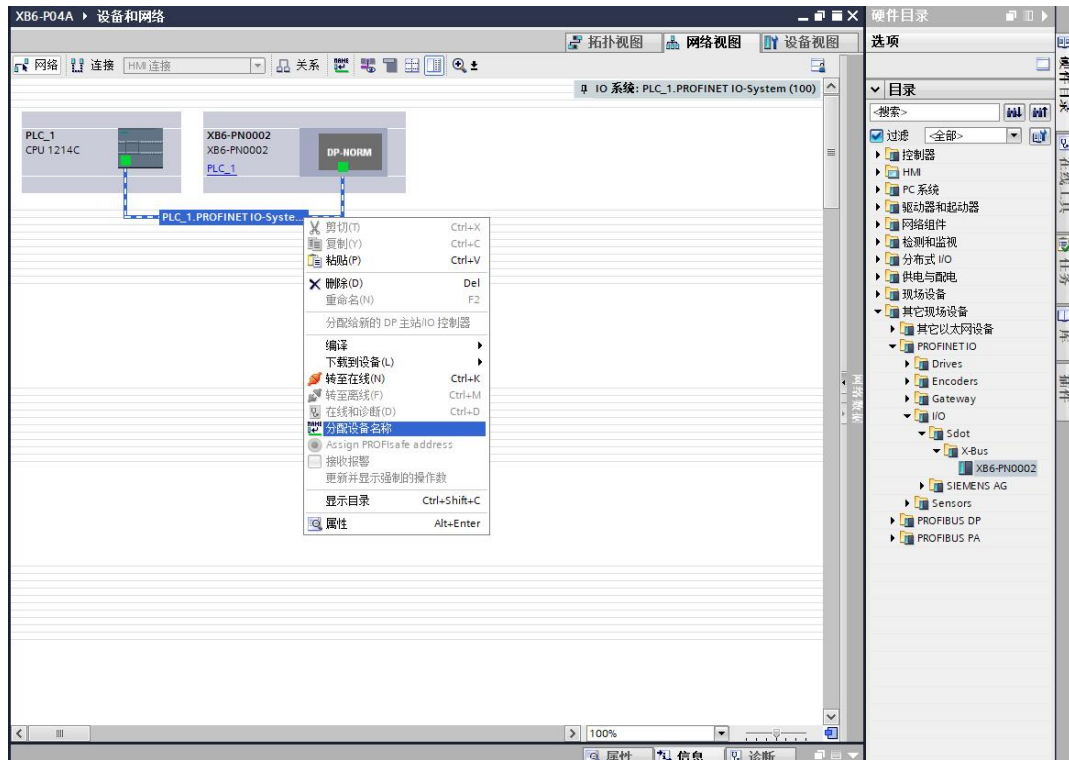


- h. Click on "Device View" to enter the device overview of the coupler, and under "Hardware Catalog" on the right hand side, add the modules according to the actual topology (the order must be consistent with the actual topology, otherwise the communication will not be successful), as shown in the following figure.

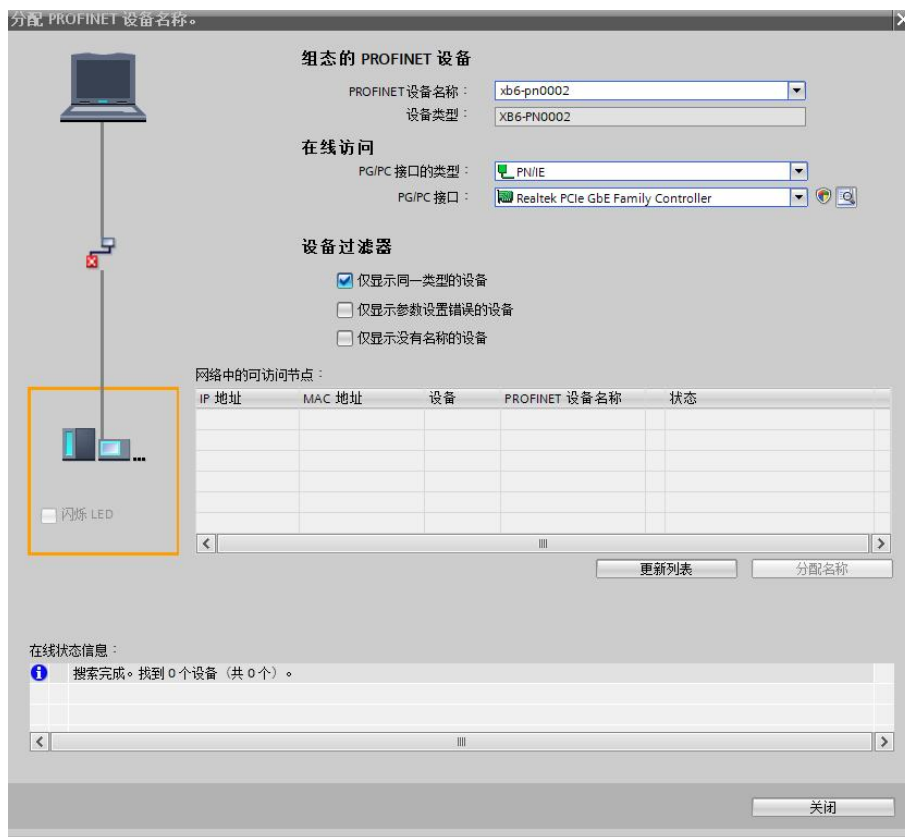


7、Assign device name

- a. Switch to "Network View", right-click the connection line between PLC and coupler, and select "Assign Device Name" as shown in the following figure.



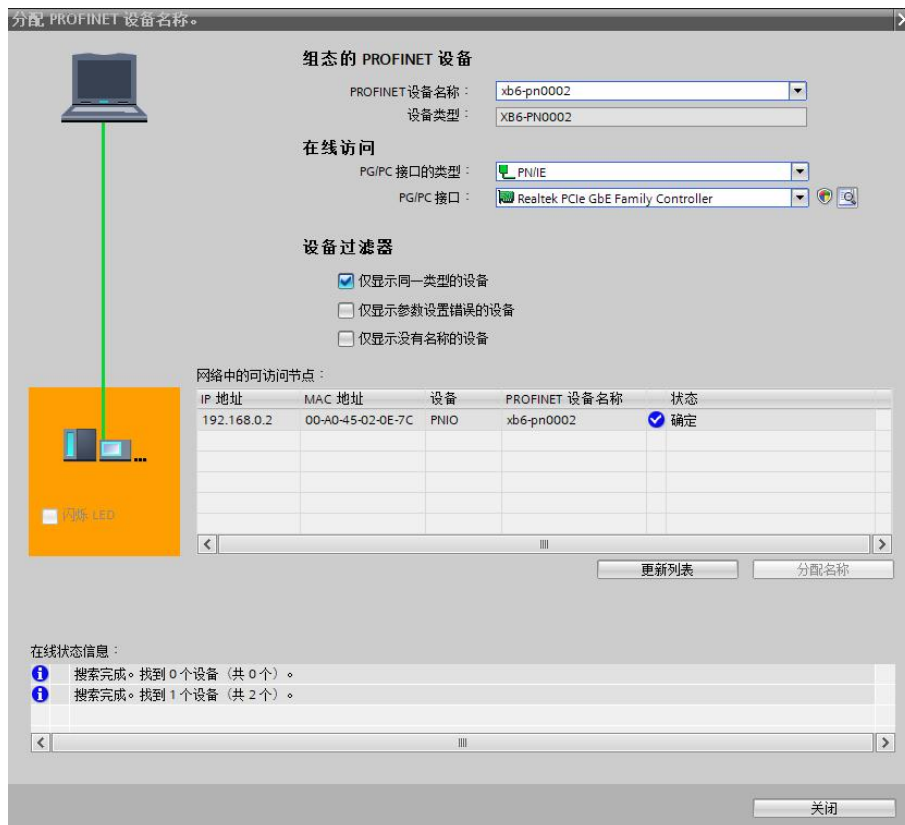
b. The "Assign PROFINET Device Name" window pops up as shown below.



Check to see if the MAC address on the coupler silkscreen is the same as the MAC address of the assigned device name.


- ◆ PROFINET Device Name: The name set in "Assign IP address and device name to slave".
- ◆ Type of PG/PC interface: PN/IE.
- ◆ PG/PC interface: the actual network adapter used.

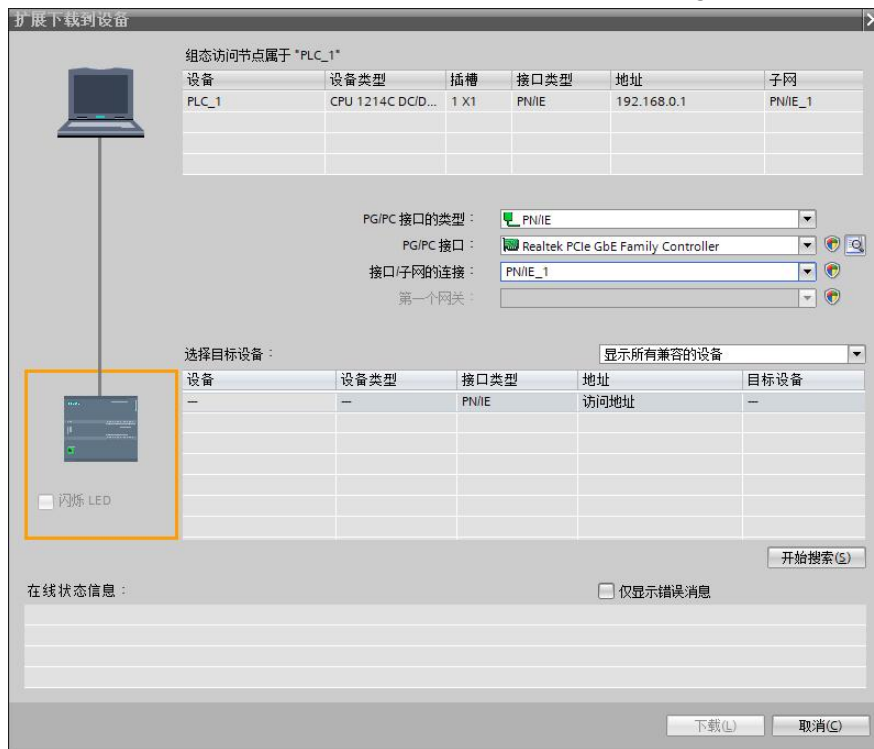
- c. Select the slave device in turn, click Update List, and click Assign Name. Check whether the status of the node is "OK" in "Accessible nodes in the network", as shown in the following figure.



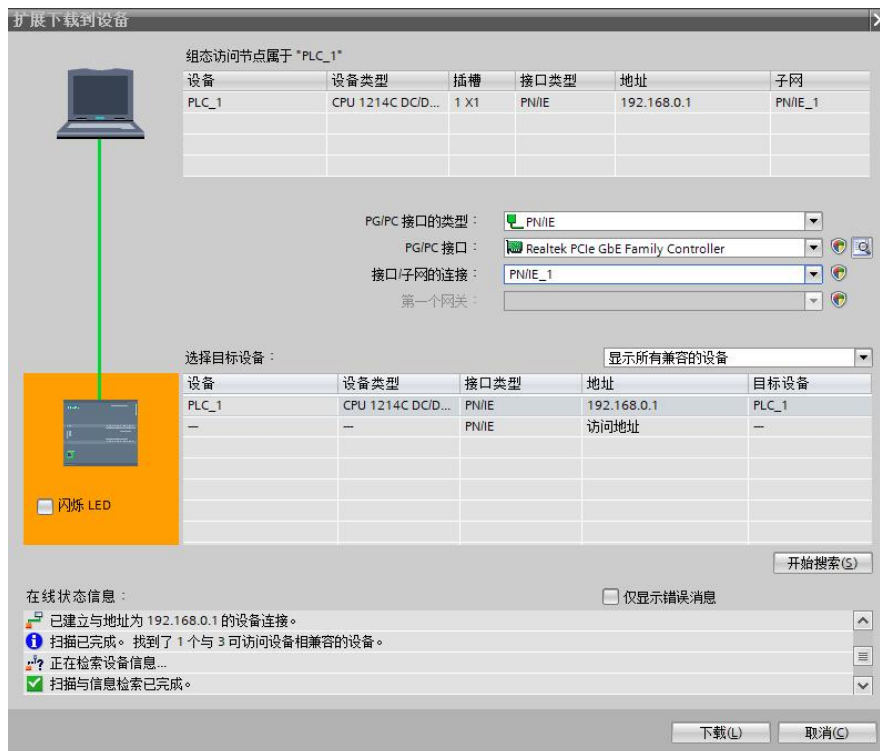
- d. Click Close.

8. Download Configuration Structure

- a. In Network View, check PLC.
- b. Click the  button in the menu bar to download the current configuration to the PLC.
- c. In the "Extended Download to Device" pop-up screen, configure the following figure.



- d. Click the "Start Search" button as shown below.

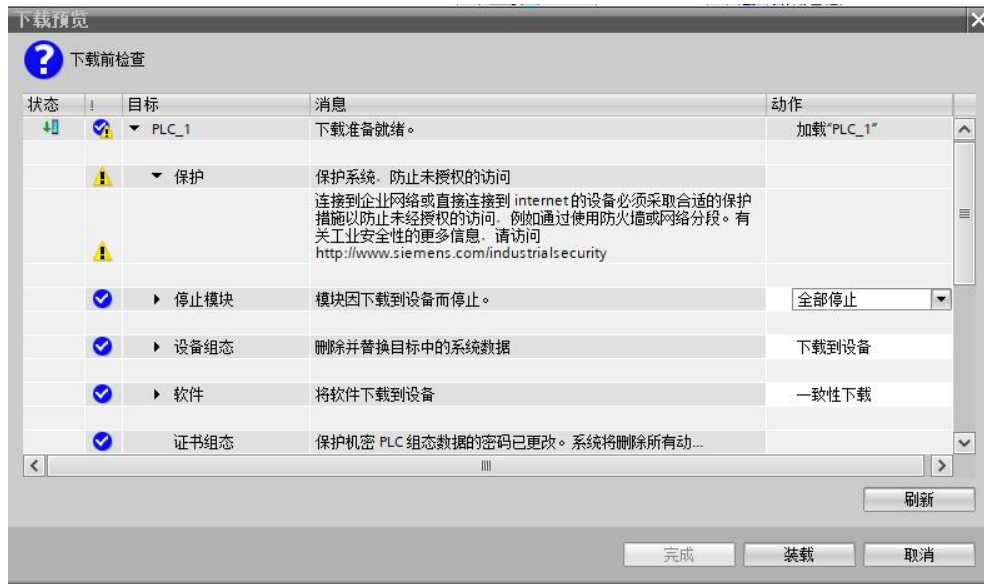


e. Click on "Download".

f. Select "Continue without synchronization" as shown below.




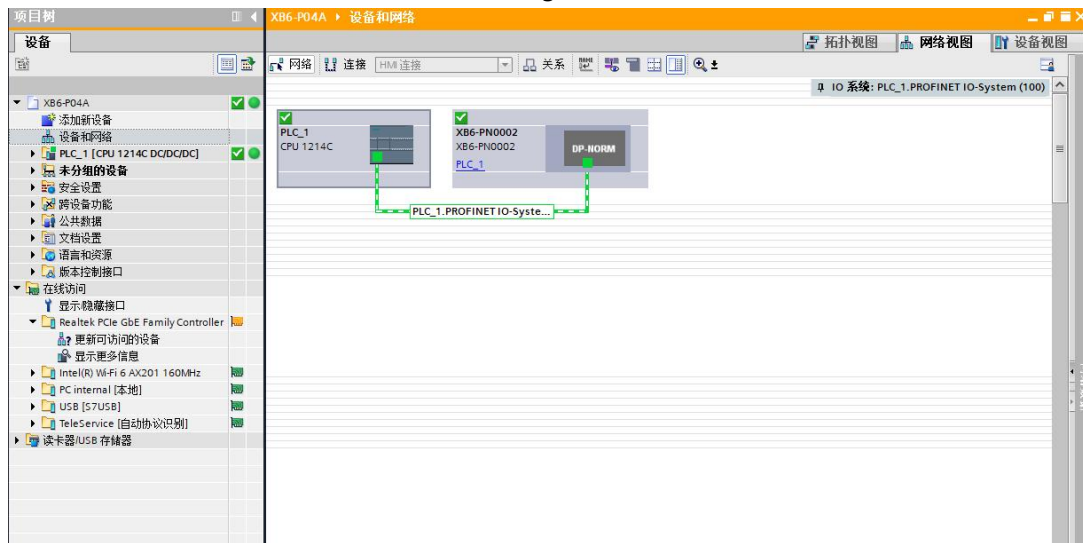
g. Select "Stop All".



- h. Click Load.
- i. Click Finish.
- j. Power the unit back up.

9、Communication link

- a. After  clicking the button, click the "Go Online" button, the icons are all green, that is, the connection is successful, as shown in the figure below.

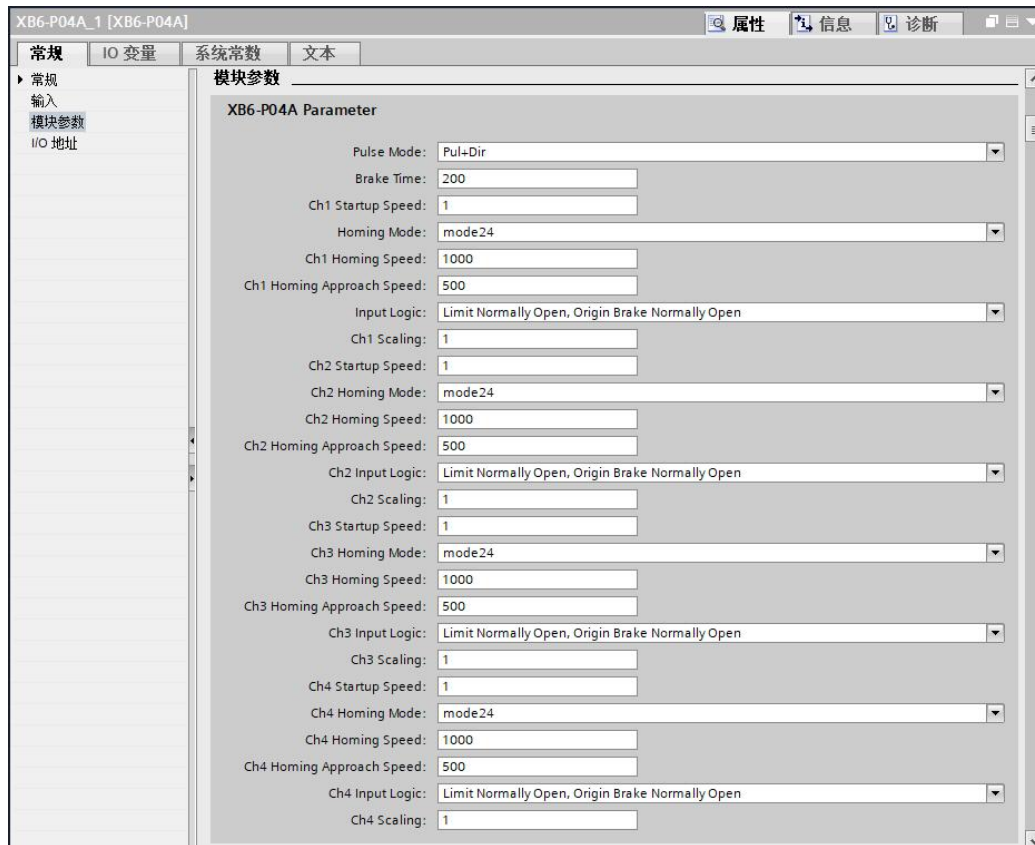


10、Check the device indicator

XB6-P2000H: P lamp is always on in green.

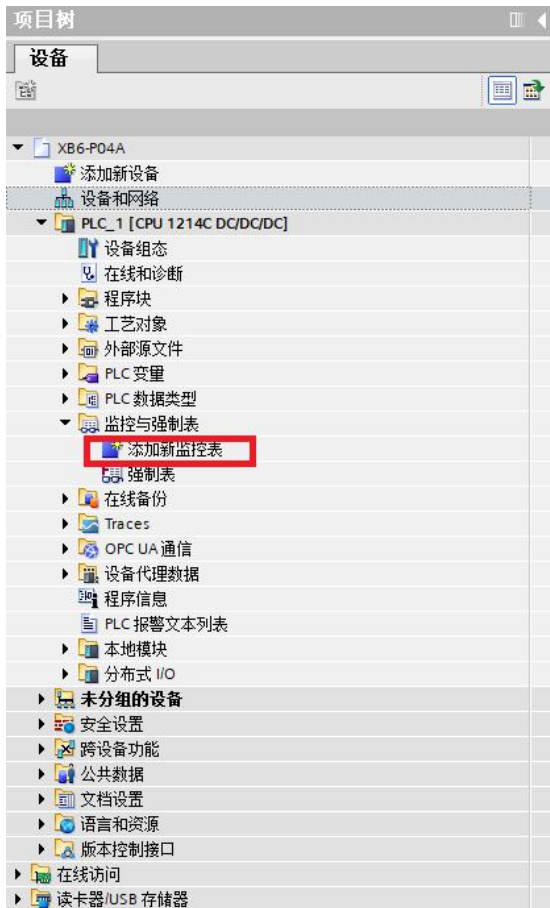
XB6-PN0002: P lamp green is always on, L lamp is always on, B lamp is not on, R lamp is always on.

XB6-P04A module: P lamp is always on, R lamp is always on.

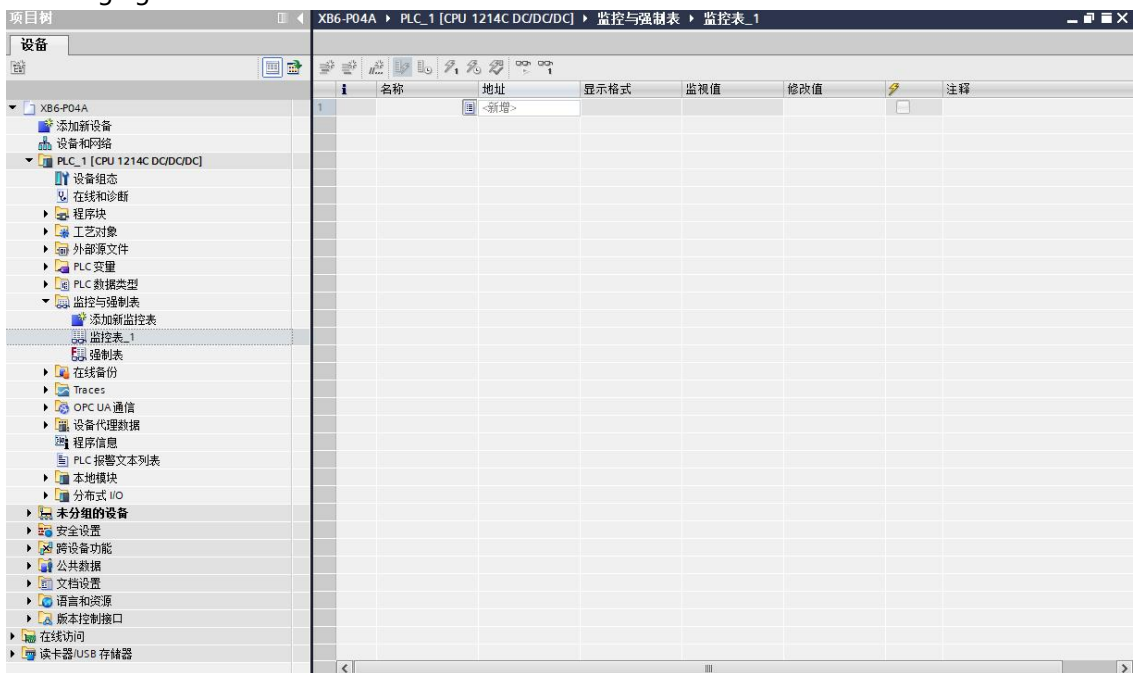


12、 Functional verification

- Expand the left side of the project navigation, select "Monitor and Force Meter", as shown in the following figure.




b. Double-click "Add New Monitor Table", the system adds a new monitor table, as shown in the following figure.



c. Open the Device View and check the channel Q address (channel address of the output signal) and I address (channel address of the input signal) of the module XB6-P04A in the device overview.

