

Direct Drive Commissioning Instructions V1.4

PRECISION



SPEED

Content

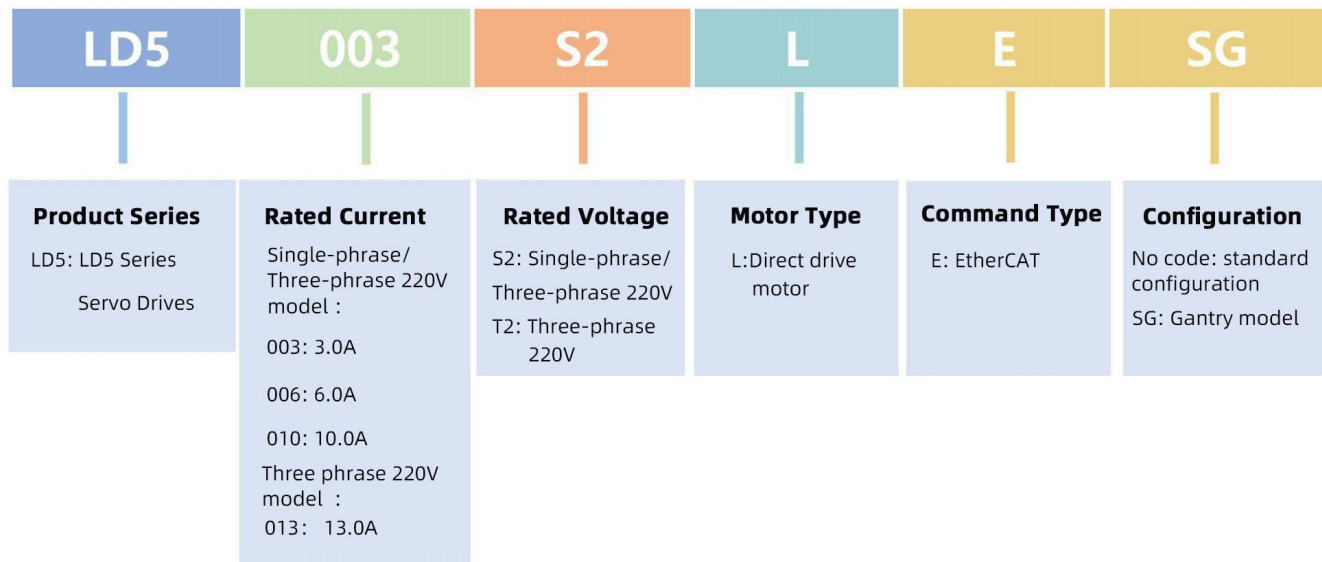
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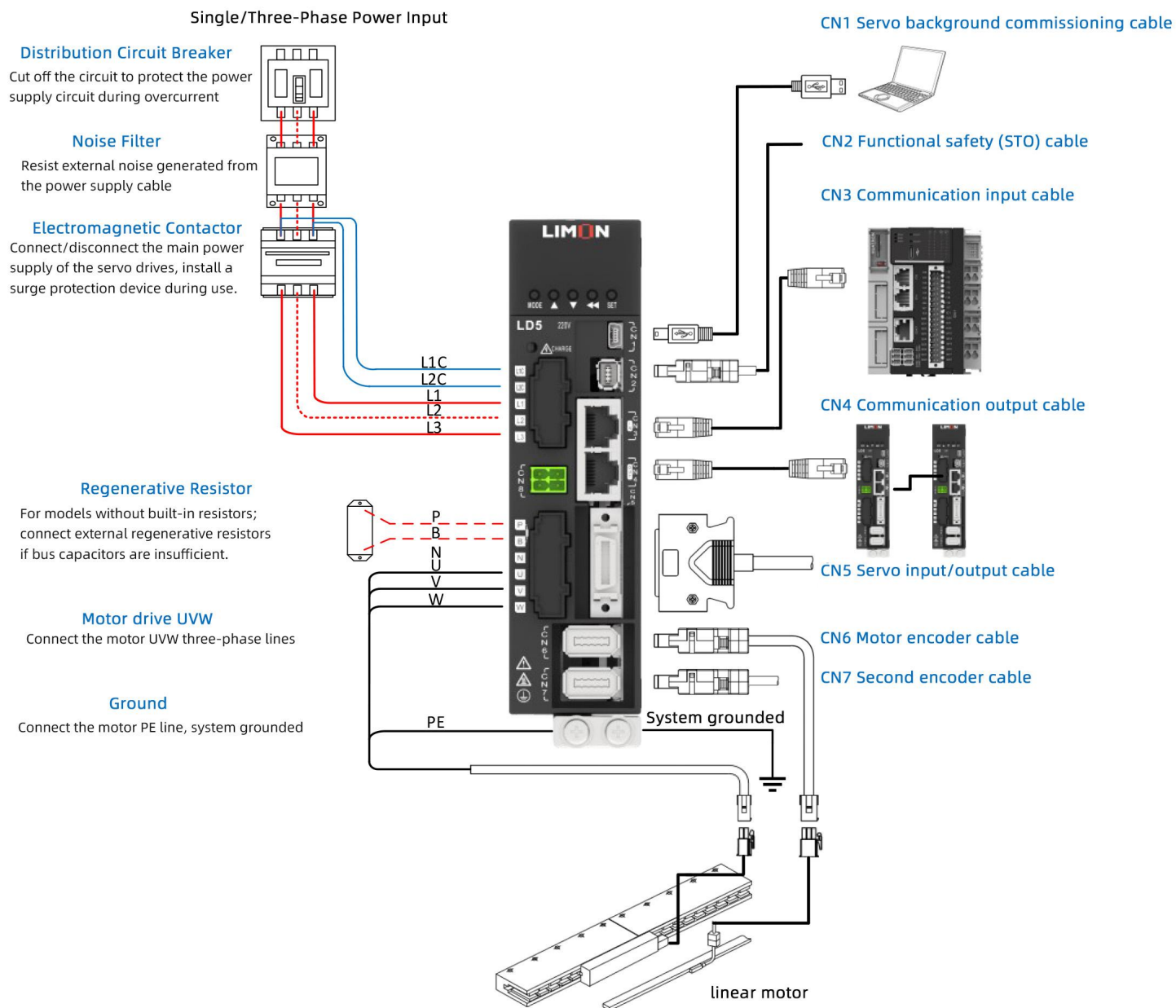
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1. Hardware instructions