For example, the "Q address" of XB6-P04A module is 1 to 36, and the "I address" is 1 to 24, as shown in the following figure.

模块	机架	插槽	I 地址	Q 地址	类型	订货号	固件
XB6-PN0002	0	0			XB6-PN0002	1234567	V10.00.00
PNIO	0	0 X1			PNIO		
XB6-P04A_1	0	1	2...49	2...53	XB6-P04A		2.0
	0	2					
	0	3					
	0	4					
	0	5					
	0	6					
	0	7					
	0	8					
	0	9					
	0	10					

- d. Input the address, data type and comments in the Address cell of the monitoring table to facilitate monitoring. You can refer to the definition of the upstream and downstream process data, enter the data items in order, press the Enter key, and then click the  button to monitor the data after all the fields are filled in.

e. The module's uplink data is shown below in the monitoring table.

XB6-P04A ▶ PLC_1 [CPU 1214C D0D0D0] ▶ 监控与强制表 ▶ 监控表_1							
名称	地址	显示格式	监视值	给定值	注释	变量注释	
1	%I3.0	布尔型	FALSE		Ch1 Pulse Output Direction		
2	%I3.1	布尔型	FALSE		Ch1 Pulse Status Flag 1		
3	%I3.2	布尔型	FALSE		Ch1 Pulse Status Flag 2		
4	%I3.3	布尔型	FALSE		Ch1 Homing Mode Running		
5	%I3.4	布尔型	FALSE		Ch1 Position Mode Running		
6	%I3.5	布尔型	FALSE		Ch1 Velocity Mode Running		
7	%I3.6	布尔型	FALSE		Ch1 Homed		
8	%I3.7	布尔型	FALSE		Ch1 Location Arrival		
9	%I2.0	布尔型	FALSE		Ch1 Velocity Arrival		
10	%I2.1	布尔型	FALSE		Ch1 Positive Limit Signal		
11	%I2.2	布尔型	FALSE		Ch1 Negative Limit Signal		
12	%I2.3	布尔型	FALSE		Ch1 Home Signal		
13	%I2.4	布尔型	FALSE		Ch1 Brake Signal		
14	%I5.0	布尔型	FALSE		Ch2 Pulse Output Direction		
15	%I5.1	布尔型	FALSE		Ch2 Pulse Status Flag 1		
16	%I5.2	布尔型	FALSE		Ch2 Pulse Status Flag 2		
17	%I5.3	布尔型	FALSE		Ch2 Homing Mode Running		
18	%I5.4	布尔型	FALSE		Ch2 Position Mode Running		
19	%I5.5	布尔型	FALSE		Ch2 Velocity Mode Running		
20	%I5.6	布尔型	FALSE		Ch2 Homed		
21	%I5.7	布尔型	FALSE		Ch2 Location Arrival		
22	%I4.0	布尔型	FALSE		Ch2 Velocity Arrival		
23	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal		
24	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal		
25	%I4.3	布尔型	FALSE		Ch2 Home Signal		
26	%I4.4	布尔型	FALSE		Ch2 Brake Signal		
27	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction		
28	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1		
29	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2		
30	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running		
31	%I7.4	布尔型	FALSE		Ch3 Position Mode Running		
32	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running		
33	%I7.6	布尔型	FALSE		Ch3 Homed		
34	%I7.7	布尔型	FALSE		Ch3 Location Arrival		
35	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival		
36	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal		
37	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal		
38	%I6.3	布尔型	FALSE		Ch3 Home Signal		
39	%I6.4	布尔型	FALSE		Ch3 Brake Signal		
40	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction		
41	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1		
42	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2		
43	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running		
44	%I9.4	布尔型	FALSE		Ch4 Position Mode Running		
45	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running		
46	%I9.6	布尔型	FALSE		Ch4 Homed		
47	%I9.7	布尔型	FALSE		Ch4 Location Arrival		
48	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival		
49	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal		
50	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal		
51	%I8.3	布尔型	FALSE		Ch4 Home Signal		
52	%I8.4	布尔型	FALSE		Ch4 Brake Signal		
53	%IW10	十六进制	16#0601		Ch1 Error Code		
54	%IW12	十六进制	16#0601		Ch2 Error Code		
55	%IW14	十六进制	16#0601		Ch3 Error Code		
56	%IW16	十六进制	16#0601		Ch4 Error Code		
57	%ID18	带符号十进制	0		Ch1 Current Location		
58	%ID22	带符号十进制	0		Ch1 Current Velocity		
59	%ID26	带符号十进制	0		Ch2 Current Location		
60	%ID30	带符号十进制	0		Ch2 Current Velocity		
61	%ID34	带符号十进制	0		Ch3 Current Location		
62	%ID38	带符号十进制	0		Ch3 Current Velocity		
63	%ID42	带符号十进制	0		Ch4 Current Location		
64	%ID46	带符号十进制	0		Ch4 Current Velocity		

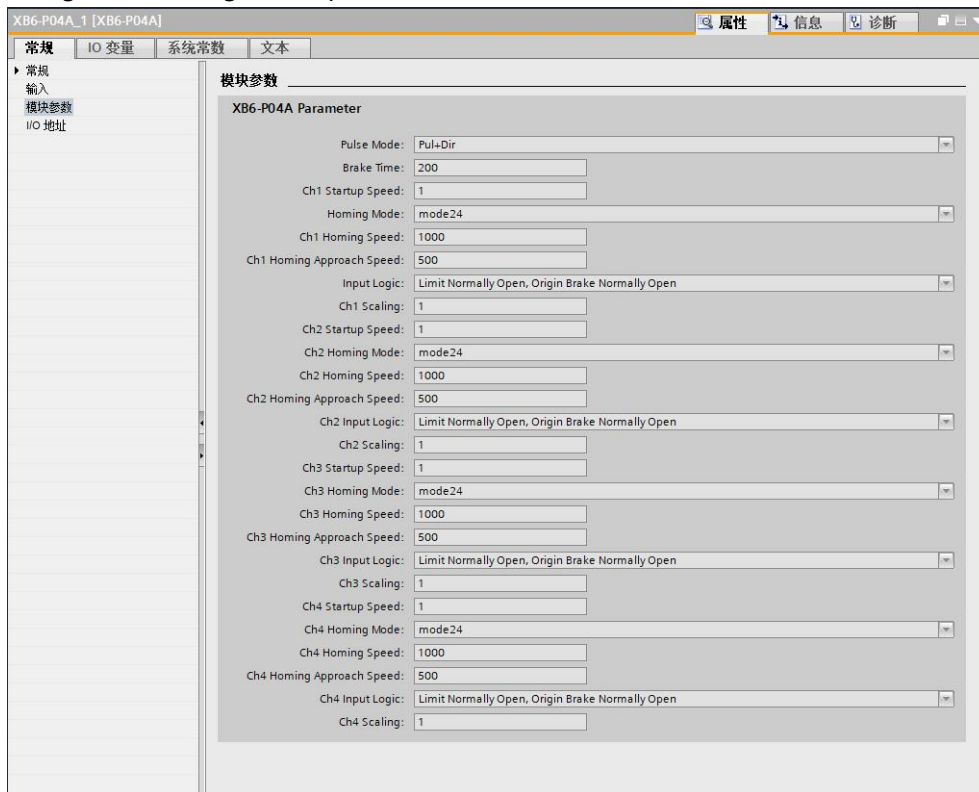
f. The downstream data of the module is shown below in the monitoring table.

XB6-P04A ▶ PLC_1 [CPU_1214C DC/DC/DC] ▶ 监控与强制表 ▶ 监控表_1								
	名称	地址	显示格式	监视值	修改值	注释	变量注释	
65		%Q5.0	布尔型	<input type="checkbox"/> FALSE			CH1 Running Direction	
66		%Q5.1	布尔型	<input type="checkbox"/> FALSE			CH1 Absolute/Relative Position Mode	
67		%Q5.2	布尔型	<input type="checkbox"/> FALSE			CH1 Position/Velocity Mode	
68		%Q5.3	布尔型	<input type="checkbox"/> FALSE			CH1 Reset Coordinates	
69		%Q5.4	布尔型	<input type="checkbox"/> FALSE			CH1 Start	
70		%Q5.5	布尔型	<input type="checkbox"/> FALSE			CH1 Brake	
71		%Q5.6	布尔型	<input type="checkbox"/> FALSE			CH1 Home	
72		%Q4.0	布尔型	<input type="checkbox"/> FALSE			CH2 Running Direction	
73		%Q4.1	布尔型	<input type="checkbox"/> FALSE			CH2 Absolute/Relative Position Mode	
74		%Q4.2	布尔型	<input type="checkbox"/> FALSE			CH2 Position/Velocity Mode	
75		%Q4.3	布尔型	<input type="checkbox"/> FALSE			CH2 Reset Coordinates	
76		%Q4.4	布尔型	<input type="checkbox"/> FALSE			CH2 Start	
77		%Q4.5	布尔型	<input type="checkbox"/> FALSE			CH2 Brake	
78		%Q4.6	布尔型	<input type="checkbox"/> FALSE			CH2 Home	
79		%Q3.0	布尔型	<input type="checkbox"/> FALSE			CH3 Running Direction	
80		%Q3.1	布尔型	<input type="checkbox"/> FALSE			CH3 Absolute/Relative Position Mode	
81		%Q3.2	布尔型	<input type="checkbox"/> FALSE			CH3 Position/Velocity Mode	
82		%Q3.3	布尔型	<input type="checkbox"/> FALSE			CH3 Reset Coordinates	
83		%Q3.4	布尔型	<input type="checkbox"/> FALSE			CH3 Start	
84		%Q3.5	布尔型	<input type="checkbox"/> FALSE			CH3 Brake	
85		%Q3.6	布尔型	<input type="checkbox"/> FALSE			CH3 Home	
86		%Q2.0	布尔型	<input type="checkbox"/> FALSE			CH4 Running Direction	
87		%Q2.1	布尔型	<input type="checkbox"/> FALSE			CH4 Absolute/Relative Position Mode	
88		%Q2.2	布尔型	<input type="checkbox"/> FALSE			CH4 Position/Velocity Mode	
89		%Q2.3	布尔型	<input type="checkbox"/> FALSE			CH4 Reset Coordinates	
90		%Q2.4	布尔型	<input type="checkbox"/> FALSE			CH4 Start	
91		%Q2.5	布尔型	<input type="checkbox"/> FALSE			CH4 Brake	
92		%Q2.6	布尔型	<input type="checkbox"/> FALSE			CH4 Home	
93		%QW6	无符号十进制	0			CH1 Acceleration Time	
94		%QW8	无符号十进制	0			CH1 Deceleration Time	
95		%QD10	无符号十进制	0			Ch1 Running Velocity	
96		%QD14	无符号十进制	0			Ch1 Running Position	
97		%QW18	无符号十进制	0			CH2 Acceleration Time	
98		%QW20	无符号十进制	0			CH2 Deceleration Time	
99		%QD22	无符号十进制	0			Ch2 Running Velocity	
100		%QD26	无符号十进制	0			Ch2 Running Position	
101		%QW30	无符号十进制	0			CH3 Acceleration Time	
102		%QW32	无符号十进制	0			CH3 Deceleration Time	
103		%QD34	无符号十进制	0			Ch3 Running Velocity	
104		%QD38	无符号十进制	0			Ch3 Running Position	
105		%QW42	无符号十进制	0			CH4 Acceleration Time	
106		%QW44	无符号十进制	0			CH4 Deceleration Time	
107		%QD46	无符号十进制	0			Ch4 Running Velocity	
108		%QD50	无符号十进制	0			Ch4 Running Position	

Examples of Module Functions

◆ Channel 1 runs 50,000 pulses in the forward direction at 100KHZ.

a. Configure the configuration parameters as shown below.



b. Sets channel 1 to relative position mode;

c. Configure channel 1 to run at 50000 steps and 100kHz;

d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

e. Set the start command for channel 1 from 0 to 1 as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%Q5.0	布尔型	FALSE		CH1 Running Direction	
	%Q5.1	布尔型	TRUE	TRUE	CH1 Absolute/Relative Position Mode	相对运动模式
	%Q5.2	布尔型	FALSE		CH1 Position/Velocity Mode	
	%Q5.3	布尔型	FALSE		CH1 Reset Coordinates	
	%Q5.4	布尔型	TRUE	TRUE	CH1 Start	启动命令从0到1 刹车指令为0
	%Q5.5	布尔型	FALSE		CH1 Brake	
	%Q5.6	布尔型	FALSE		CH1 Home	
	%Q4.0	布尔型	FALSE		CH2 Running Direction	
	%Q4.1	布尔型	FALSE		CH2 Absolute/Relative Position Mode	
	%Q4.2	布尔型	FALSE		CH2 Position/Velocity Mode	
	%Q4.3	布尔型	FALSE		CH2 Reset Coordinates	
	%Q4.4	布尔型	FALSE		CH2 Start	
	%Q4.5	布尔型	FALSE		CH2 Brake	
	%Q4.6	布尔型	FALSE		CH2 Home	
	%Q3.0	布尔型	FALSE		CH3 Running Direction	
	%Q3.1	布尔型	FALSE		CH3 Absolute/Relative Position Mode	
	%Q3.2	布尔型	FALSE		CH3 Position/Velocity Mode	
	%Q3.3	布尔型	FALSE		CH3 Reset Coordinates	
	%Q3.4	布尔型	FALSE		CH3 Start	
	%Q3.5	布尔型	FALSE		CH3 Brake	
	%Q3.6	布尔型	FALSE		CH3 Home	
	%Q2.0	布尔型	FALSE		CH4 Running Direction	
	%Q2.1	布尔型	FALSE		CH4 Absolute/Relative Position Mode	
	%Q2.2	布尔型	FALSE		CH4 Position/Velocity Mode	
	%Q2.3	布尔型	FALSE		CH4 Reset Coordinates	
	%Q2.4	布尔型	FALSE		CH4 Start	
	%Q2.5	布尔型	FALSE		CH4 Brake	
	%Q2.6	布尔型	FALSE		CH4 Home	
	%QW6	无符号十进制	500	500	CH1 Acceleration Time	
	%QW8	无符号十进制	500	500	CH1 Deceleration Time	
	%QD10	无符号十进制	100000	100000	Ch1 Running Velocity	运行速度100kHz
	%QD14	带符号十进制	50000	50000	Ch1 Running Position	运行步数50000
	%QW18	无符号十进制	0		CH2 Acceleration Time	
	%QW20	无符号十进制	0		CH2 Deceleration Time	
	%QD22	无符号十进制	0		Ch2 Running Velocity	
	%QD26	无符号十进制	0		Ch2 Running Position	
	%QW50	无符号十进制	0		CH3 Acceleration Time	
	%QW52	无符号十进制	0		CH3 Deceleration Time	
	%QD34	无符号十进制	0		Ch3 Running Velocity	
	%QD38	无符号十进制	0		Ch3 Running Position	

f. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.

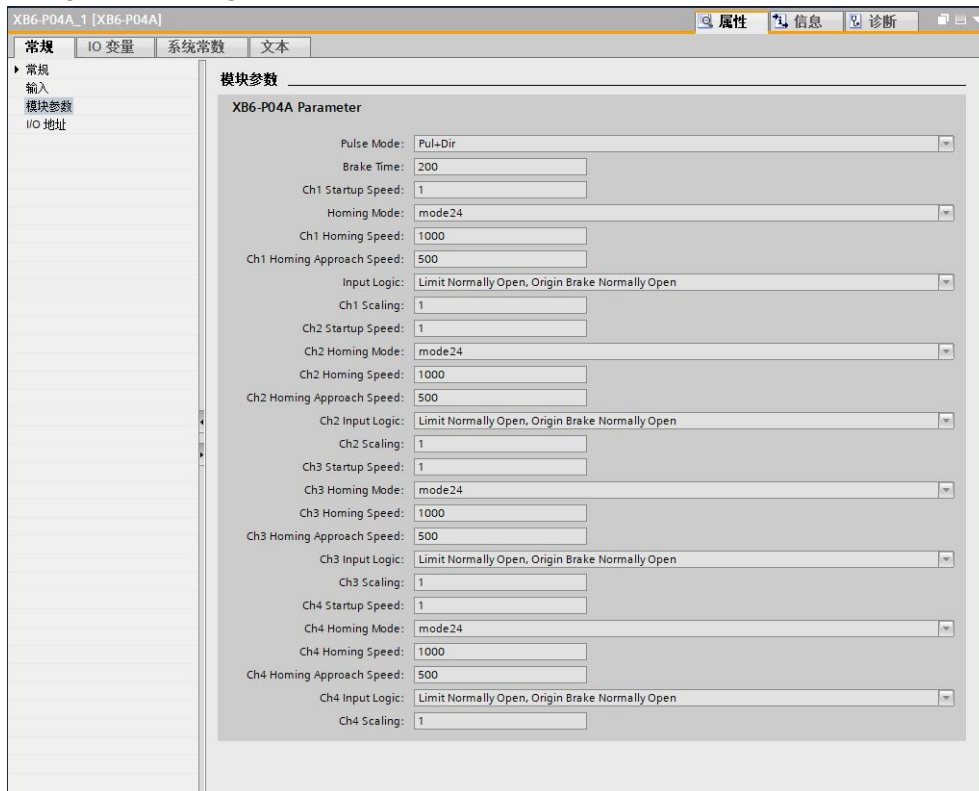
名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I3.0	布尔型	FALSE		Ch1 Pulse Output Direction	
	%I3.1	布尔型	FALSE		Ch1 Pulse Status Flag 1	
	%I3.2	布尔型	FALSE		Ch1 Pulse Status Flag 2	
	%I3.3	布尔型	FALSE		Ch1 Homing Mode Running	
	%I3.4	布尔型	FALSE		Ch1 Position Mode Running	
	%I3.5	布尔型	FALSE		Ch1 Velocity Mode Running	
	%I3.6	布尔型	FALSE		Ch1 Homed	
	%I3.7	布尔型	TRUE		Ch1 Location Arrival	
	%I2.0	布尔型	FALSE		Ch1 Velocity Arrival	
	%I2.1	布尔型	FALSE		Ch1 Positive Limit Signal	
	%I2.2	布尔型	FALSE		Ch1 Negative Limit Signal	
	%I2.3	布尔型	FALSE		Ch1 Home Signal	
	%I2.4	布尔型	FALSE		Ch1 Brake Signal	
	%I5.0	布尔型	FALSE		Ch2 Pulse Output Direction	
	%I5.1	布尔型	FALSE		Ch2 Pulse Status Flag 1	
	%I5.2	布尔型	FALSE		Ch2 Pulse Status Flag 2	
	%I5.3	布尔型	FALSE		Ch2 Homing Mode Running	
	%I5.4	布尔型	FALSE		Ch2 Position Mode Running	
	%I5.5	布尔型	FALSE		Ch2 Velocity Mode Running	
	%I5.6	布尔型	FALSE		Ch2 Homed	
	%I5.7	布尔型	FALSE		Ch2 Location Arrival	
	%I4.0	布尔型	FALSE		Ch2 Velocity Arrival	
	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	

g. You can also see that the current coordinates of channel 1 are 50000, as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	50000		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	
	%ID42	带符号十进制	0		Ch4 Current Location	
	%ID46	带符号十进制	0		Ch4 Current Velocity	

- ◆ **Channel 1 with a current position of 1000 moves to a position of -20,000 with a running speed of 100 kHz.**

a. Configure the configuration parameters as shown below.



b. The current position of channel 1 is 1000, as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.0	布尔型	FALSE		Ch2 Velocity Arrival	
	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	1000		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	

c. Sets channel 1 to absolute position mode;

d. Configure channel 1 to run at -20000 steps and 100kHz;

e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

f. Set the start command for channel 1 from 0 to 1 as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%Q5.0	布尔型	<input type="checkbox"/> FALSE		CH1 Running Direction	
	%Q5.1	布尔型	<input type="checkbox"/> FALSE	FALSE	CH1 Absolute/Relative Position Mode	绝对位置模式
	%Q5.2	布尔型	<input type="checkbox"/> FALSE		CH1 Position/Velocity Mode	
	%Q5.3	布尔型	<input type="checkbox"/> FALSE		CH1 Reset Coordinates	
	%Q5.4	布尔型	<input checked="" type="checkbox"/> TRUE	TRUE	CH1 Start	启动命令从0到1 刹车指令为0
	%Q5.5	布尔型	<input type="checkbox"/> FALSE		CH1 Brake	
	%Q5.6	布尔型	<input type="checkbox"/> FALSE		CH1 Home	
	%Q4.0	布尔型	<input type="checkbox"/> FALSE		CH2 Running Direction	
	%Q4.1	布尔型	<input type="checkbox"/> FALSE		CH2 Absolute/Relative Position Mode	
	%Q4.2	布尔型	<input type="checkbox"/> FALSE		CH2 Position/Velocity Mode	
	%Q4.3	布尔型	<input type="checkbox"/> FALSE		CH2 Reset Coordinates	
	%Q4.4	布尔型	<input type="checkbox"/> FALSE		CH2 Start	
	%Q4.5	布尔型	<input type="checkbox"/> FALSE		CH2 Brake	
	%Q4.6	布尔型	<input type="checkbox"/> FALSE		CH2 Home	
	%Q3.0	布尔型	<input type="checkbox"/> FALSE		CH3 Running Direction	
	%Q3.1	布尔型	<input type="checkbox"/> FALSE		CH3 Absolute/Relative Position Mode	
	%Q3.2	布尔型	<input type="checkbox"/> FALSE		CH3 Position/Velocity Mode	
	%Q3.3	布尔型	<input type="checkbox"/> FALSE		CH3 Reset Coordinates	
	%Q3.4	布尔型	<input type="checkbox"/> FALSE		CH3 Start	
	%Q3.5	布尔型	<input type="checkbox"/> FALSE		CH3 Brake	
	%Q3.6	布尔型	<input type="checkbox"/> FALSE		CH3 Home	
	%Q2.0	布尔型	<input type="checkbox"/> FALSE		CH4 Running Direction	
	%Q2.1	布尔型	<input type="checkbox"/> FALSE		CH4 Absolute/Relative Position Mode	
	%Q2.2	布尔型	<input type="checkbox"/> FALSE		CH4 Position/Velocity Mode	
	%Q2.3	布尔型	<input type="checkbox"/> FALSE		CH4 Reset Coordinates	
	%Q2.4	布尔型	<input type="checkbox"/> FALSE		CH4 Start	
	%Q2.5	布尔型	<input type="checkbox"/> FALSE		CH4 Brake	
	%Q2.6	布尔型	<input type="checkbox"/> FALSE		CH4 Home	
	%QW6	无符号十进制	500	500	CH1 Acceleration Time	
	%QW8	无符号十进制	500	500	CH1 Deceleration Time	
	%QD10	无符号十进制	100000	100000	Ch1 Running Velocity	运行速度100kHz
	%QD14	带符号十进制	-20000	-20000	CH1 Running Position	运行步数-20000
	%QW18	无符号十进制	0		CH2 Acceleration Time	
	%QW20	无符号十进制	0		CH2 Deceleration Time	
	%QD22	无符号十进制	0		Ch2 Running Velocity	
	%QD26	无符号十进制	0		Ch2 Running Position	
	%QW30	无符号十进制	0		CH3 Acceleration Time	
	%QW32	无符号十进制	0		CH3 Deceleration Time	
	%QD34	无符号十进制	0		Ch3 Running Velocity	
	%QD38	无符号十进制	0		Ch3 Running Position	

g. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.