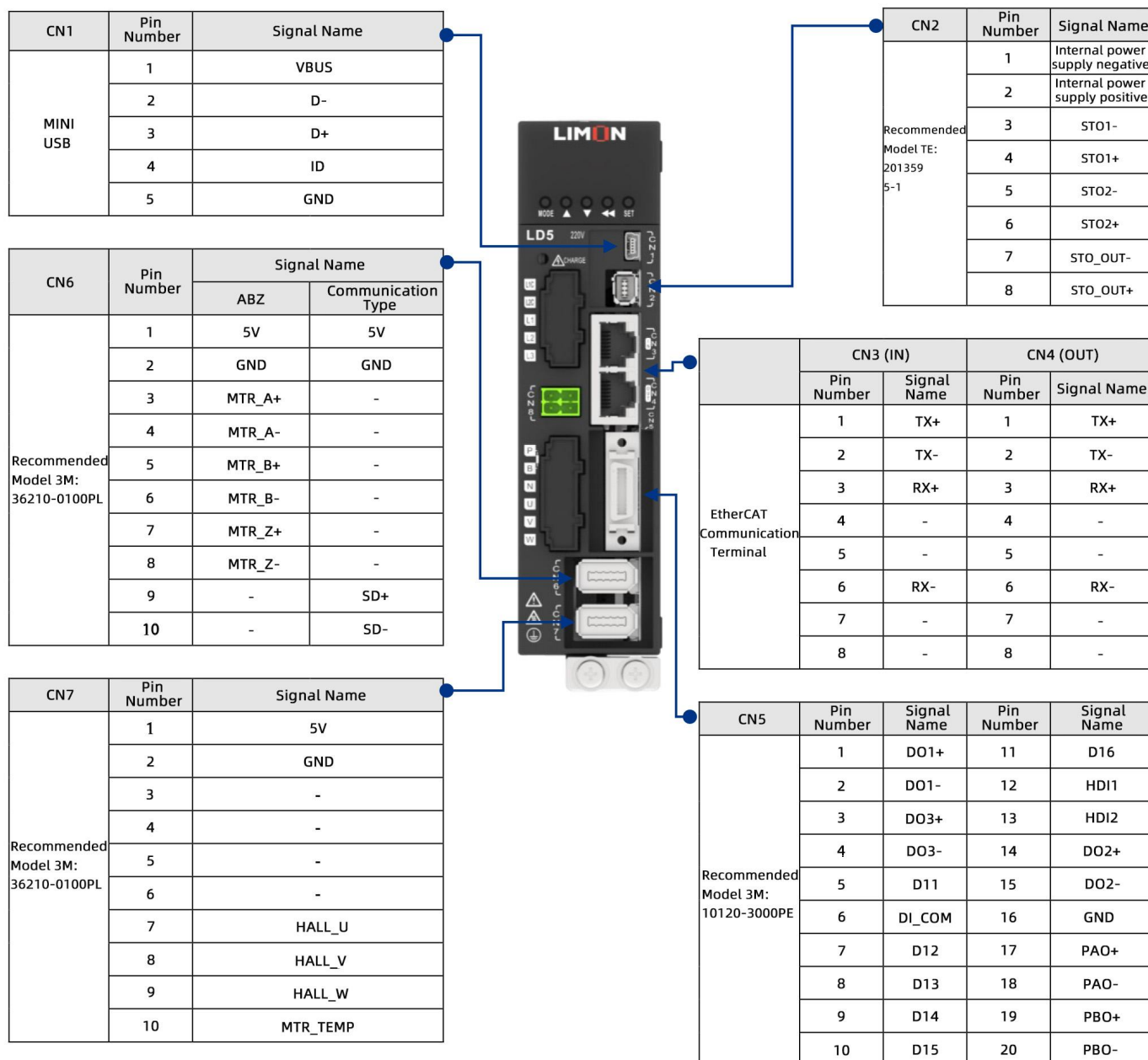
1.1 Model instructions



1.2 Interfaces and Definitions



Note: External wiring reference diagram (varies by model; pls refer to the specific model's manual for details).



Note: Interfaces vary by model; pls refer to the specific model's manual for details.

2. Software Connection and Parameter Settings

2.1 Software Installation and Drive connection



Unzip the file package.

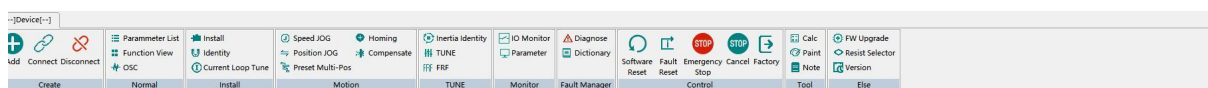
MemeData	2024/10/28 16:50	文件夹	
MotorParameter	2024/10/28 16:50	文件夹	
Upgrade	2024/10/28 16:50	文件夹	
WaveFiles	2024/10/21 10:31	文件夹	
CH343SER.EXE	2024/8/28 18:01	应用程序	612 KB
ChartControl.dll	2024/8/28 18:01	应用程序扩展	5,376 KB
ChartControlOld.dll	2024/8/28 18:01	应用程序扩展	5,342 KB
dotNetFx40_Full_x86_x64.exe	2024/8/28 18:01	应用程序	49,268 KB
DriverStart.exe	2024/9/6 18:33	应用程序	9,929 KB
ECATParamManager.exe	2024/8/28 18:01	应用程序	7,880 KB
FFT.dll	2024/8/28 18:01	应用程序扩展	255 KB
History.ini	2024/8/28 18:01	配置设置	9 KB
logo.png	2023/12/4 15:40	PNG 图片文件	37 KB
ModT.dll	2024/8/28 18:01	应用程序扩展	86 KB
OSCChartUsercontrol.dll	2024/8/28 18:01	应用程序扩展	48 KB
OSCChartUsercontrolOld.dll	2024/8/28 18:01	应用程序扩展	20 KB
OxyPlot.dll	2024/8/28 18:02	应用程序扩展	606 KB
OxyPlot.WindowsForms.dll	2024/8/28 18:01	应用程序扩展	28 KB

Click on the DriverStart file within the folder to run the program.

名称	修改日期	类型	大小
config	2024/11/15 13:58	文件夹	
DriverParameter	2024/10/21 10:31	文件夹	
DriverStart_En_20240906	2024/11/15 13:58	文件夹	
en	2024/11/15 13:58	文件夹	
Help	2024/11/15 13:58	文件夹	
MemeData	2024/11/15 13:58	文件夹	
MotorParameter	2024/11/15 13:58	文件夹	
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OxyPlot.WindowsForms.dll	2024/8/28 18:01	应用程序扩展	28 KB
OxyPlot.WindowsForms.xml	2024/8/28 18:01	XML 文档	38 KB
OxyPlot.xml	2024/8/28 18:01	XML 文档	960 KB
Readme.txt	2024/8/28 18:01	文本文档	1 KB
Telegram.dat	2024/8/28 18:01	CAXA 公式曲线文...	38 KB
VCP_V1.5.0_Setup_W8_x86_32bits.exe	2024/8/28 18:01	应用程序	6,745 KB
vc_redist_x86.exe	2024/8/28 18:01	应用程序	4,879 KB
WinPcap_4_1_3.exe	2024/8/28 18:01	应用程序	894 KB

If it does not run correctly, pls install these three files in the folder.

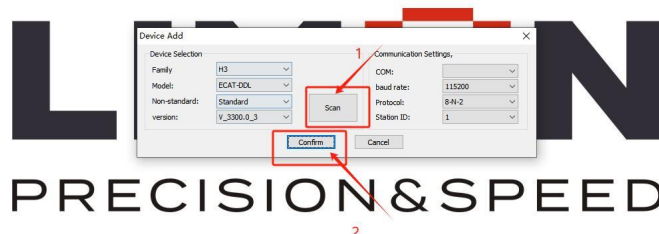
Using a Mini-USB cable, to connect the drive to the computer (already install with the DriverStart software.)



DriverStart

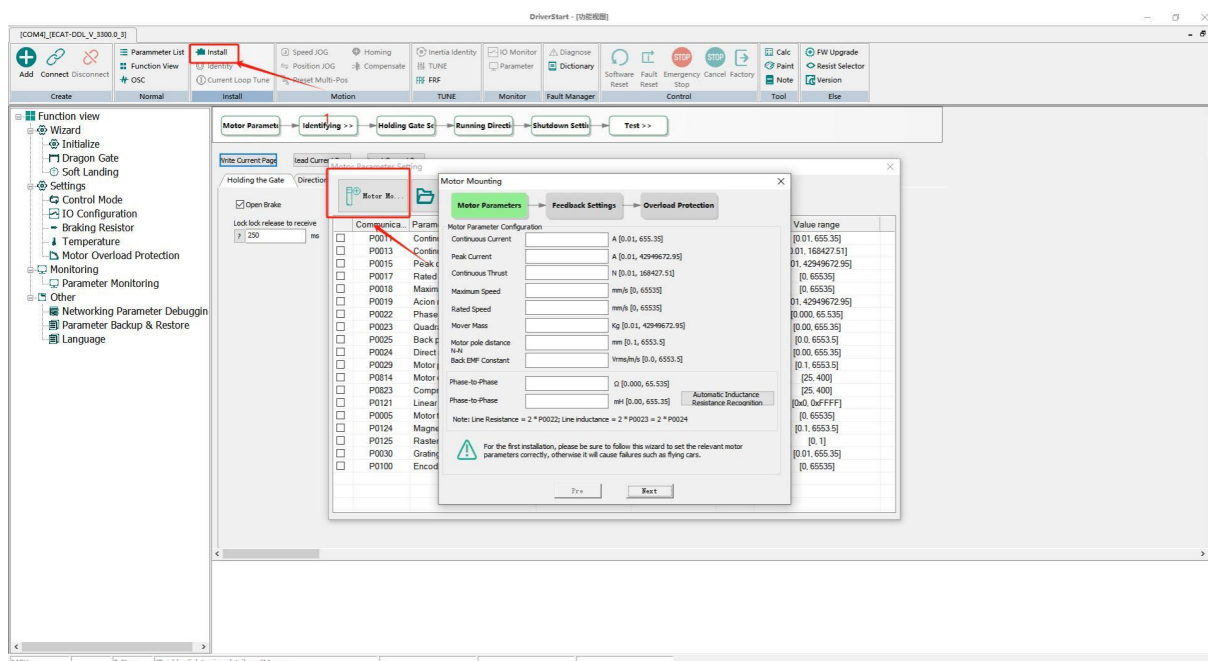
V4.6.0.0

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Open DriverStart, click "Scan", then click "Confirm" to connect the driver with the software.