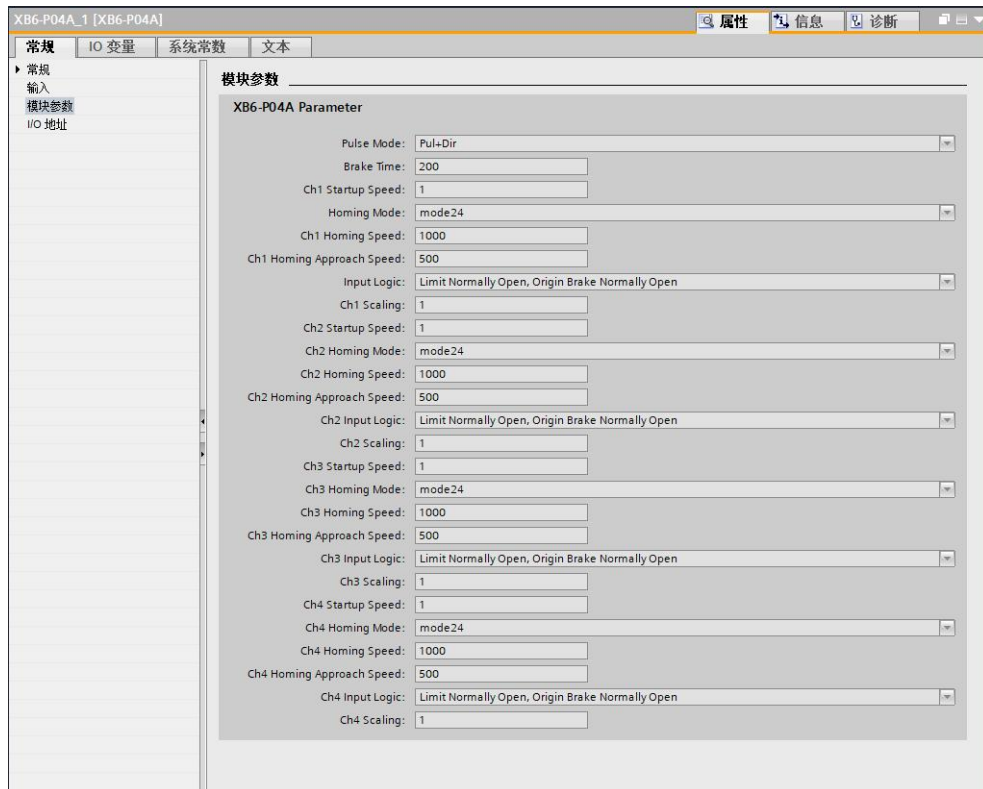
名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I3.0	布尔型	<input checked="" type="checkbox"/> TRUE		Ch1 Pulse Output Direction	
	%I3.1	布尔型	<input type="checkbox"/> FALSE		Ch1 Pulse Status Flag 1	
	%I3.2	布尔型	<input type="checkbox"/> FALSE		Ch1 Pulse Status Flag 2	
	%I3.3	布尔型	<input type="checkbox"/> FALSE		Ch1 Homing Mode Running	
	%I3.4	布尔型	<input type="checkbox"/> FALSE		Ch1 Position Mode Running	
	%I3.5	布尔型	<input type="checkbox"/> FALSE		Ch1 Velocity Mode Running	
	%I3.6	布尔型	<input type="checkbox"/> FALSE		Ch1 Homed	
	%I3.7	布尔型	<input checked="" type="checkbox"/> TRUE		Ch1 Location Arrival	
	%I2.0	布尔型	<input type="checkbox"/> FALSE		Ch1 Velocity Arrival	
	%I2.1	布尔型	<input type="checkbox"/> FALSE		Ch1 Positive Limit Signal	
	%I2.2	布尔型	<input type="checkbox"/> FALSE		Ch1 Negative Limit Signal	
	%I2.3	布尔型	<input type="checkbox"/> FALSE		Ch1 Home Signal	
	%I2.4	布尔型	<input type="checkbox"/> FALSE		Ch1 Brake Signal	
	%I5.0	布尔型	<input type="checkbox"/> FALSE		Ch2 Pulse Output Direction	
	%I5.1	布尔型	<input type="checkbox"/> FALSE		Ch2 Pulse Status Flag 1	
	%I5.2	布尔型	<input type="checkbox"/> FALSE		Ch2 Pulse Status Flag 2	
	%I5.3	布尔型	<input type="checkbox"/> FALSE		Ch2 Homing Mode Running	
	%I5.4	布尔型	<input type="checkbox"/> FALSE		Ch2 Position Mode Running	
	%I5.5	布尔型	<input type="checkbox"/> FALSE		Ch2 Velocity Mode Running	
	%I5.6	布尔型	<input type="checkbox"/> FALSE		Ch2 Homed	
	%I5.7	布尔型	<input type="checkbox"/> FALSE		Ch2 Location Arrival	
	%I4.0	布尔型	<input type="checkbox"/> FALSE		Ch2 Velocity Arrival	
	%I4.1	布尔型	<input type="checkbox"/> FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	<input type="checkbox"/> FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	<input type="checkbox"/> FALSE		Ch2 Home Signal	
	%I4.4	布尔型	<input type="checkbox"/> FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	<input type="checkbox"/> FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	<input type="checkbox"/> FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	<input type="checkbox"/> FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	<input type="checkbox"/> FALSE		Ch3 Homed	
	%I7.7	布尔型	<input type="checkbox"/> FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	<input type="checkbox"/> FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	<input type="checkbox"/> FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	<input type="checkbox"/> FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	<input type="checkbox"/> FALSE		Ch3 Home Signal	
	%I6.4	布尔型	<input type="checkbox"/> FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	<input type="checkbox"/> FALSE		Ch4 Pulse Output Direction	

h. You can also see that channel 1 has a current coordinate of -20000, as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.3	布尔型	<input type="checkbox"/> FALSE		Ch2 Home Signal	
	%I4.4	布尔型	<input type="checkbox"/> FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	<input type="checkbox"/> FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	<input type="checkbox"/> FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	<input type="checkbox"/> FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	<input type="checkbox"/> FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	<input type="checkbox"/> FALSE		Ch3 Homed	
	%I7.7	布尔型	<input type="checkbox"/> FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	<input type="checkbox"/> FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	<input type="checkbox"/> FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	<input type="checkbox"/> FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	<input type="checkbox"/> FALSE		Ch3 Home Signal	
	%I6.4	布尔型	<input type="checkbox"/> FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	<input type="checkbox"/> FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	<input type="checkbox"/> FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	<input type="checkbox"/> FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	<input type="checkbox"/> FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	<input type="checkbox"/> FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	<input type="checkbox"/> FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	<input type="checkbox"/> FALSE		Ch4 Homed	
	%I9.7	布尔型	<input type="checkbox"/> FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	<input type="checkbox"/> FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	<input type="checkbox"/> FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	<input type="checkbox"/> FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	<input type="checkbox"/> FALSE		Ch4 Home Signal	
	%I8.4	布尔型	<input type="checkbox"/> FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	-20000		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	
	%ID42	带符号十进制	0		Ch4 Current Location	
	%ID46	带符号十进制	0		Ch4 Current Velocity	

◆ Channel 1 turns on speed mode and runs at 100 kHz

a. Configure the configuration parameters as shown below.



b. Sets channel 1 to speed mode;

c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 positive;

d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

e. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%Q5.0	布尔型	<input type="checkbox"/> FALSE		CH1 Running Direction	运动方向为正转
	%Q5.1	布尔型	<input type="checkbox"/> FALSE	FALSE	CH1 Absolute/Relative Position Mode	
	%Q5.2	布尔型	<input checked="" type="checkbox"/> TRUE	TRUE	CH1 Position/Velocity Mode	速度模式
	%Q5.3	布尔型	<input type="checkbox"/> FALSE		CH1 Reset Coordinates	
	%Q5.4	布尔型	<input checked="" type="checkbox"/> TRUE	TRUE	CH1 Start	启动命令从0到1 刹车指令为0
	%Q5.5	布尔型	<input type="checkbox"/> FALSE		CH1 Brake	
	%Q5.6	布尔型	<input type="checkbox"/> FALSE		CH1 Home	
	%Q4.0	布尔型	<input type="checkbox"/> FALSE		CH2 Running Direction	
	%Q4.1	布尔型	<input type="checkbox"/> FALSE		CH2 Absolute/Relative Position Mode	
	%Q4.2	布尔型	<input type="checkbox"/> FALSE		CH2 Position/Velocity Mode	
	%Q4.3	布尔型	<input type="checkbox"/> FALSE		CH2 Reset Coordinates	
	%Q4.4	布尔型	<input type="checkbox"/> FALSE		CH2 Start	
	%Q4.5	布尔型	<input type="checkbox"/> FALSE		CH2 Brake	
	%Q4.6	布尔型	<input type="checkbox"/> FALSE		CH2 Home	
	%Q3.0	布尔型	<input type="checkbox"/> FALSE		CH3 Running Direction	
	%Q3.1	布尔型	<input type="checkbox"/> FALSE		CH3 Absolute/Relative Position Mode	
	%Q3.2	布尔型	<input type="checkbox"/> FALSE		CH3 Position/Velocity Mode	
	%Q3.3	布尔型	<input type="checkbox"/> FALSE		CH3 Reset Coordinates	
	%Q3.4	布尔型	<input type="checkbox"/> FALSE		CH3 Start	
	%Q3.5	布尔型	<input type="checkbox"/> FALSE		CH3 Brake	
	%Q3.6	布尔型	<input type="checkbox"/> FALSE		CH3 Home	
	%Q2.0	布尔型	<input type="checkbox"/> FALSE		CH4 Running Direction	
	%Q2.1	布尔型	<input type="checkbox"/> FALSE		CH4 Absolute/Relative Position Mode	
	%Q2.2	布尔型	<input type="checkbox"/> FALSE		CH4 Position/Velocity Mode	
	%Q2.3	布尔型	<input type="checkbox"/> FALSE		CH4 Reset Coordinates	
	%Q2.4	布尔型	<input type="checkbox"/> FALSE		CH4 Start	
	%Q2.5	布尔型	<input type="checkbox"/> FALSE		CH4 Brake	
	%Q2.6	布尔型	<input type="checkbox"/> FALSE		CH4 Home	
	%QW6	无符号十进制	500	500	CH1 Acceleration Time	
	%QW8	无符号十进制	500	500	CH1 Deceleration Time	
	%QD10	无符号十进制	100000	100000	Ch1 Running Velocity	运行速度100kHz
	%QD14	带符号十进制	0		Ch1 Running Position	
	%QW18	无符号十进制	0		CH2 Acceleration Time	
	%QW20	无符号十进制	0		CH2 Deceleration Time	
	%QD22	无符号十进制	0		Ch2 Running Velocity	
	%QD26	无符号十进制	0		Ch2 Running Position	
	%QW30	无符号十进制	0		CH3 Acceleration Time	
	%QW32	无符号十进制	0		CH3 Deceleration Time	
	%QD34	无符号十进制	0		Ch3 Running Velocity	
	%QD38	无符号十进制	0		Ch3 Running Position	

f. During the movement, you can see that the channel 1 velocity arrival is set to 1, as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I3.0	布尔型	FALSE		Ch1 Pulse Output Direction	
	%I3.1	布尔型	TRUE		Ch1 Pulse Status Flag 1	
	%I3.2	布尔型	TRUE		Ch1 Pulse Status Flag 2	
	%I3.3	布尔型	FALSE		Ch1 Homing Mode Running	
	%I3.4	布尔型	FALSE		Ch1 Position Mode Running	
	%I3.5	布尔型	TRUE		Ch1 Velocity Mode Running	
	%I3.6	布尔型	FALSE		Ch1 Homed	
	%I3.7	布尔型	FALSE		Ch1 Location Arrival	
	%I2.0	布尔型	TRUE		Ch1 Velocity Arrival	
	%I2.1	布尔型	FALSE		Ch1 Positive Limit Signal	
	%I2.2	布尔型	FALSE		Ch1 Negative Limit Signal	
	%I2.3	布尔型	FALSE		Ch1 Home Signal	
	%I2.4	布尔型	FALSE		Ch1 Brake Signal	
	%I5.0	布尔型	FALSE		Ch2 Pulse Output Direction	
	%I5.1	布尔型	FALSE		Ch2 Pulse Status Flag 1	
	%I5.2	布尔型	FALSE		Ch2 Pulse Status Flag 2	
	%I5.3	布尔型	FALSE		Ch2 Homing Mode Running	
	%I5.4	布尔型	FALSE		Ch2 Position Mode Running	
	%I5.5	布尔型	FALSE		Ch2 Velocity Mode Running	
	%I5.6	布尔型	FALSE		Ch2 Homed	
	%I5.7	布尔型	FALSE		Ch2 Location Arrival	
	%I4.0	布尔型	FALSE		Ch2 Velocity Arrival	
	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	

g. During the movement, it is also possible to currently run at the actual speed of 100 kHz, as shown in the following figure.

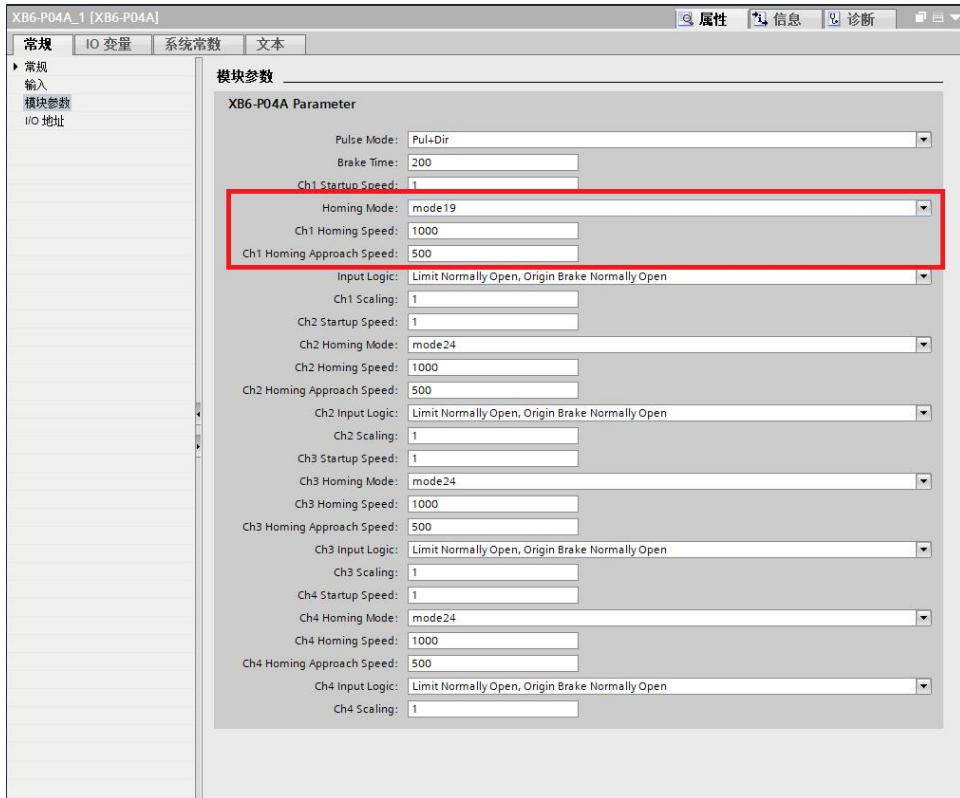
名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	5843255		Ch1 Current Location	
	%ID22	带符号十进制	100000		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	
	%ID42	带符号十进制	0		Ch4 Current Location	
	%ID46	带符号十进制	0		Ch4 Current Velocity	

- h. The movement can be stopped by inputting a brake command or triggering a positive limit signal, as shown in the figure below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	7889330		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	

◆ **Channel 1 on zero return**

- a. Configure the configuration parameters, select the zero return mode and set the zero return speed and zero approach speed as shown below.



- b. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- c. Set the zero return command for channel 1 from 0 to 1 as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
65	%Q5.0	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH1 Running Direction
66	%Q5.1	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH1 Absolute/Relative Position Mode
67	%Q5.2	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH1 Position/Velocity Mode
68	%Q5.3	布尔型	<input type="checkbox"/> FALSE	FALSE	<input checked="" type="checkbox"/> !	CH1 Reset Coordinates
69	%Q5.4	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH1 Start
70	%Q5.5	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH1 Brake
71	%Q5.6	布尔型	<input checked="" type="checkbox"/> TRUE	TRUE	<input checked="" type="checkbox"/> !	CH1 Home
72	%Q4.0	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Running Direction
73	%Q4.1	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Absolute/Relative Position Mode
74	%Q4.2	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Position/Velocity Mode
75	%Q4.3	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Reset Coordinates
76	%Q4.4	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Start
77	%Q4.5	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Brake
78	%Q4.6	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH2 Home
79	%Q3.0	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Running Direction
80	%Q3.1	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Absolute/Relative Position Mode
81	%Q3.2	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Position/Velocity Mode
82	%Q3.3	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Reset Coordinates
83	%Q3.4	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Start
84	%Q3.5	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Brake
85	%Q3.6	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH3 Home
86	%Q2.0	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Running Direction
87	%Q2.1	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Absolute/Relative Position Mode
88	%Q2.2	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Position/Velocity Mode
89	%Q2.3	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Reset Coordinates
90	%Q2.4	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Start
91	%Q2.5	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Brake
92	%Q2.6	布尔型	<input type="checkbox"/> FALSE		<input type="checkbox"/>	CH4 Home
93	%QW6	无符号十进制	500	500	<input checked="" type="checkbox"/> !	CH1 Acceleration Time
94	%QW8	无符号十进制	500	500	<input checked="" type="checkbox"/> !	CH1 Deceleration Time
95	%QD10	无符号十进制	10000	10000	<input checked="" type="checkbox"/> !	Ch1 Running Velocity
96	%QD14	带符号十进制	0		<input type="checkbox"/>	Ch1 Running Position
97	%QW18	无符号十进制	0		<input type="checkbox"/>	CH2 Acceleration Time
98	%QW20	无符号十进制	0		<input type="checkbox"/>	CH2 Deceleration Time
99	%QD22	无符号十进制	0		<input type="checkbox"/>	CH2 Running Velocity
100	%QD26	无符号十进制	0		<input type="checkbox"/>	CH2 Running Position
101	%QW30	无符号十进制	0		<input type="checkbox"/>	CH3 Acceleration Time
102	%QW32	无符号十进制	0		<input type="checkbox"/>	CH3 Deceleration Time
103	%QD34	无符号十进制	0		<input type="checkbox"/>	CH3 Running Velocity
104	%QD38	无符号十进制	0		<input type="checkbox"/>	CH3 Running Position

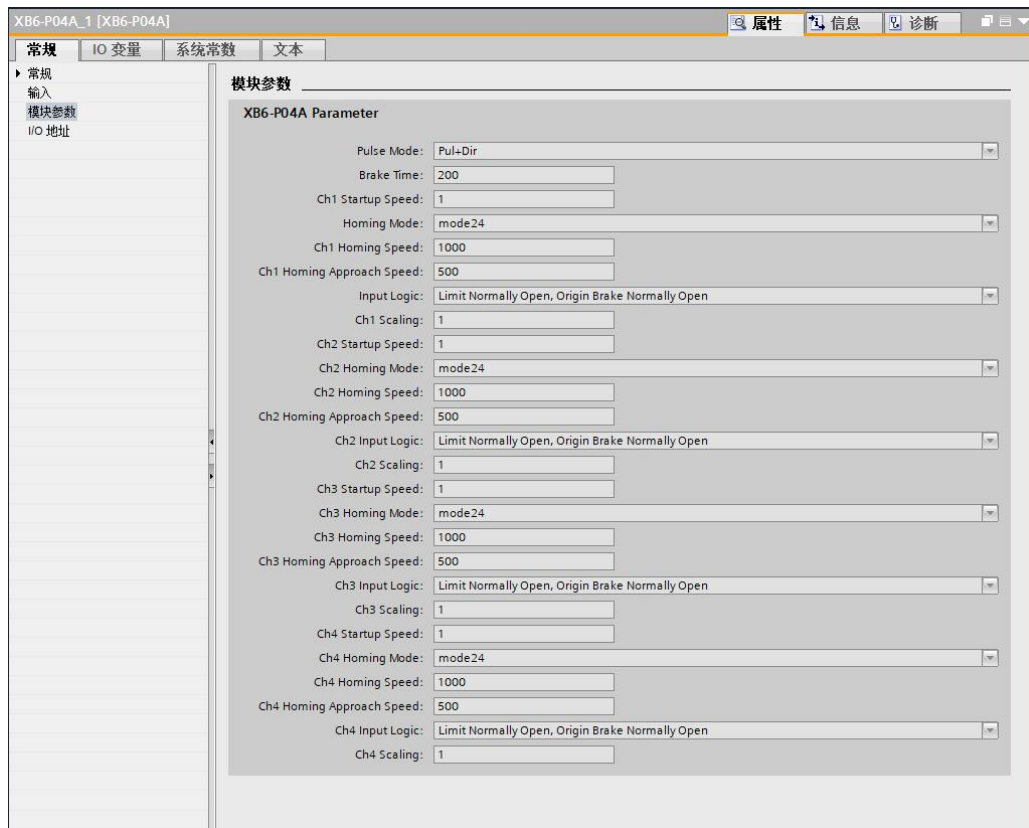
刹车指令为0
回零指令从0到1

- d. Back to zero mode 19 need to input the origin signal, after inputting the origin signal, decelerate to 0, and then again to return to zero close to the speed of the negative direction of movement, until the origin signal disappears, stop the movement back to zero is complete, you can see the channel 1 coordinates are cleared to zero, the completion of the return to zero is set to 1, as shown in the figure below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%3.3	布尔型	FALSE		Ch1 Homing Mode Running	
	%3.4	布尔型	FALSE		Ch1 Position Mode Running	
	%3.5	布尔型	FALSE		Ch1 Velocity Mode Running	
	%3.6	布尔型	TRUE		Ch1 Homed	
	%3.7	布尔型	FALSE		Ch1 Location Arrival	
	%2.0	布尔型	FALSE		Ch1 Velocity Arrival	
	%2.1	布尔型	FALSE		Ch1 Positive Limit Signal	
	%2.2	布尔型	FALSE		Ch1 Negative Limit Signal	
	%2.3	布尔型	FALSE		Ch1 Home Signal	
	%2.4	布尔型	FALSE		Ch1 Brake Signal	
	%5.0	布尔型	FALSE		Ch2 Pulse Output Direction	
	%5.1	布尔型	FALSE		Ch2 Pulse Status Flag 1	
	%5.2	布尔型	FALSE		Ch2 Pulse Status Flag 2	
	%5.3	布尔型	FALSE		Ch2 Homing Mode Running	
	%5.4	布尔型	FALSE		Ch2 Position Mode Running	
	%5.5	布尔型	FALSE		Ch2 Velocity Mode Running	
	%5.6	布尔型	FALSE		Ch2 Homed	
	%5.7	布尔型	FALSE		Ch2 Location Arrival	
	%4.0	布尔型	FALSE		Ch2 Velocity Arrival	
	%4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%4.3	布尔型	FALSE		Ch2 Home Signal	
	%4.4	布尔型	FALSE		Ch2 Brake Signal	
	%7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%7.6	布尔型	FALSE		Ch3 Homed	
	%7.7	布尔型	FALSE		Ch3 Location Arrival	
	%6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%6.3	布尔型	FALSE		Ch3 Home Signal	
	%6.4	布尔型	FALSE		Ch3 Brake Signal	
	%9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%9.6	布尔型	FALSE		Ch4 Homed	
	%9.7	布尔型	FALSE		Ch4 Location Arrival	
	%8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%8.3	布尔型	FALSE		Ch4 Home Signal	
	%8.4	布尔型	FALSE		Ch4 Brake Signal	
	%W10	十六进制	16#0000		Ch1 Error Code	
	%W12	十六进制	16#0601		Ch2 Error Code	
	%W14	十六进制	16#0601		Ch3 Error Code	
	%W16	十六进制	16#0601		Ch4 Error Code	
	%D18	带符号十进制	0		Ch1 Current Location	
	%D22	带符号十进制	0		Ch1 Current Velocity	
	%D26	带符号十进制	0		Ch2 Current Location	
	%D30	带符号十进制	0		Ch2 Current Velocity	
	%D34	带符号十进制	0		Ch3 Current Location	
	%D38	带符号十进制	0		Ch3 Current Velocity	
	%D42	带符号十进制	0		Ch4 Current Location	
	%D46	带符号十进制	0		Ch4 Current Velocity	

◆ **Channel 1 turns on speed mode, running at 100 kHz, with the speed modified to 10 kHz during operation**

a. Configure the configuration parameters as shown below.



b. Sets channel 1 to speed mode;

c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 forward;

d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;

e. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
65	%Q5.0	布尔型	FALSE		CH1 Running Direction	运动方向为正转
66	%Q5.1	布尔型	FALSE	FALSE	CH1 Absolute/Relative Position Mode	
67	%Q5.2	布尔型	TRUE	TRUE	CH1 Position/Velocity Mode	速度模式
68	%Q5.3	布尔型	FALSE		CH1 Reset Coordinates	
69	%Q5.4	布尔型	TRUE	TRUE	CH1 Start	启动命令从0到1 刹车指令为0
70	%Q5.5	布尔型	FALSE		CH1 Brake	
71	%Q5.6	布尔型	FALSE		CH1 Home	
72	%Q4.0	布尔型	FALSE		CH2 Running Direction	
73	%Q4.1	布尔型	FALSE		CH2 Absolute/Relative Position Mode	
74	%Q4.2	布尔型	FALSE		CH2 Position/Velocity Mode	
75	%Q4.3	布尔型	FALSE		CH2 Reset Coordinates	
76	%Q4.4	布尔型	FALSE		CH2 Start	
77	%Q4.5	布尔型	FALSE		CH2 Brake	
78	%Q4.6	布尔型	FALSE		CH2 Home	
79	%Q3.0	布尔型	FALSE		CH3 Running Direction	
80	%Q3.1	布尔型	FALSE		CH3 Absolute/Relative Position Mode	
81	%Q3.2	布尔型	FALSE		CH3 Position/Velocity Mode	
82	%Q3.3	布尔型	FALSE		CH3 Reset Coordinates	
83	%Q3.4	布尔型	FALSE		CH3 Start	
84	%Q3.5	布尔型	FALSE		CH3 Brake	
85	%Q3.6	布尔型	FALSE		CH3 Home	
86	%Q2.0	布尔型	FALSE		CH4 Running Direction	
87	%Q2.1	布尔型	FALSE		CH4 Absolute/Relative Position Mode	
88	%Q2.2	布尔型	FALSE		CH4 Position/Velocity Mode	
89	%Q2.3	布尔型	FALSE		CH4 Reset Coordinates	
90	%Q2.4	布尔型	FALSE		CH4 Start	
91	%Q2.5	布尔型	FALSE		CH4 Brake	
92	%Q2.6	布尔型	FALSE		CH4 Home	
93	%QW6	无符号十进制	500	500	CH1 Acceleration Time	
94	%QW8	无符号十进制	500	500	CH1 Deceleration Time	
95	%QD10	无符号十进制	100000	100000	Ch1 Running Velocity	运行速度100kHz
96	%QD14	带符号十进制	0		Ch1 Running Position	
97	%QW18	无符号十进制	0		CH2 Acceleration Time	
98	%QW20	无符号十进制	0		CH2 Deceleration Time	
99	%QD22	无符号十进制	0		Ch2 Running Velocity	
100	%QD26	无符号十进制	0		Ch2 Running Position	
101	%QW30	无符号十进制	0		CH3 Acceleration Time	
102	%QW32	无符号十进制	0		CH3 Deceleration Time	
103	%QD34	无符号十进制	0		Ch3 Running Velocity	
104	%QD38	无符号十进制	0		Ch3 Running Position	

- f. Modify channel 1 to run at 10 kHz during motion;
- g. Reset the start command of channel 1 from 0 to 1 to start the motion merge as shown below.

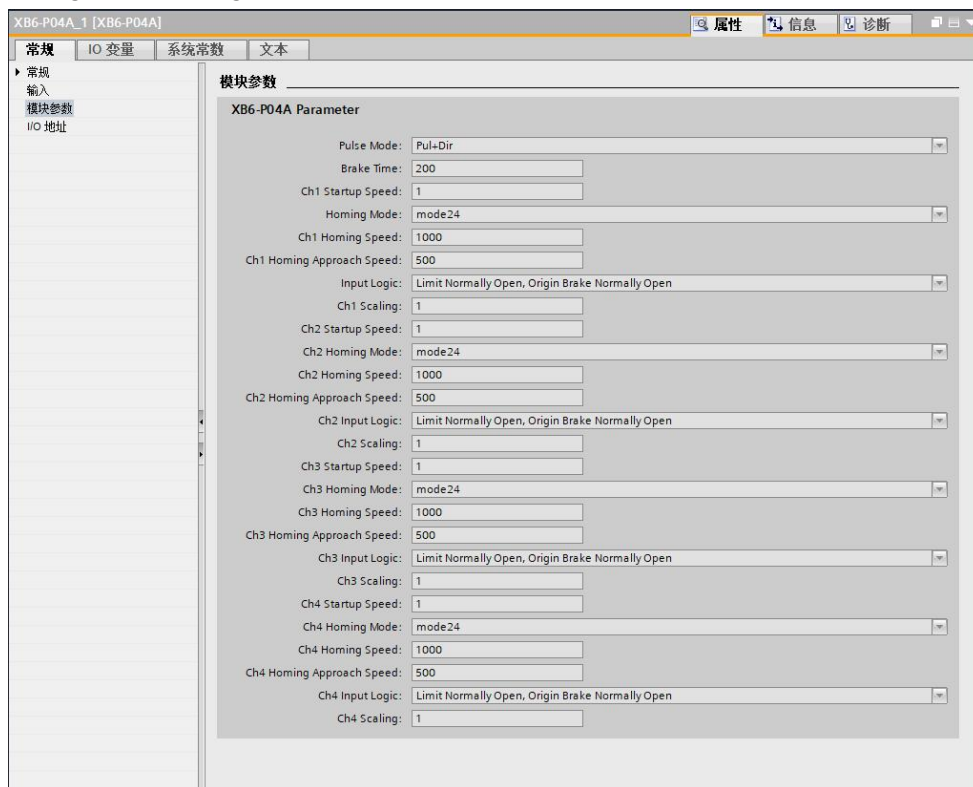
名称	地址	显示格式	监视值	修改值	注释
%Q5.0	%Q5.0	布尔型	FALSE		CH1 Running Direction
%Q5.1	%Q5.1	布尔型	FALSE	FALSE	CH1 Absolute/Relative Position Mode
%Q5.2	%Q5.2	布尔型	TRUE	TRUE	CH1 Position/Velocity Mode
%Q5.3	%Q5.3	布尔型	FALSE		CH1 Reset Coordinates
%Q5.4	%Q5.4	布尔型	TRUE	TRUE	CH1 Start
%Q5.5	%Q5.5	布尔型	FALSE		CH1 Brake
%Q5.6	%Q5.6	布尔型	FALSE		CH1 Home
%Q4.0	%Q4.0	布尔型	FALSE		CH2 Running Direction
%Q4.1	%Q4.1	布尔型	FALSE		CH2 Absolute/Relative Position Mode
%Q4.2	%Q4.2	布尔型	FALSE		CH2 Position/Velocity Mode
%Q4.3	%Q4.3	布尔型	FALSE		CH2 Reset Coordinates
%Q4.4	%Q4.4	布尔型	FALSE		CH2 Start
%Q4.5	%Q4.5	布尔型	FALSE		CH2 Brake
%Q4.6	%Q4.6	布尔型	FALSE		CH2 Home
%Q3.0	%Q3.0	布尔型	FALSE		CH3 Running Direction
%Q3.1	%Q3.1	布尔型	FALSE		CH3 Absolute/Relative Position Mode
%Q3.2	%Q3.2	布尔型	FALSE		CH3 Position/Velocity Mode
%Q3.3	%Q3.3	布尔型	FALSE		CH3 Reset Coordinates
%Q3.4	%Q3.4	布尔型	FALSE		CH3 Start
%Q3.5	%Q3.5	布尔型	FALSE		CH3 Brake
%Q3.6	%Q3.6	布尔型	FALSE		CH3 Home
%Q2.0	%Q2.0	布尔型	FALSE		CH4 Running Direction
%Q2.1	%Q2.1	布尔型	FALSE		CH4 Absolute/Relative Position Mode
%Q2.2	%Q2.2	布尔型	FALSE		CH4 Position/Velocity Mode
%Q2.3	%Q2.3	布尔型	FALSE		CH4 Reset Coordinates
%Q2.4	%Q2.4	布尔型	FALSE		CH4 Start
%Q2.5	%Q2.5	布尔型	FALSE		CH4 Brake
%Q2.6	%Q2.6	布尔型	FALSE		CH4 Home
%QW5	%QW5	无符号十进制	500	500	CH1 Acceleration Time
%QW8	%QW8	无符号十进制	500	500	CH1 Deceleration Time
%QD10	%QD10	无符号十进制	10000	10000	CH1 Running Velocity
%QD14	%QD14	带符号十进制	0		CH1 Running Position
%QW18	%QW18	无符号十进制	0		CH2 Acceleration Time
%QW20	%QW20	无符号十进制	0		CH2 Deceleration Time
%QD22	%QD22	无符号十进制	0		CH2 Running Velocity
%QD26	%QD26	无符号十进制	0		CH2 Running Position
%QW30	%QW30	无符号十进制	0		CH3 Acceleration Time
%QW32	%QW32	无符号十进制	0		CH3 Deceleration Time
%QD34	%QD34	无符号十进制	0		CH3 Running Velocity
%QD38	%QD38	无符号十进制	0		CH3 Running Position

- h. Channel 1 can be seen decelerating to 10kHz motion as shown below.

名称	地址	显示格式	监视值	修改值	注释
%I4.1	%I4.1	布尔型	FALSE		CH2 Positive Limit Signal
%I4.2	%I4.2	布尔型	FALSE		CH2 Negative Limit Signal
%I4.3	%I4.3	布尔型	FALSE		CH2 Home Signal
%I4.4	%I4.4	布尔型	FALSE		CH2 Brake Signal
%I7.0	%I7.0	布尔型	FALSE		CH3 Pulse Output Direction
%I7.1	%I7.1	布尔型	FALSE		CH3 Pulse Status Flag 1
%I7.2	%I7.2	布尔型	FALSE		CH3 Pulse Status Flag 2
%I7.3	%I7.3	布尔型	FALSE		CH3 Homing Mode Running
%I7.4	%I7.4	布尔型	FALSE		CH3 Position Mode Running
%I7.5	%I7.5	布尔型	FALSE		CH3 Velocity Mode Running
%I7.6	%I7.6	布尔型	FALSE		CH3 Homed
%I7.7	%I7.7	布尔型	FALSE		CH3 Location Arrival
%I6.0	%I6.0	布尔型	FALSE		CH3 Velocity Arrival
%I6.1	%I6.1	布尔型	FALSE		CH3 Positive Limit Signal
%I6.2	%I6.2	布尔型	FALSE		CH3 Negative Limit Signal
%I6.3	%I6.3	布尔型	FALSE		CH3 Home Signal
%I6.4	%I6.4	布尔型	FALSE		CH3 Brake Signal
%I9.0	%I9.0	布尔型	FALSE		CH4 Pulse Output Direction
%I9.1	%I9.1	布尔型	FALSE		CH4 Pulse Status Flag 1
%I9.2	%I9.2	布尔型	FALSE		CH4 Pulse Status Flag 2
%I9.3	%I9.3	布尔型	FALSE		CH4 Homing Mode Running
%I9.4	%I9.4	布尔型	FALSE		CH4 Position Mode Running
%I9.5	%I9.5	布尔型	FALSE		CH4 Velocity Mode Running
%I9.6	%I9.6	布尔型	FALSE		CH4 Homed
%I9.7	%I9.7	布尔型	FALSE		CH4 Location Arrival
%I8.0	%I8.0	布尔型	FALSE		CH4 Velocity Arrival
%I8.1	%I8.1	布尔型	FALSE		CH4 Positive Limit Signal
%I8.2	%I8.2	布尔型	FALSE		CH4 Negative Limit Signal
%I8.3	%I8.3	布尔型	FALSE		CH4 Home Signal
%I8.4	%I8.4	布尔型	FALSE		CH4 Brake Signal
%IW10	%IW10	十六进制	16#0000		CH1 Error Code
%IW12	%IW12	十六进制	16#0601		CH2 Error Code
%IW14	%IW14	十六进制	16#0601		CH3 Error Code
%IW16	%IW16	十六进制	16#0601		CH4 Error Code
%ID18	%ID18	带符号十进制	12811956		CH1 Current Location
%ID22	%ID22	带符号十进制	10000		CH1 Current Velocity
%ID26	%ID26	带符号十进制	0		CH2 Current Location
%ID30	%ID30	带符号十进制	0		CH2 Current Velocity
%ID34	%ID34	带符号十进制	0		CH3 Current Location
%ID38	%ID38	带符号十进制	0		CH3 Current Velocity

- ◆ **The current position of channel 1 is 10000, move to the position of 20000, and modify the position to 50000 during the movement.**

a. Configure the configuration parameters as shown below.



b. The current position of channel 1 is 10000, as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	10000		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	
	%ID42	带符号十进制	0		Ch4 Current Location	
	%ID46	带符号十进制	0		Ch4 Current Velocity	

- c. Sets channel 1 to absolute position mode;
- d. Configure channel 1 to run at 20000 steps and 1kHz;
- e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- f. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.

名称	地址	显示格式	当前值	修改值	注释	变量注释
	%Q5.0	布尔型	<input type="checkbox"/> FALSE			
	%Q5.1	布尔型	<input type="checkbox"/> FALSE	FALSE	<input checked="" type="checkbox"/> !	绝对位置模式
	%Q5.2	布尔型	<input type="checkbox"/> FALSE			
	%Q5.3	布尔型	<input type="checkbox"/> FALSE			
	%Q5.4	布尔型	<input checked="" type="checkbox"/> TRUE	TRUE	<input checked="" type="checkbox"/> !	启动命令从0到1 刹车指令为0
	%Q5.5	布尔型	<input type="checkbox"/> FALSE			
	%Q5.6	布尔型	<input type="checkbox"/> FALSE			
	%Q4.0	布尔型	<input type="checkbox"/> FALSE			
	%Q4.1	布尔型	<input type="checkbox"/> FALSE			
	%Q4.2	布尔型	<input type="checkbox"/> FALSE			
	%Q4.3	布尔型	<input type="checkbox"/> FALSE			
	%Q4.4	布尔型	<input type="checkbox"/> FALSE			
	%Q4.5	布尔型	<input type="checkbox"/> FALSE			
	%Q4.6	布尔型	<input type="checkbox"/> FALSE			
	%Q3.0	布尔型	<input type="checkbox"/> FALSE			
	%Q3.1	布尔型	<input type="checkbox"/> FALSE			
	%Q3.2	布尔型	<input type="checkbox"/> FALSE			
	%Q3.3	布尔型	<input type="checkbox"/> FALSE			
	%Q3.4	布尔型	<input type="checkbox"/> FALSE			
	%Q3.5	布尔型	<input type="checkbox"/> FALSE			
	%Q3.6	布尔型	<input type="checkbox"/> FALSE			
	%Q2.0	布尔型	<input type="checkbox"/> FALSE			
	%Q2.1	布尔型	<input type="checkbox"/> FALSE			
	%Q2.2	布尔型	<input type="checkbox"/> FALSE			
	%Q2.3	布尔型	<input type="checkbox"/> FALSE			
	%Q2.4	布尔型	<input type="checkbox"/> FALSE			
	%Q2.5	布尔型	<input type="checkbox"/> FALSE			
	%Q2.6	布尔型	<input type="checkbox"/> FALSE			
	%QW6	无符号十进制	500	500	<input checked="" type="checkbox"/> !	CH1 Acceleration Time
	%QW8	无符号十进制	500	500	<input checked="" type="checkbox"/> !	CH1 Deceleration Time
	%QD10	无符号十进制	1000	1000	<input checked="" type="checkbox"/> !	Ch1 Running Velocity
	%QD14	带符号十进制	20000	20000	<input checked="" type="checkbox"/> !	运行速度1kHz 运行步数20000
	%QW18	无符号十进制	0			CH2 Acceleration Time
	%QW20	无符号十进制	0			CH2 Deceleration Time
	%QD22	无符号十进制	0			Ch2 Running Velocity
	%QD26	无符号十进制	0			Ch2 Running Position
	%QW30	无符号十进制	0			CH3 Acceleration Time
	%QW32	无符号十进制	0			CH3 Deceleration Time
	%QD34	无符号十进制	0			Ch3 Running Velocity
	%QD38	无符号十进制	0			Ch3 Running Position

- g. During exercise, modify the channel 1 running step count to 50,000;
- h. Re-set the start command of channel 1 from 0 to 1 to start the motion merge as shown below.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%Q5.0	布尔型	FALSE		CH1 Running Direction	
	%Q5.1	布尔型	FALSE	FALSE	CH1 Absolute/Relative Position Mode	
	%Q5.2	布尔型	FALSE		CH1 Position/Velocity Mode	
	%Q5.3	布尔型	FALSE		CH1 Reset Coordinates	
	%Q5.4	布尔型	TRUE	TRUE	CH1 Start	启动命令重新置0再置1
	%Q5.5	布尔型	FALSE		CH1 Brake	
	%Q5.6	布尔型	FALSE		CH1 Home	
	%Q4.0	布尔型	FALSE		CH2 Running Direction	
	%Q4.1	布尔型	FALSE		CH2 Absolute/Relative Position Mode	
	%Q4.2	布尔型	FALSE		CH2 Position/Velocity Mode	
	%Q4.3	布尔型	FALSE		CH2 Reset Coordinates	
	%Q4.4	布尔型	FALSE		CH2 Start	
	%Q4.5	布尔型	FALSE		CH2 Brake	
	%Q4.6	布尔型	FALSE		CH2 Home	
	%Q3.0	布尔型	FALSE		CH3 Running Direction	
	%Q3.1	布尔型	FALSE		CH3 Absolute/Relative Position Mode	
	%Q3.2	布尔型	FALSE		CH3 Position/Velocity Mode	
	%Q3.3	布尔型	FALSE		CH3 Reset Coordinates	
	%Q3.4	布尔型	FALSE		CH3 Start	
	%Q3.5	布尔型	FALSE		CH3 Brake	
	%Q3.6	布尔型	FALSE		CH3 Home	
	%Q2.0	布尔型	FALSE		CH4 Running Direction	
	%Q2.1	布尔型	FALSE		CH4 Absolute/Relative Position Mode	
	%Q2.2	布尔型	FALSE		CH4 Position/Velocity Mode	
	%Q2.3	布尔型	FALSE		CH4 Reset Coordinates	
	%Q2.4	布尔型	FALSE		CH4 Start	
	%Q2.5	布尔型	FALSE		CH4 Brake	
	%Q2.6	布尔型	FALSE		CH4 Home	
	%QW6	无符号十进制	500	500	CH1 Acceleration Time	
	%QW8	无符号十进制	500	500	CH1 Deceleration Time	
	%QD10	无符号十进制	1000	1000	Ch1 Running Velocity	
	%QD14	带符号十进制	50000	50000	Ch1 Running Position	运行步数50000
	%QW18	无符号十进制	0		CH2 Acceleration Time	
	%QW20	无符号十进制	0		CH2 Deceleration Time	
	%QD22	无符号十进制	0		Ch2 Running Velocity	
	%QD26	无符号十进制	0		Ch2 Running Position	
	%QW30	无符号十进制	0		CH3 Acceleration Time	
	%QW32	无符号十进制	0		CH3 Deceleration Time	
	%QD34	无符号十进制	0		Ch3 Running Velocity	
	%QD38	无符号十进制	0		Ch3 Running Position	

- i. After the movement, you can see that the current coordinates of channel 1 are 50000, as shown in the following figure.

名称	地址	显示格式	监视值	修改值	注释	变量注释
	%I4.1	布尔型	FALSE		Ch2 Positive Limit Signal	
	%I4.2	布尔型	FALSE		Ch2 Negative Limit Signal	
	%I4.3	布尔型	FALSE		Ch2 Home Signal	
	%I4.4	布尔型	FALSE		Ch2 Brake Signal	
	%I7.0	布尔型	FALSE		Ch3 Pulse Output Direction	
	%I7.1	布尔型	FALSE		Ch3 Pulse Status Flag 1	
	%I7.2	布尔型	FALSE		Ch3 Pulse Status Flag 2	
	%I7.3	布尔型	FALSE		Ch3 Homing Mode Running	
	%I7.4	布尔型	FALSE		Ch3 Position Mode Running	
	%I7.5	布尔型	FALSE		Ch3 Velocity Mode Running	
	%I7.6	布尔型	FALSE		Ch3 Homed	
	%I7.7	布尔型	FALSE		Ch3 Location Arrival	
	%I6.0	布尔型	FALSE		Ch3 Velocity Arrival	
	%I6.1	布尔型	FALSE		Ch3 Positive Limit Signal	
	%I6.2	布尔型	FALSE		Ch3 Negative Limit Signal	
	%I6.3	布尔型	FALSE		Ch3 Home Signal	
	%I6.4	布尔型	FALSE		Ch3 Brake Signal	
	%I9.0	布尔型	FALSE		Ch4 Pulse Output Direction	
	%I9.1	布尔型	FALSE		Ch4 Pulse Status Flag 1	
	%I9.2	布尔型	FALSE		Ch4 Pulse Status Flag 2	
	%I9.3	布尔型	FALSE		Ch4 Homing Mode Running	
	%I9.4	布尔型	FALSE		Ch4 Position Mode Running	
	%I9.5	布尔型	FALSE		Ch4 Velocity Mode Running	
	%I9.6	布尔型	FALSE		Ch4 Homed	
	%I9.7	布尔型	FALSE		Ch4 Location Arrival	
	%I8.0	布尔型	FALSE		Ch4 Velocity Arrival	
	%I8.1	布尔型	FALSE		Ch4 Positive Limit Signal	
	%I8.2	布尔型	FALSE		Ch4 Negative Limit Signal	
	%I8.3	布尔型	FALSE		Ch4 Home Signal	
	%I8.4	布尔型	FALSE		Ch4 Brake Signal	
	%IW10	十六进制	16#0000		Ch1 Error Code	
	%IW12	十六进制	16#0601		Ch2 Error Code	
	%IW14	十六进制	16#0601		Ch3 Error Code	
	%IW16	十六进制	16#0601		Ch4 Error Code	
	%ID18	带符号十进制	50000		Ch1 Current Location	
	%ID22	带符号十进制	0		Ch1 Current Velocity	
	%ID26	带符号十进制	0		Ch2 Current Location	
	%ID30	带符号十进制	0		Ch2 Current Velocity	
	%ID34	带符号十进制	0		Ch3 Current Location	
	%ID38	带符号十进制	0		Ch3 Current Velocity	

6.4.2 Application in GX Works3 software environment

1、Preliminary

- hardware environment

- **Module Model XB6-P04A**
- **Power Module, CC-Link IE Field Basic Coupler, End Cap**
This description takes the XB6-P2000H power supply, XB6-CB0002 coupler as an example
- **One computer, pre-installed with GX Works3 software**
- **Shielded cable for CC-Link IE Field Basic**
- **Motor drives, stepper/servo motors and other equipment**
- **One Mitsubishi PLC, this description takes R04ENCPU as an example**
- **One switching power supply**
- **Module mounting rails and rail mounts**
- **Device Configuration Files**

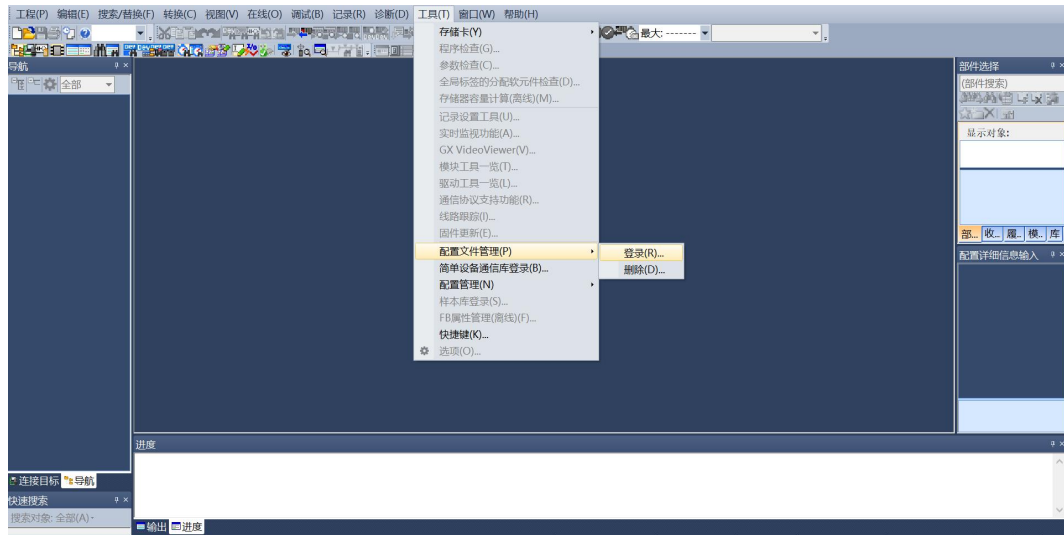
Configuration file to get the address: <https://www.solidotech.com/documents/configfile>

- Hardware configuration and wiring

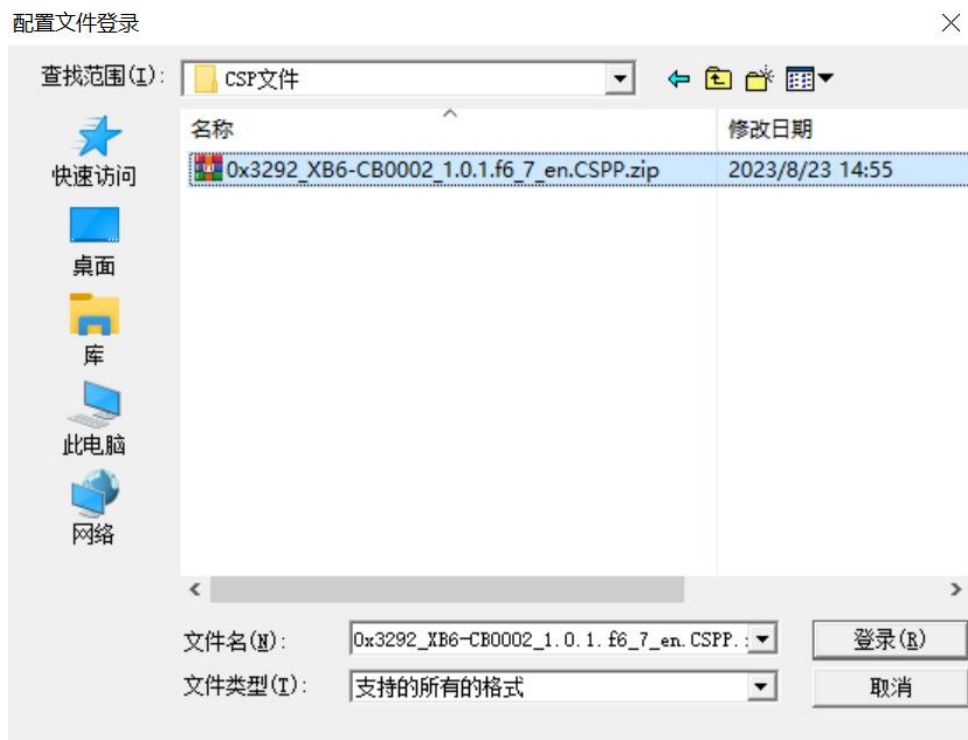
Please follow " [4 Mounting and dismounting](#) " " [5 Wiring](#) " " [5 Wiring](#) "

2、Installation of CSP files

- Open GX Work3 software, click "Tools" in the menu bar, and then click "Profile Management -> Login", as shown in the following figure.



- b. In the pop-up box, select the CSP file you want to add and click "Login" to complete the installation, as shown below.



Note: The configuration file does not need to be unpacked and the project needs to be closed during installation.

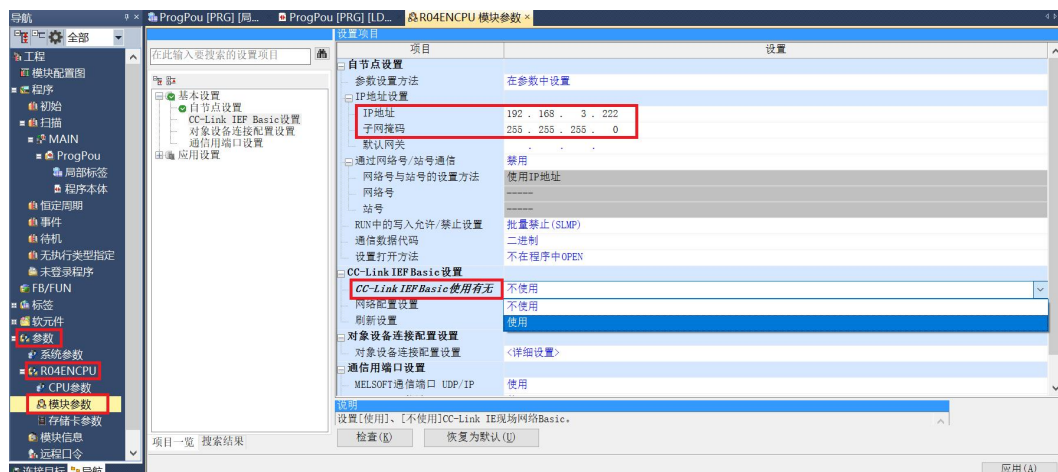
3. Create Project

- Click "Project" in the menu bar and click "New Project".
- The New Project dialog box pops up, select "RCPU" for PLC series, "R04EN" for PLC type, and default ladder diagram for program language.
- Click OK, as shown below.

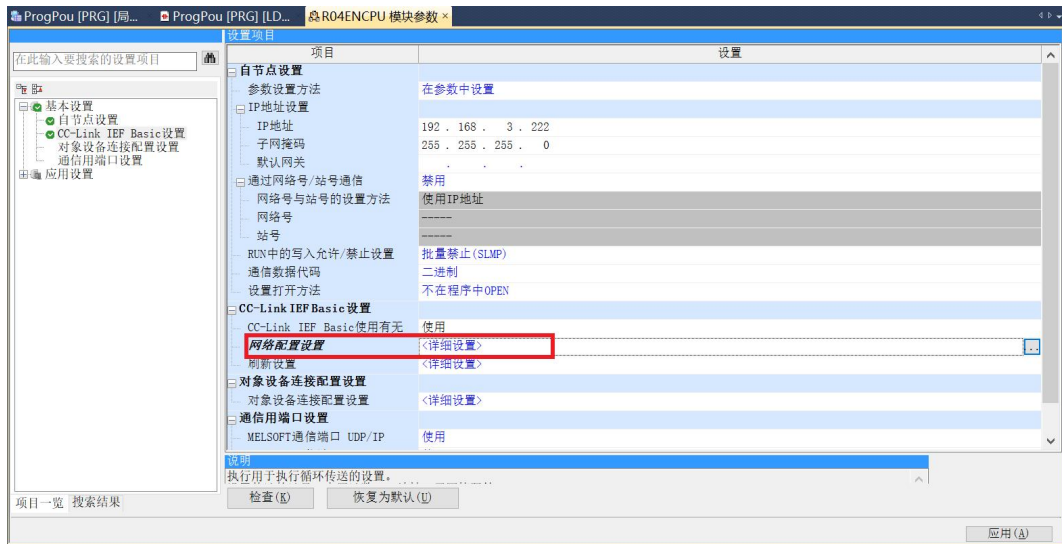


4. Setting up to use the CC-Link IE Field Network Basic

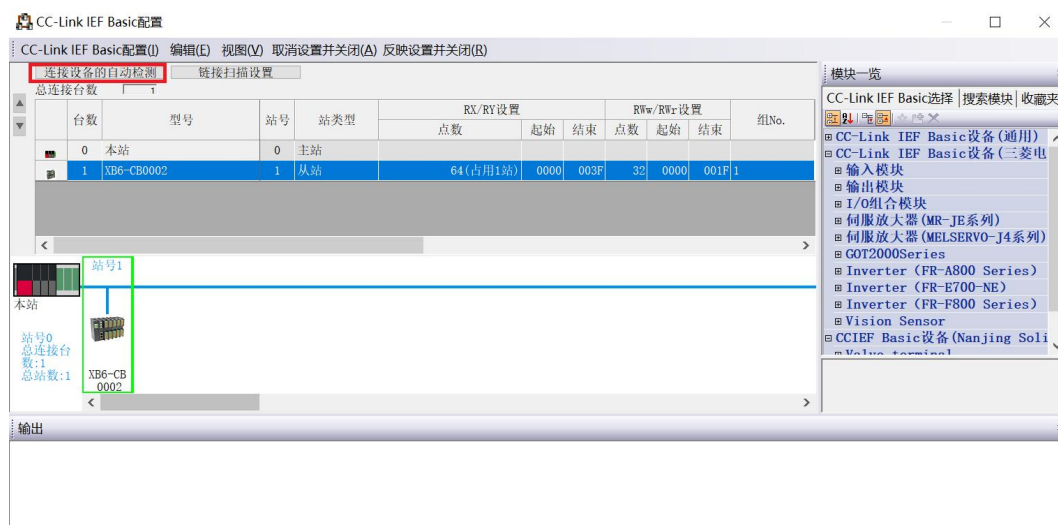
- a. In the left navigation interface, select "Parameter -> CPU Module Model", double-click "Module Parameter", set the IP address of CPU under IP Address Setting, and select "Use" in the drop-down box of "Use or not use" of CC-Link IEF Basic, as shown in the following figure. Select "Use" in the drop-down box of "CC-Link IEF Basic" or "Use", as shown in the following figure.



- b. Under the Settings item interface, select "Network Configuration Settings" and double-click "Detailed Settings", as shown in the following figure.

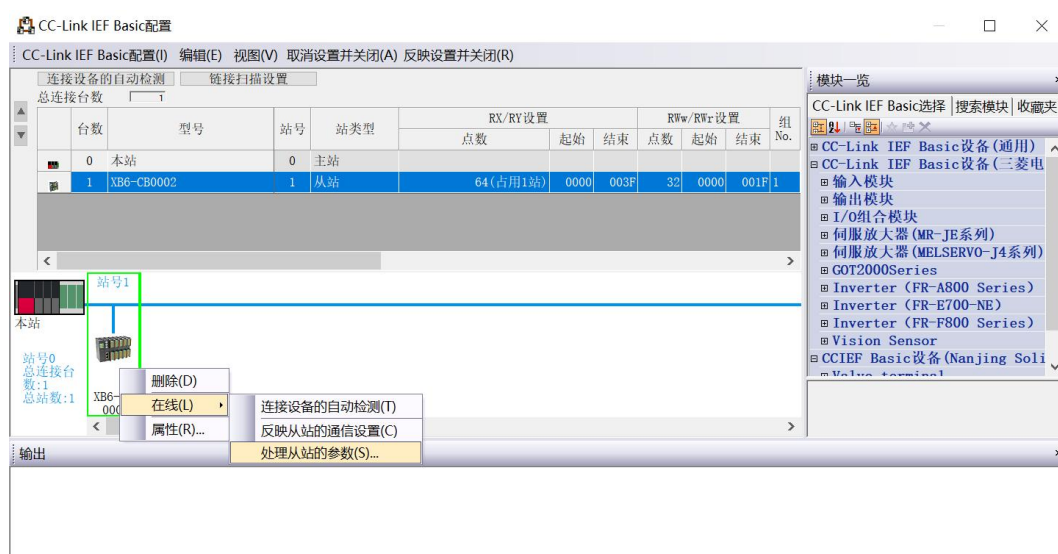


- c. In the pop-up window of CC-Link IEF Basic configuration, click "Auto Detection of Connected Devices" to automatically add the connected modules to the network, as shown in the following figure.

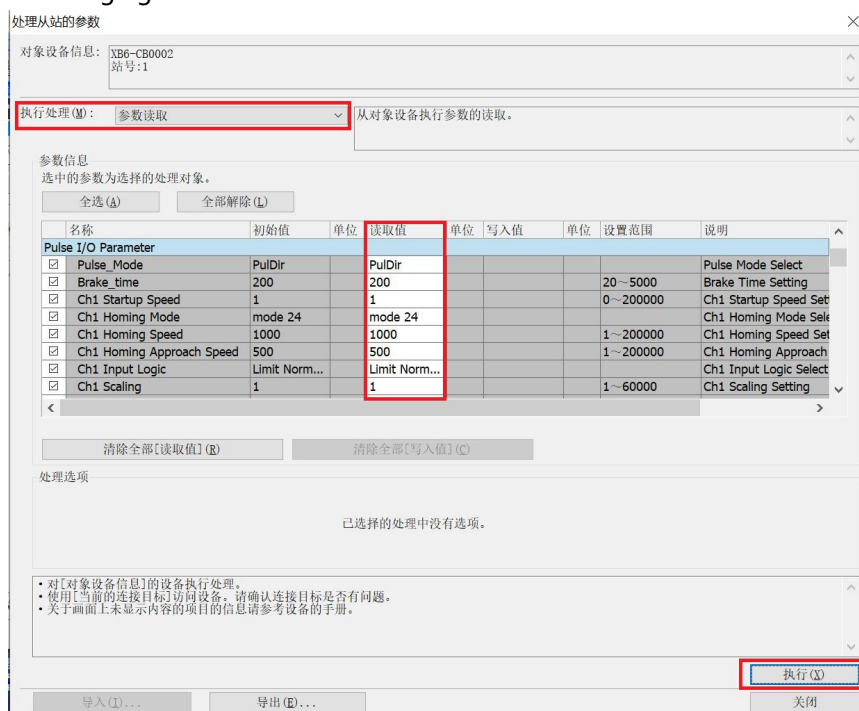


5. Read parameters

- a. In the window of CC-Link IEF Basic configuration, right-click on the slave device and select "Online -> Process Slave Parameters", as shown in the following figure.

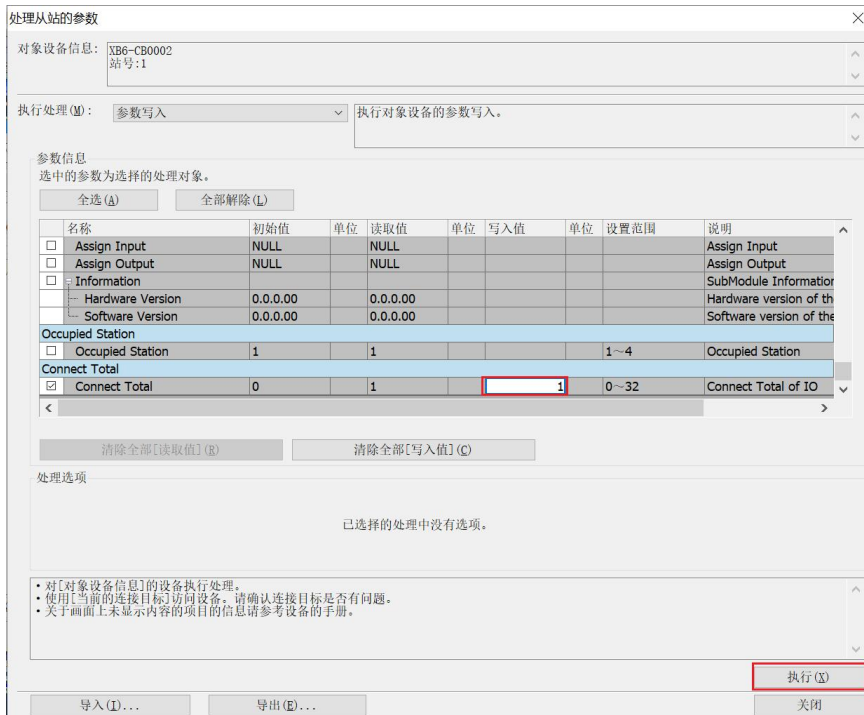


- b. In the parameter pop-up window of the processing slave, set the execution processing to "Parameter Reading" and click "Execute" to finish reading the relevant parameters, as shown in the following figure.



6. Number of write modules

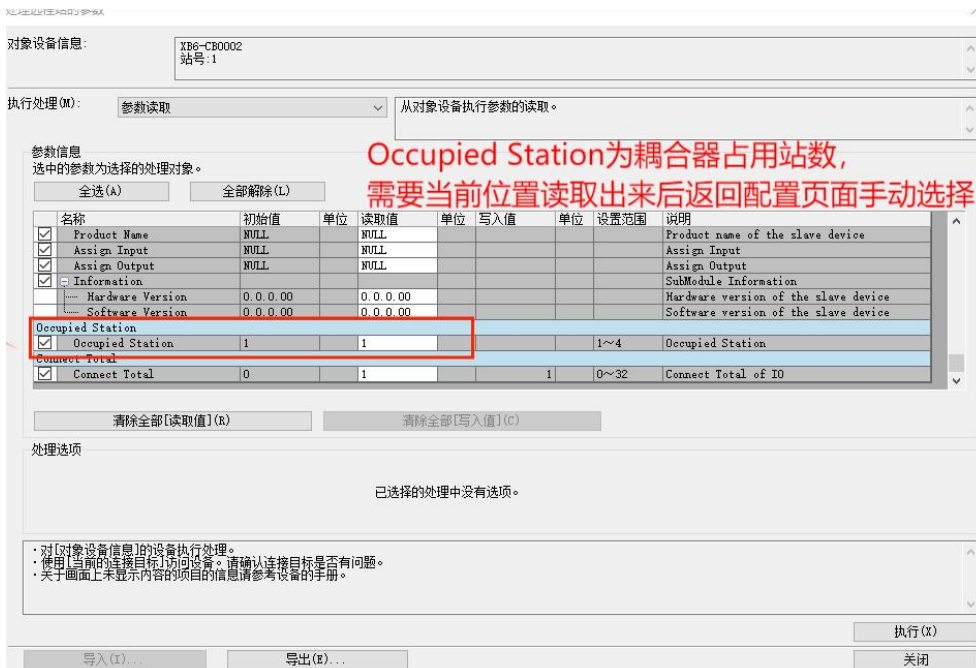
- a. In the parameter pop-up window of the processing slave, set the execution processing to "Parameter Write", click "Release All", check the "Connect Total" function option, and write the total number of IOs of the actual topology connection in the "Write Value" of "Connect Total", and then click "Execute" to complete the configuration distribution. In the "Write Value" of "Connect Total", write the total number of IOs connected to the actual topology, and then click "Execute" to complete the configuration, as shown in the figure below. Click "Execute" to complete the configuration distribution, as shown in the following figure.



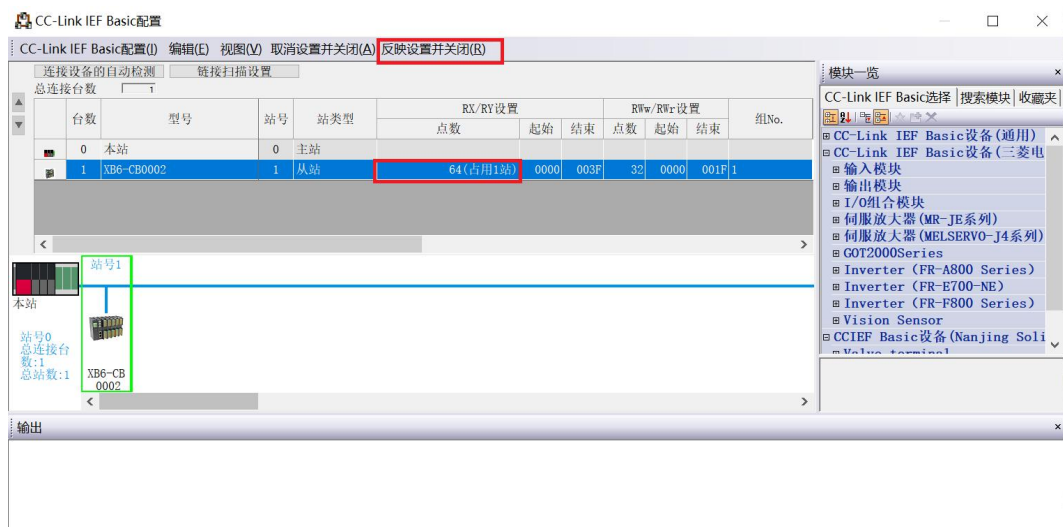
Note: Writing the number of modules is a necessary step for communication and must be performed.

7. Number of occupied stations selection

- a. In the Parameter popup window of the processed slave, set the Execute Process to "Parameter Read", and record the read value of "Occupied Station" as "1", as shown in the figure below. The following figure shows.

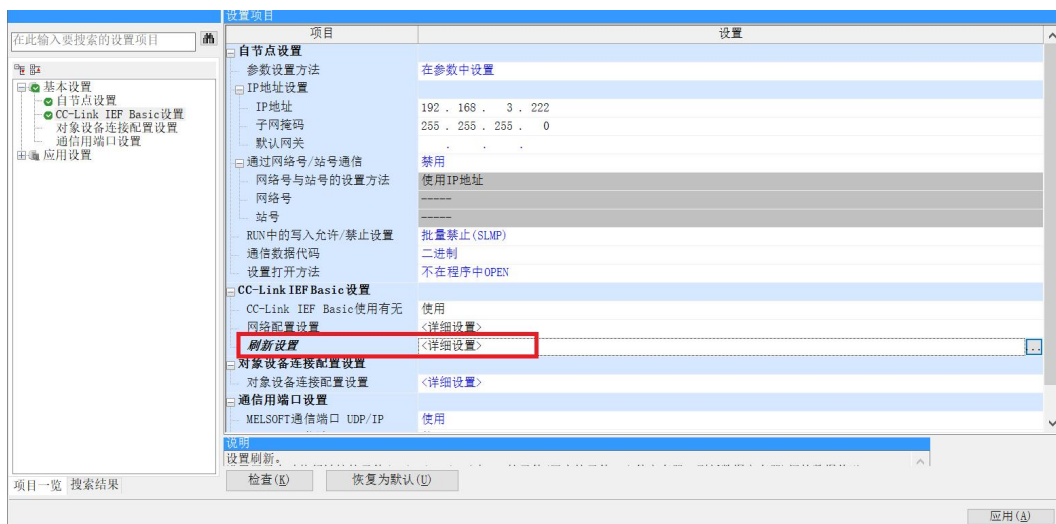


- b. Select the number of occupancy according to the value read, here select occupancy 1 station, click "Reflect Settings and Close" to complete the configuration, as shown in the following figure.

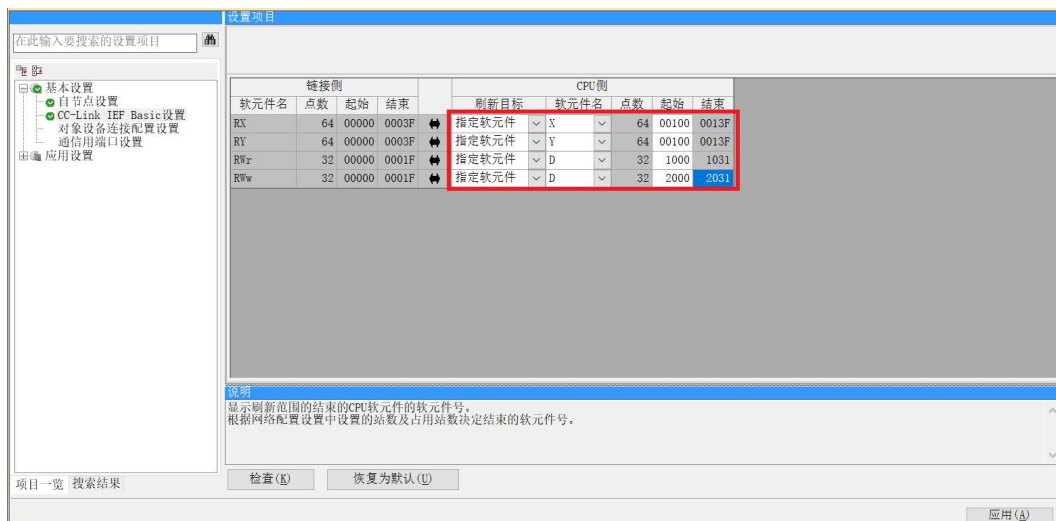


8、Refresh Side Setting

- a. In the left navigation interface, select "Parameter -> CPU Module Model", double click "Module Parameter".
- b. Under the Setting item interface, select "CC-Link IEF Basic Settings -> Refresh Settings", double click "Detailed Settings", as shown in the following figure.

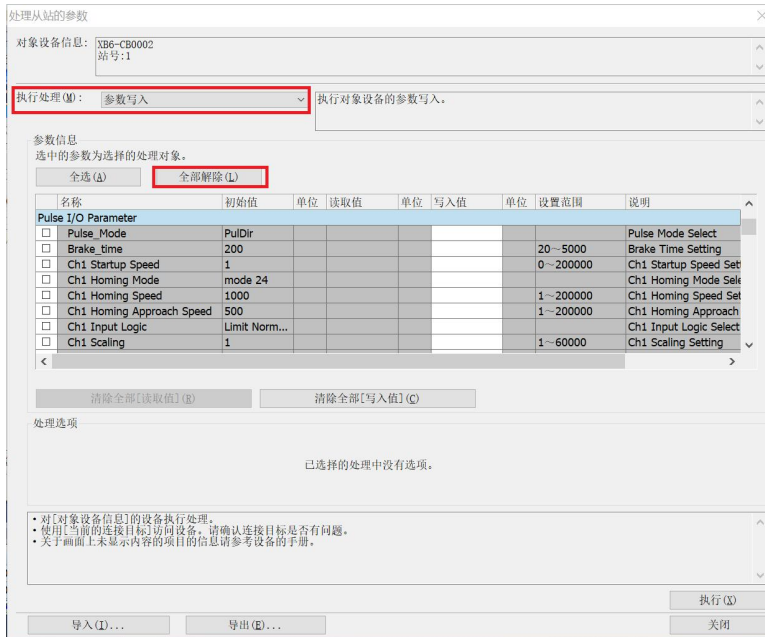


- c. Configure the relevant parameters, after the configuration is complete, click "Apply", as shown in the following figure.

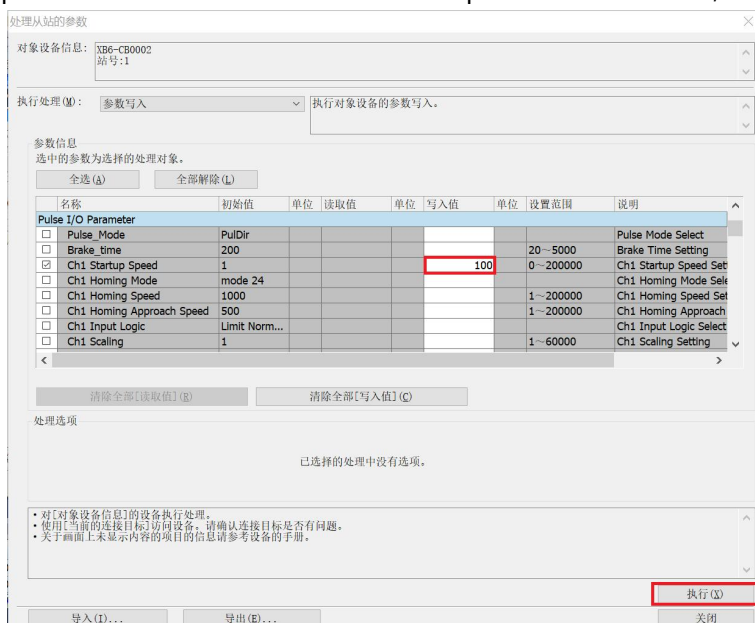


9. Parameterization

- a. In the CC-Link IEF Basic Configuration window, right-click on the slave device and select "Online -> Process Slave Parameters".
- b. In the parameter pop-up window of the processing slave, set the execution processing to "Parameter Write", and click "Release All" to configure the parameters individually, as shown in the following figure.



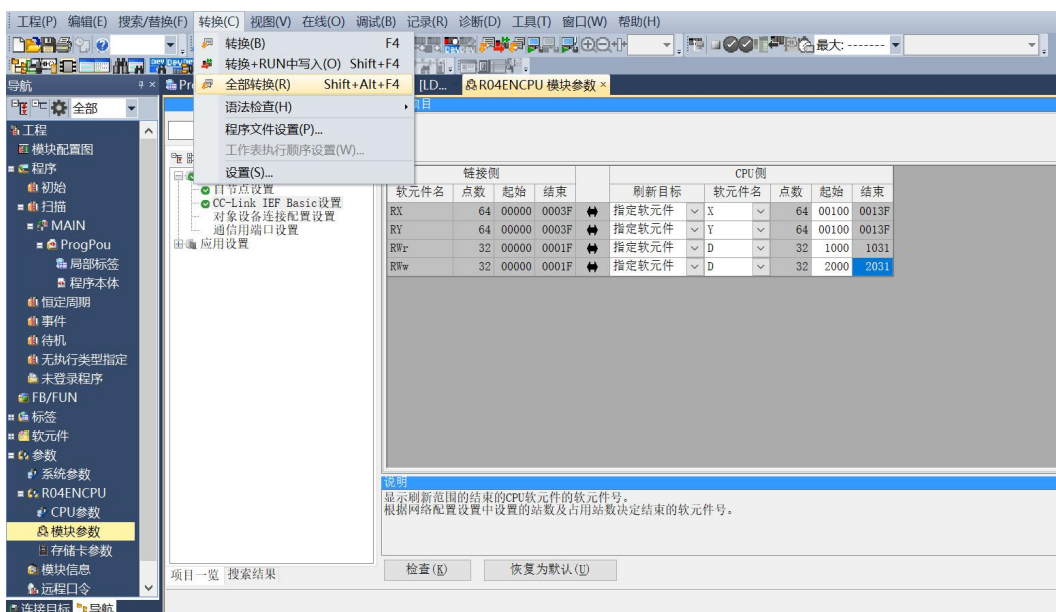
- c. For example, to modify the startup parameters, you can check the "Startup Speed" function option, and then write the modified values in the "Write Value" of "Startup Speed" as required. Write the modified value in the "Write Value" of "Startup Speed" as required. After the setting is completed, click "Execute" to save the parameter to the coupler, and at the same time, download the parameter to the controller to make the parameter take effect, as shown in the following figure.



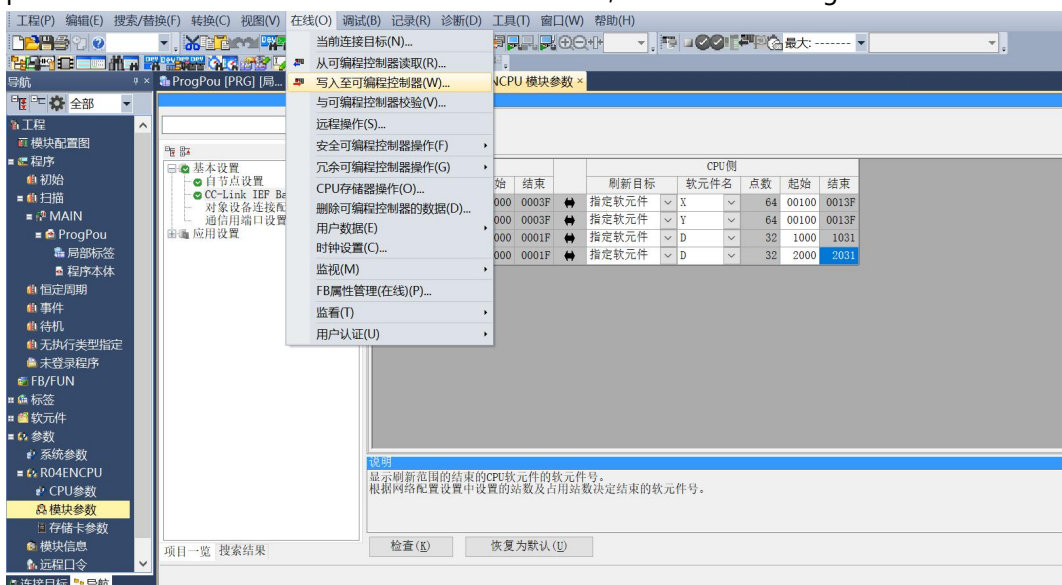
- d. Click Close.
- e. A popup box appears, "The set values are canceled when you close the (CC-Link IEF Basic Configuration) screen, so please perform parameter writing or exporting before closing it", click "Yes".

10. Download setup parameters

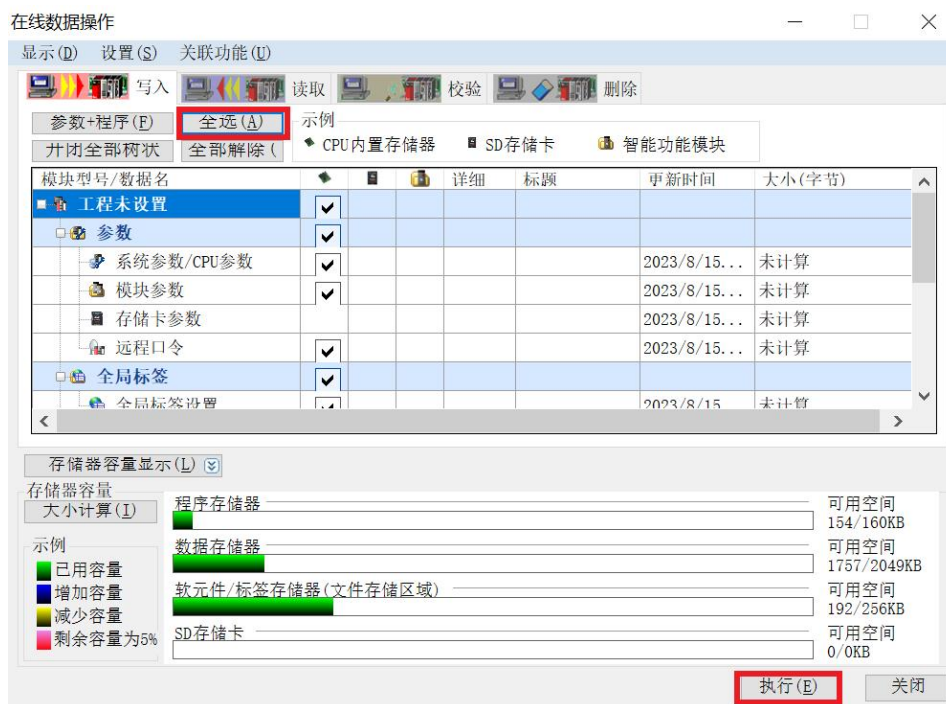
- a. Click "Convert" in the menu bar, click "Convert All", as shown below.



- b. Click "Online" in the menu bar, and then click "Write to Programmable Controller" to write the set parameters to the CPU module of the master station, as shown in the figure below.



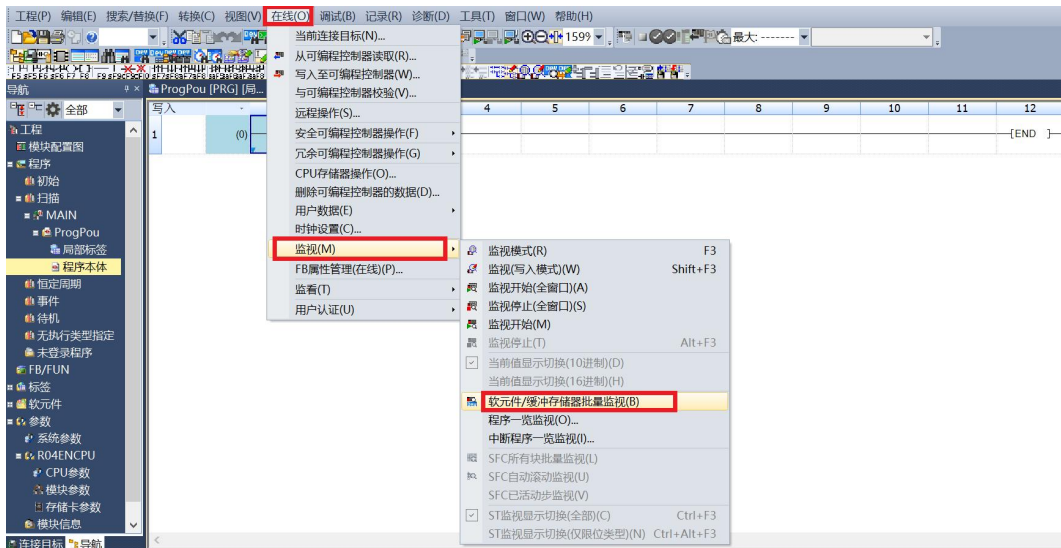
- c. The "Online Data Operation" dialog box will pop up, select "Select All", as shown in the following figure.



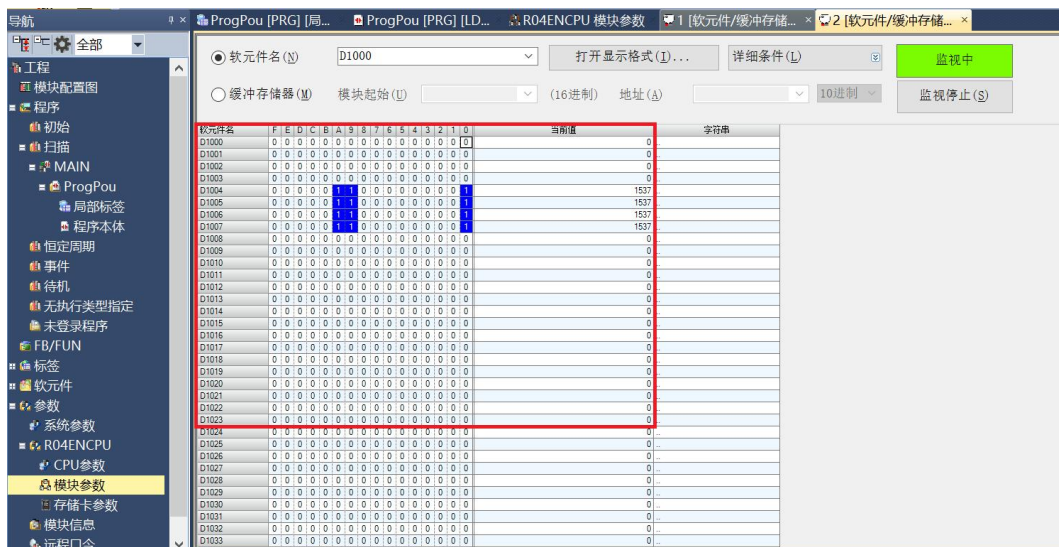
- d. Click on "Execute".
- e. A pop-up box appears, "After executing Remote STOP, do you want to execute PLC Write?" Select "Yes".
- f. A lower level prompt box pops up "Parameters already exist, do you want to overwrite them?" Select "Yes to all".
- g. A lower level prompt box pops up "No data exists in the soft component comment (COMMENT). No write was performed." Click OK.
- h. A prompt box "CPU is in STOP state. Select "Yes".
- i. A pop-up box "Completed" click "OK".
- j. At this point, the download of setup parameters is complete, click "Close".
- k. Disconnect the module from the PLC and re-power it up.

11. Monitor Settings

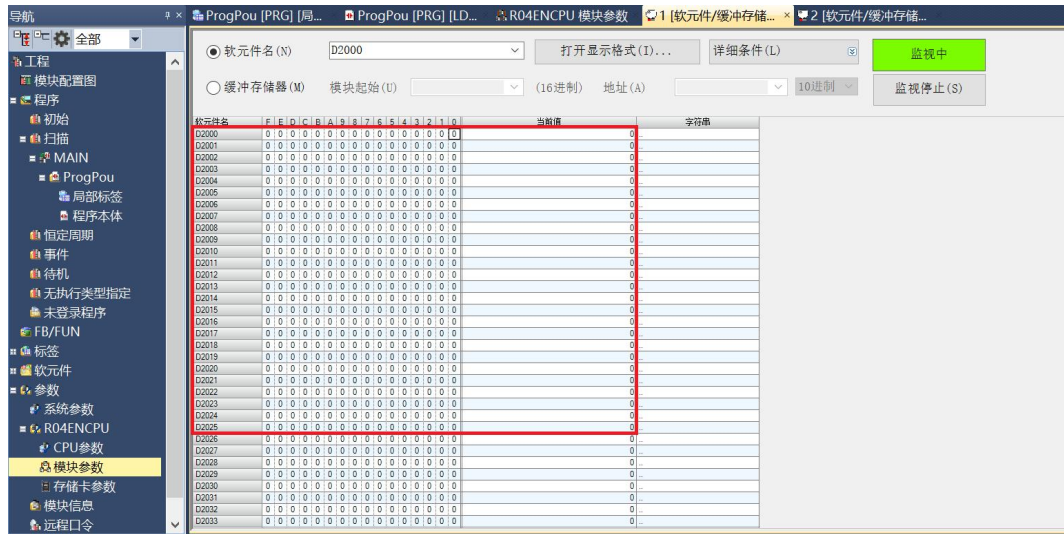
- a. Select "Online -> Monitor -> Bulk Monitor for Soft Components/Cache Storage".



- b. Repeat the above operation to create two monitoring interfaces. Input the parameters of "Remote Register (RWr)" and "Remote Register (RWw)" in the "Soft Component Name" of the two monitoring interfaces, i.e. "D1000" and "D2000" respectively, and the monitoring setting is completed. D1000" and "D2000" as set in the Network Parameter Setting screen, and the monitoring setting is completed.
- c. The Remote Register (RWr) D1000 monitor interface is the module's uplink data, which is used to monitor the status of the module as shown below.



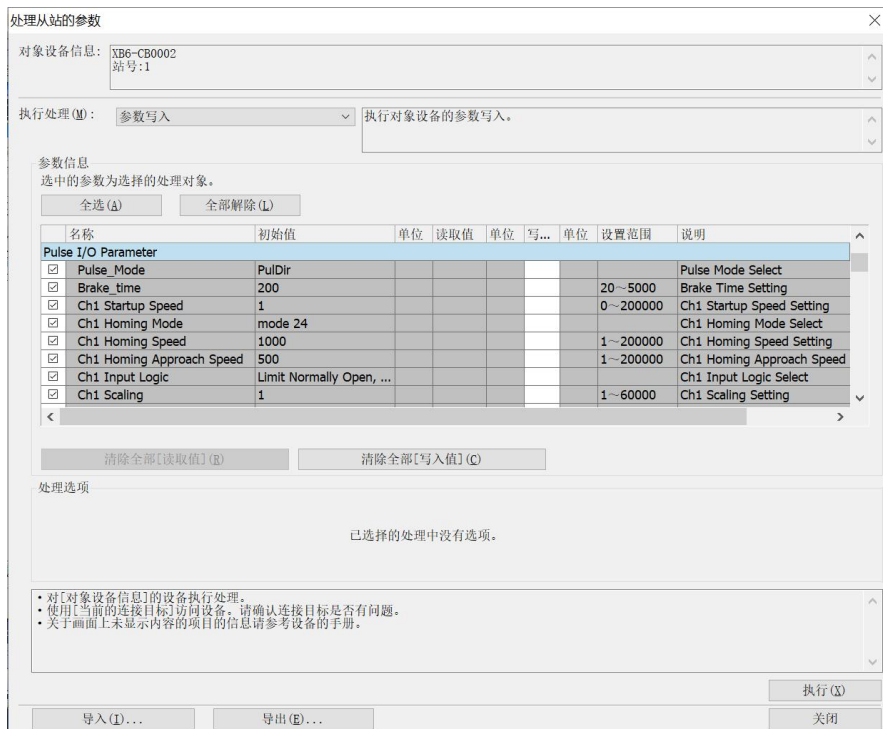
- d. The Remote Register (RWw) D2000 monitor interface is the downstream data of the module, which is used to monitor the output status of the module, as shown in the following figure.



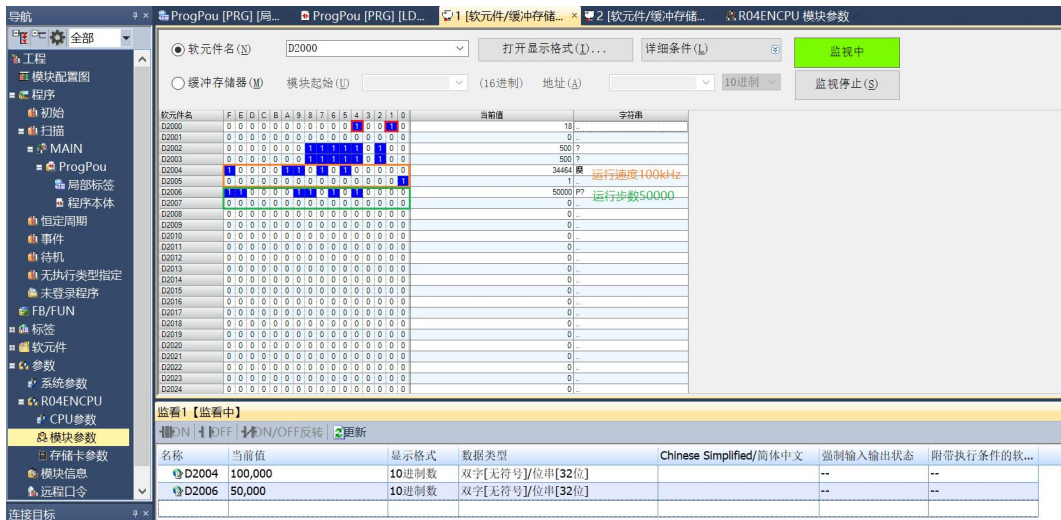
Examples of Module Functions

- ◆ Channel 1 runs 50,000 pulses in forward direction at 100kHz

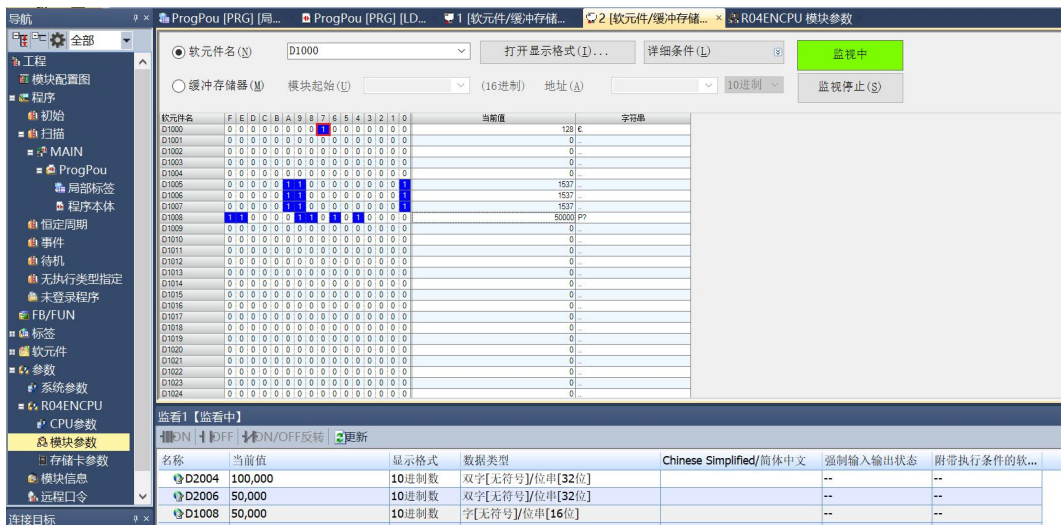
- a. Configure the configuration parameters as shown below.



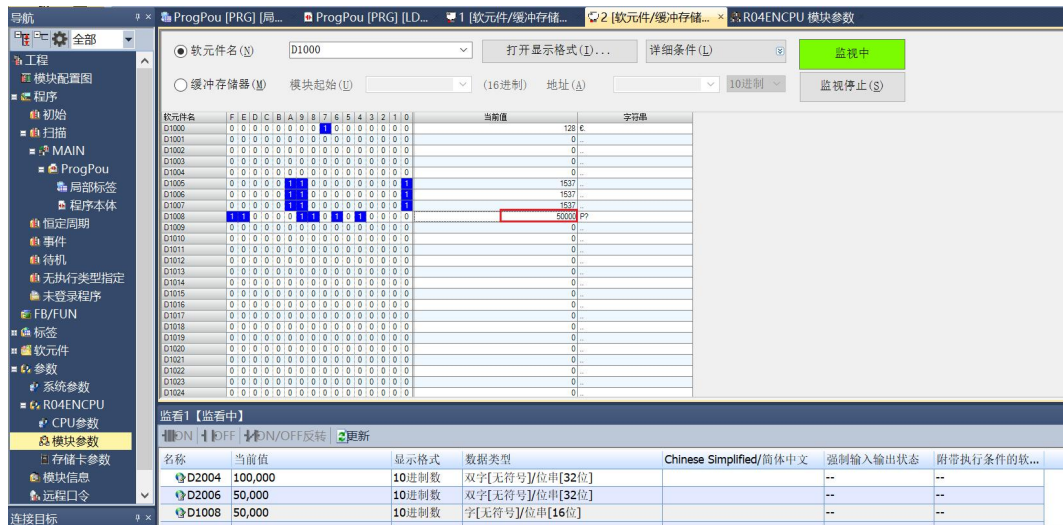
- b. Sets channel 1 to relative position mode;
- c. Configure channel 1 to run at 50000 steps and 100kHz;
- d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- e. Set the start command for channel 1 from 0 to 1 as shown below.



- f. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.

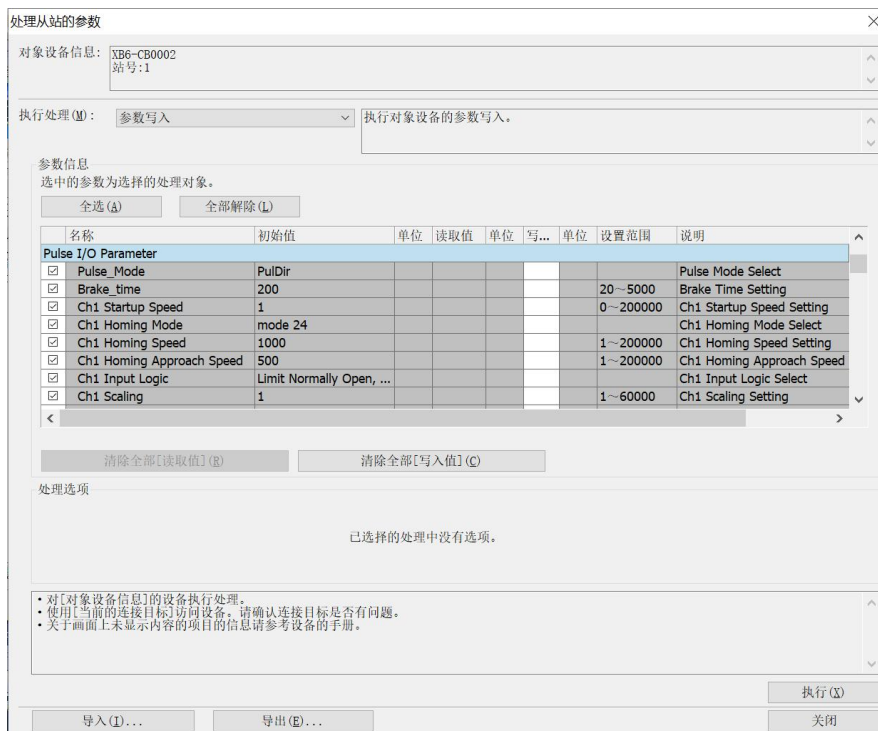


g. You can also see that the current coordinates of channel 1 are 50000, as shown below.

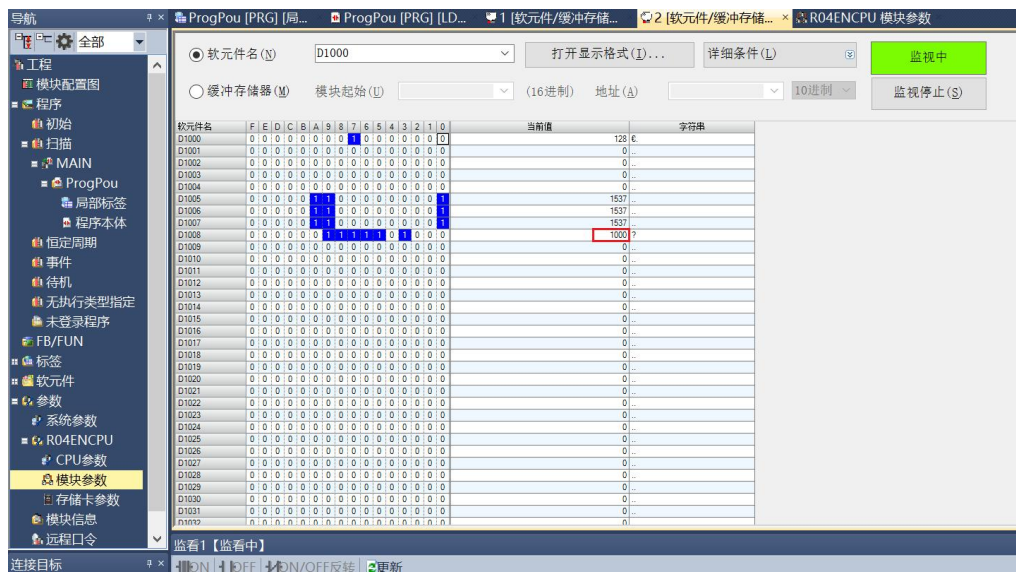


- ◆ Channel 1 with a current position of 1000 moves to a position of -20,000 with a running speed of 100 kHz.

a. Configure the configuration parameters as shown below.



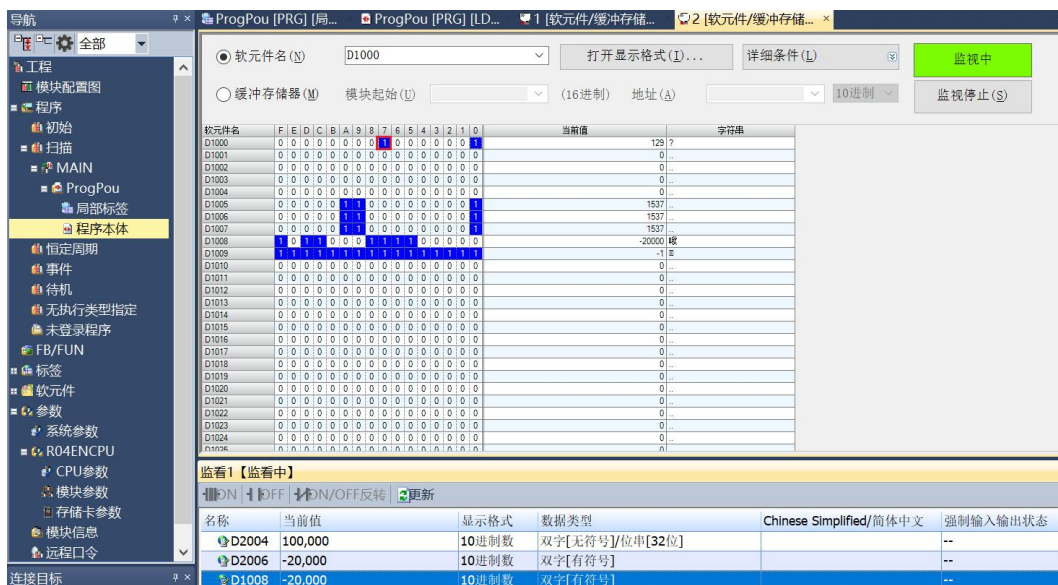
b. The current position of channel 1 is 1000, as shown below.



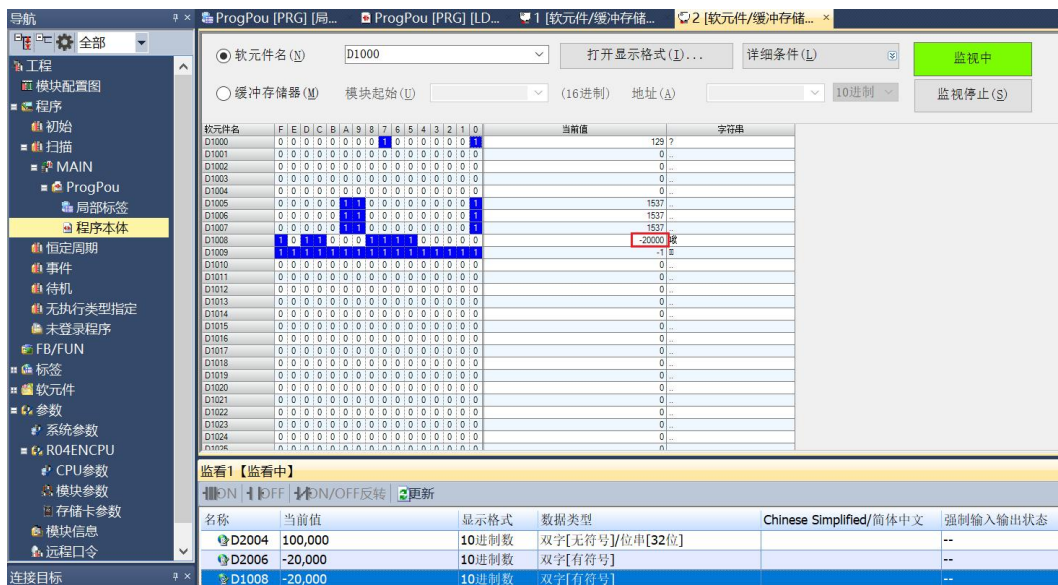
- c. Sets channel 1 to absolute position mode;
- d. Configure channel 1 to run at -20000 steps and 100kHz;
- e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- f. Set the start command for channel 1 from 0 to 1 as shown below.



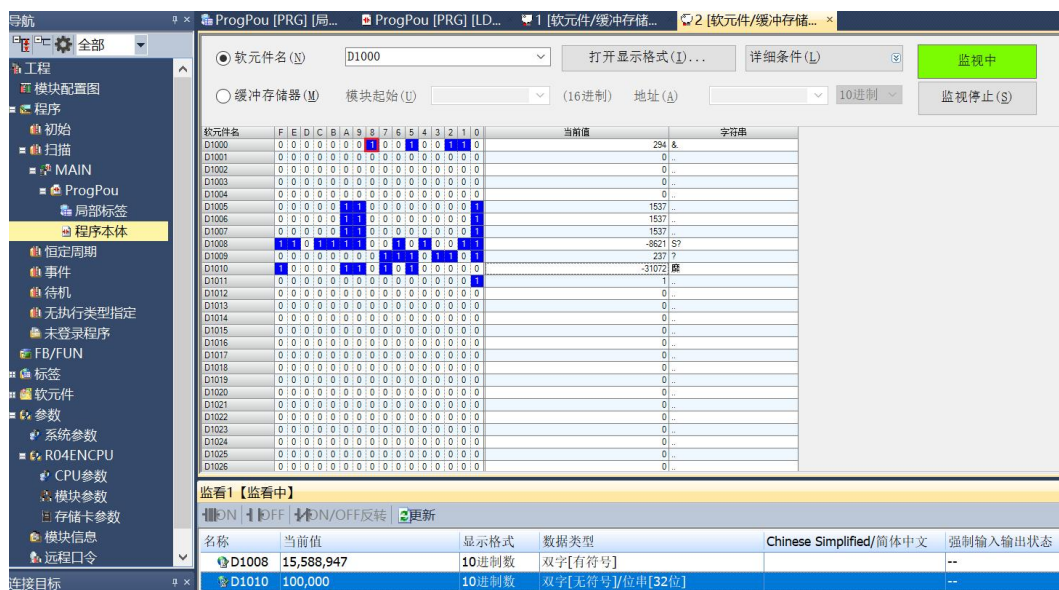
g. After the movement is complete, you can see that the channel 1 position arrival is set to 1, as shown below.



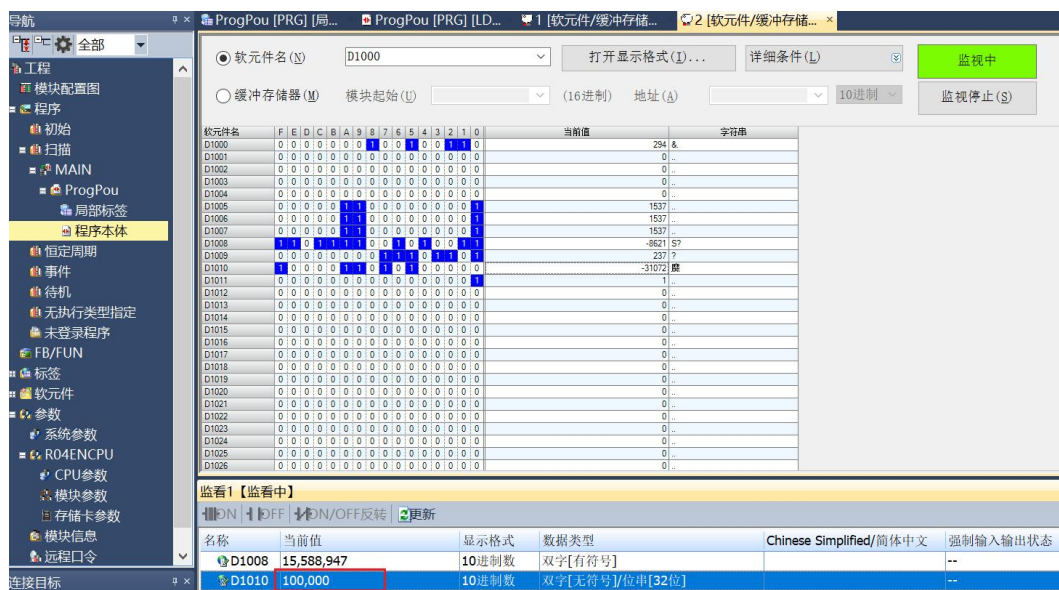
h. You can also see that channel 1 has a current coordinate of -20000, as shown below.



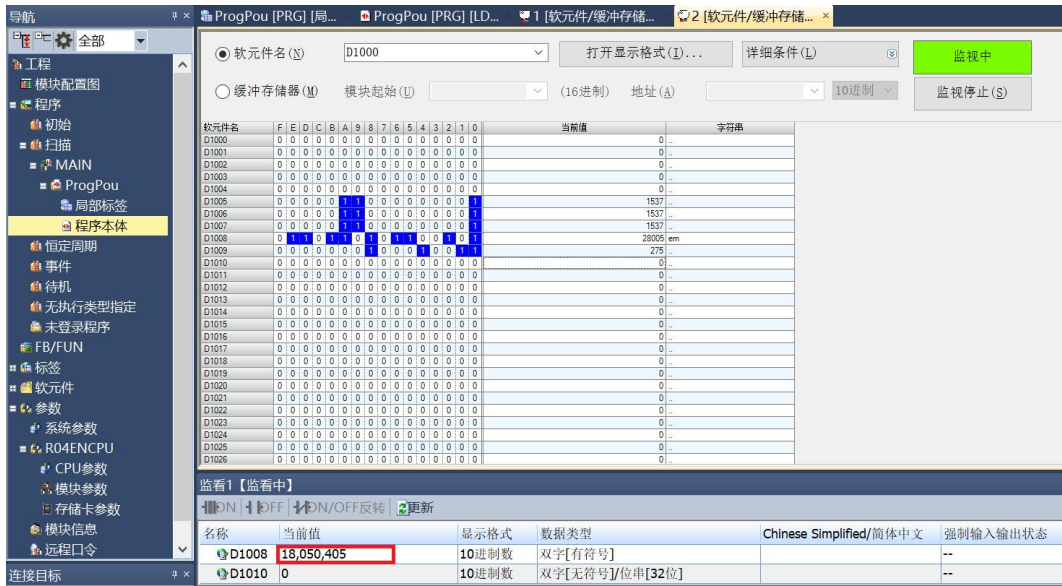
f. During the movement, you can see that the channel 1 velocity arrival is set to 1, as shown below.



g. During the movement, it is also possible to currently run at the actual speed of 100 kHz, as shown in the following figure.

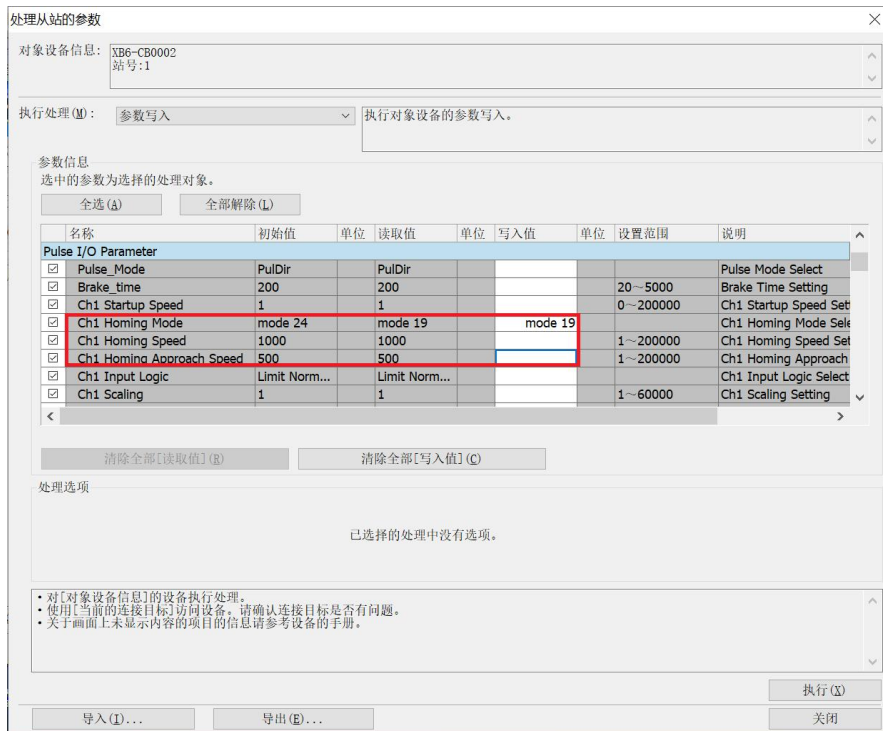


- h. The movement can be stopped by inputting a brake command or triggering a positive limit signal, as shown in the figure below.

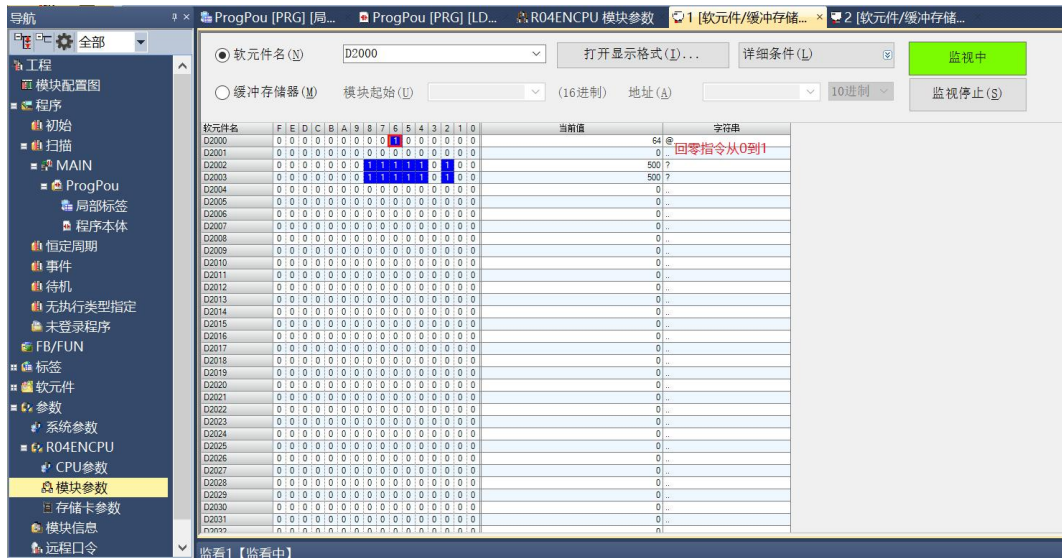


◆ Channel 1 on zero return

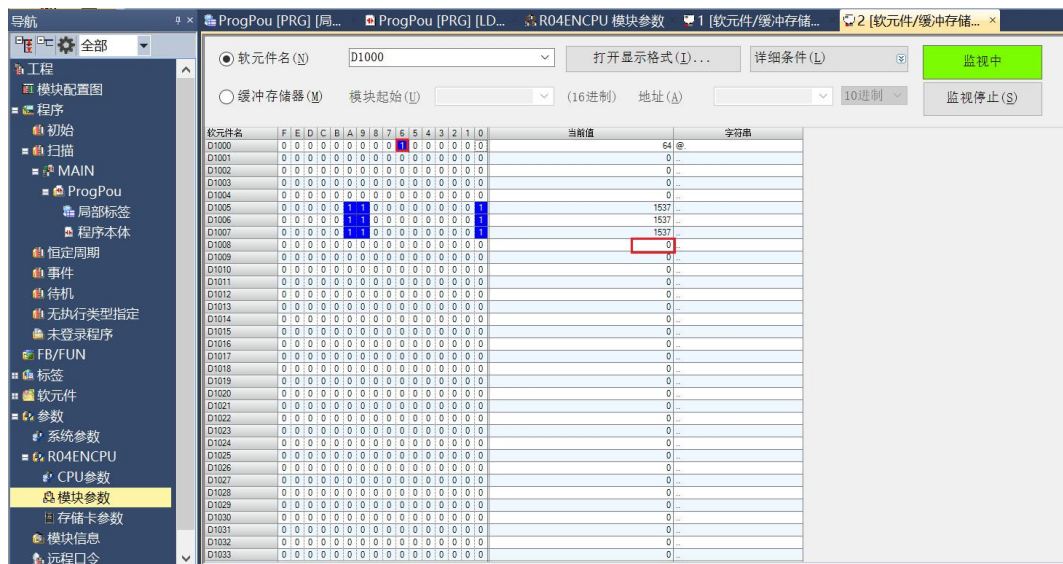
- a. Configure the configuration parameters, select the zero return mode and set the zero return speed and zero approach speed as shown below.



- b. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- c. Set the zero return command for channel 1 from 0 to 1 as shown below.

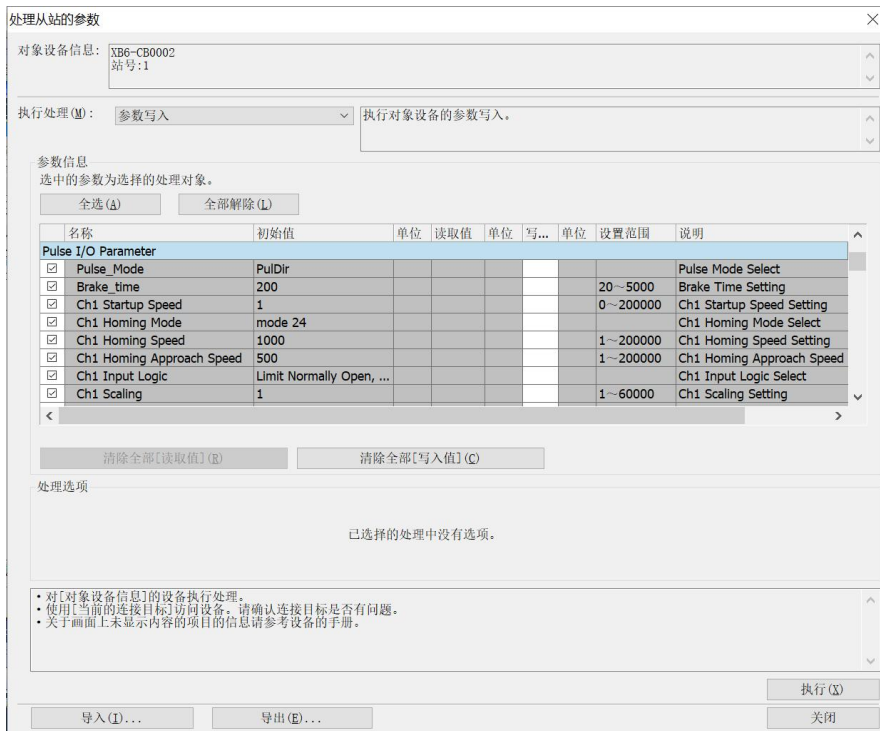


- d. Back to zero mode 19 need to input the origin signal, after inputting the origin signal, decelerate to 0, and then again to return to zero close to the speed of the negative direction of movement, until the origin signal disappears, stop the movement back to zero is complete, you can see the channel 1 coordinates are cleared to zero, the completion of the return to zero is set to 1, as shown in the figure below.

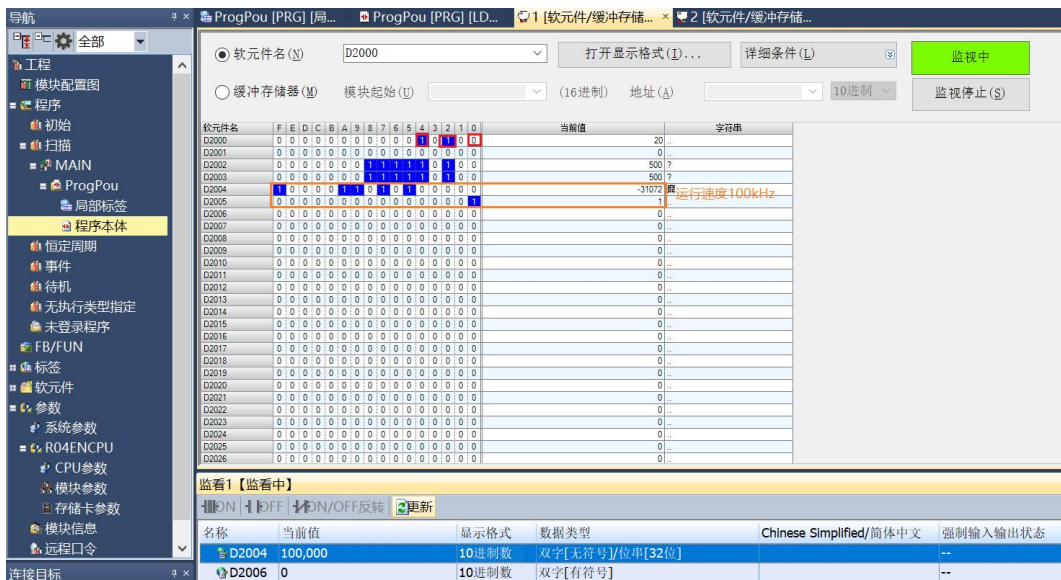


◆ Channel 1 turns on speed mode, running at 100 kHz, with the speed modified to 10 kHz during operation

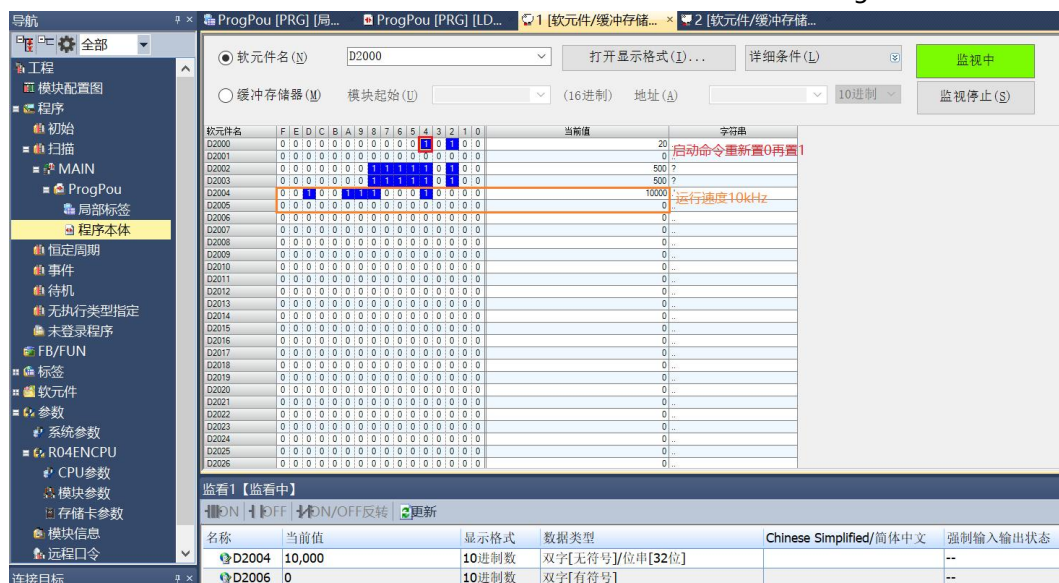
a. Configure the configuration parameters as shown below.



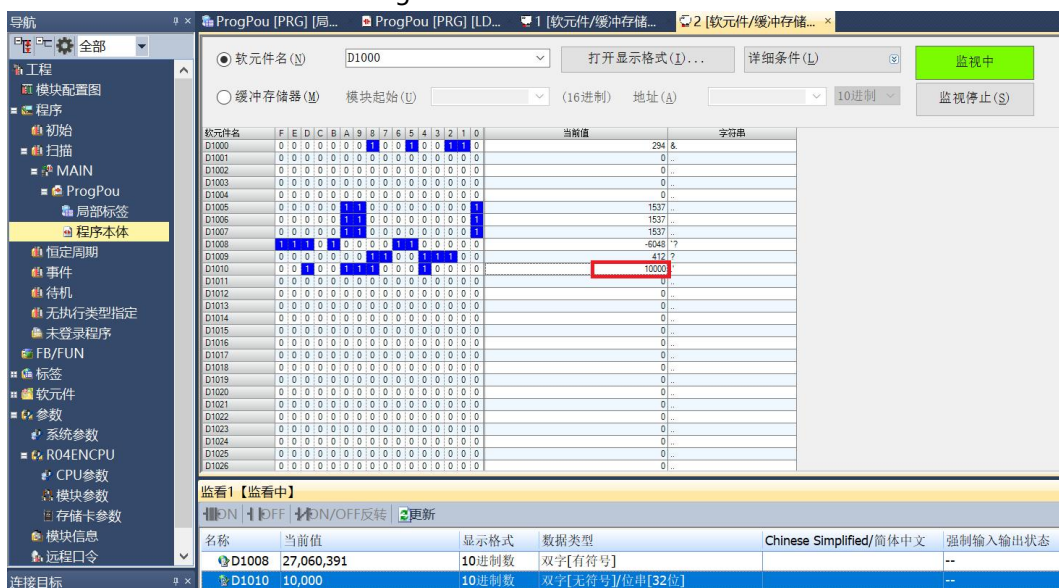
- b. Sets channel 1 to speed mode;
- c. Configure channel 1 to run at 100 kHz and the direction of motion to be 0 forward;
- d. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- e. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.



- f. Modify the running speed of channel 1 to 10kHz during motion;
- g. Reset the start command of channel 1 from 0 to 1 to start the motion merge as shown below.

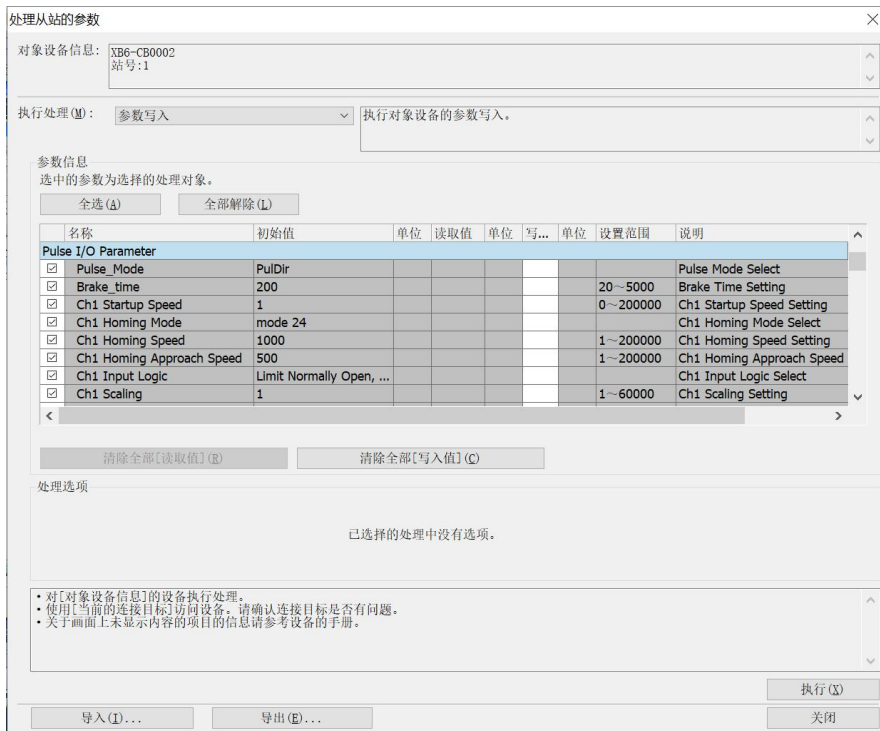


- h. Channel 1 can be seen decelerating to 10kHz motion as shown below.

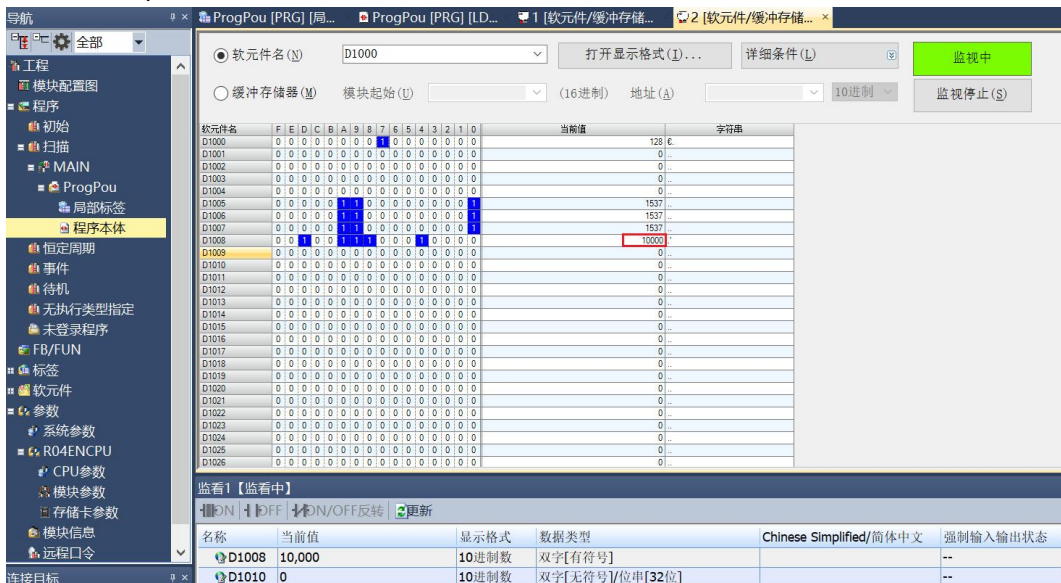


- ◆ The current position of channel 1 is 10000, move to the position of 20000, and modify the position to 50000 during the movement.

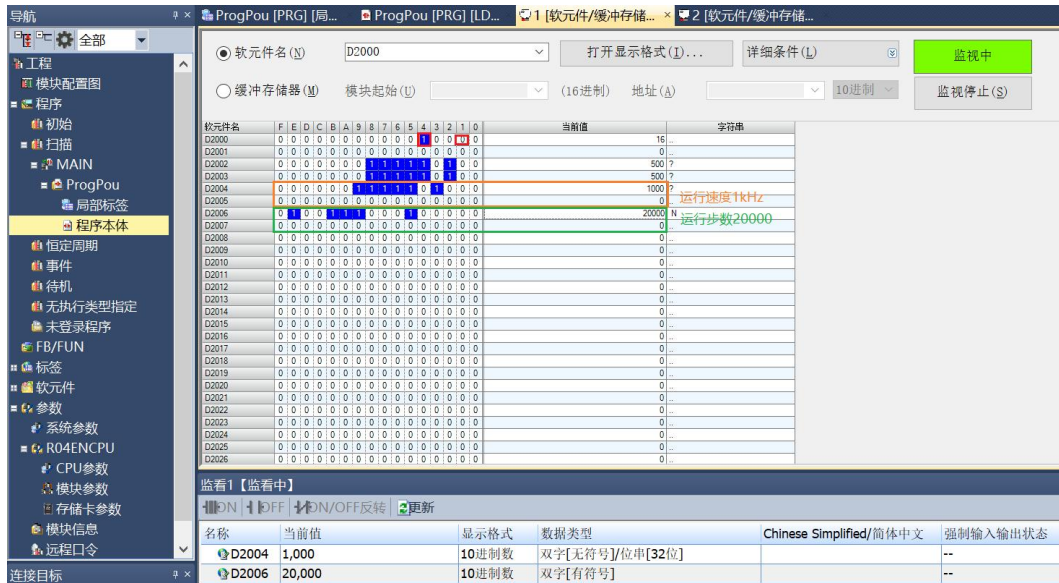
a. Configure the configuration parameters as shown below.



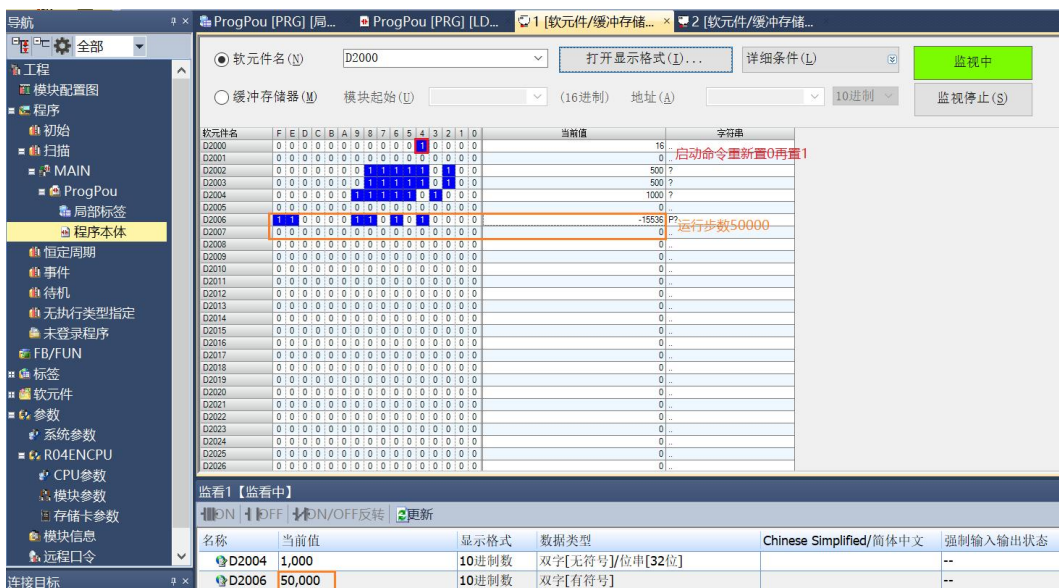
b. The current position of channel 1 is 10000, as shown below.



- c. Sets channel 1 to absolute position mode;
- d. Configure channel 1 to run at 20000 steps and 1kHz;
- e. Ensure that the channel 1 brake command is 0 and that channel 1 is at rest;
- f. Set the start command of channel 1 from 0 to 1 to start the movement as shown below.



- g. Modify the channel 1 running step count to 50,000 during the campaign;
- h. Re-set the start command for channel 1 from 0 to 1 to start the motion merge as shown below.



- i. After the movement, you can see that the current coordinates of channel 1 are 50000, as shown in the following figure.