2.2 Motor parameter settings



Click "install" and Open the "motor mounting"

Motor Mounting
✕

Motor Parameters

Feedback Settings

Overload Protection

Motor Parameter Configuration

Continuous Current		A [0.01, 655.35]
Peak Current		A [0.01, 42949672.95]
Continuous Thrust		N [0.01, 168427.51]
Maximum Speed		mm/s [0, 65535]
Rated Speed		mm/s [0, 65535]
Mover Mass		Kg [0.01, 42949672.95]
Motor pole distance N-N		mm [0.1, 6553.5]
Back EMF Constant		Vrms/m/s [0.0, 6553.5]

Phase-to-Phase		Ω [0.000, 65.535]
Phase-to-Phase		mH [0.00, 655.35]

Automatic Inductance
Resistance Recognition

Note: Line Resistance = 2 * P0022; Line inductance = 2 * P0023 = 2 * P0024

For the first installation, please be sure to follow this wizard to set the relevant motor parameters correctly, otherwise it will cause failures such as flying cars.

Pre

Next

Fill in the motor parameters in the corresponding fields. If the resistance and inductance are unknown, you can click on "Automatic Inductance Resistance Recognition," and the drive will automatically identify the resistance and inductance.

Motor Mounting

Motor Parameters
Feedback Settings
Overload Protection

Feedback Parameter Configuration

Positional Feedback Type
Incremental

Signal Type
Incremental ABZ

Scale Resolution
0
um

☒ Raster
☐ Magnetic Gate

Grid Spacing
0
mm [0.1, 6553.5]

Motor Temperature Sensors.
0- No sensor

1

2

Pre
Next

Set the corresponding feedback type.

Motor Mounting

Motor Parameters

Feedback Settings

Overload Protection

Overload Protection Settings

☐ Tablet
☐ U-shaped
☐ Barrel
☒ Custom

Motor Overload Current Compression

100 %

Overload Protection Gain:

100 %

Note: If the overload capacity of the motor is weak, please reduce the above two coefficients according to the actual situation. The smaller the overload protection factor, the more sensitive the drive overload protection alarm is

Pre

Done

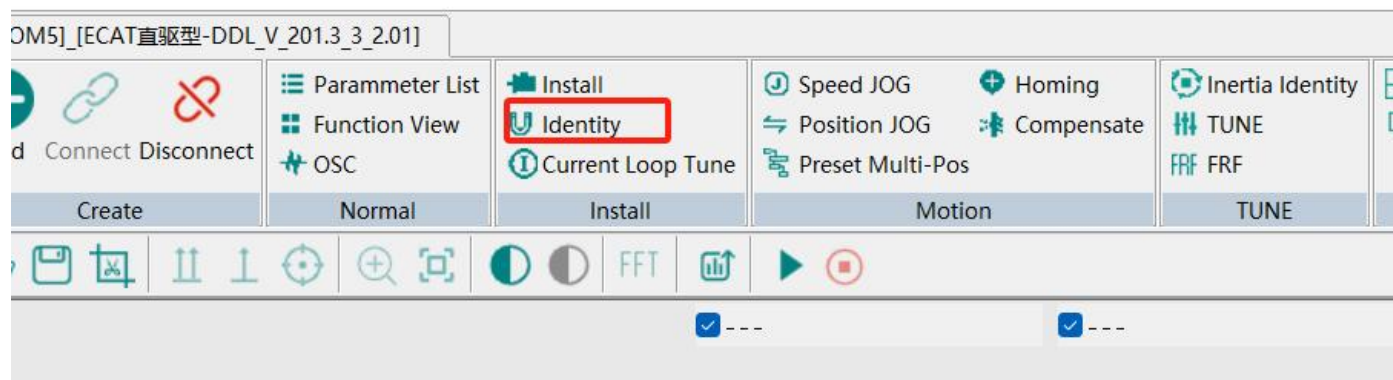
If the motor's continuous current and peak current are set correctly, just keep both overload current and overload protection gain at 100%.

The smaller the motor overload current compression ratio setting, the quicker the alarm, equivalent to the overload level.

The smaller the motor overload protection gain setting, the quicker the alarm, equivalent to overload sensitivity.

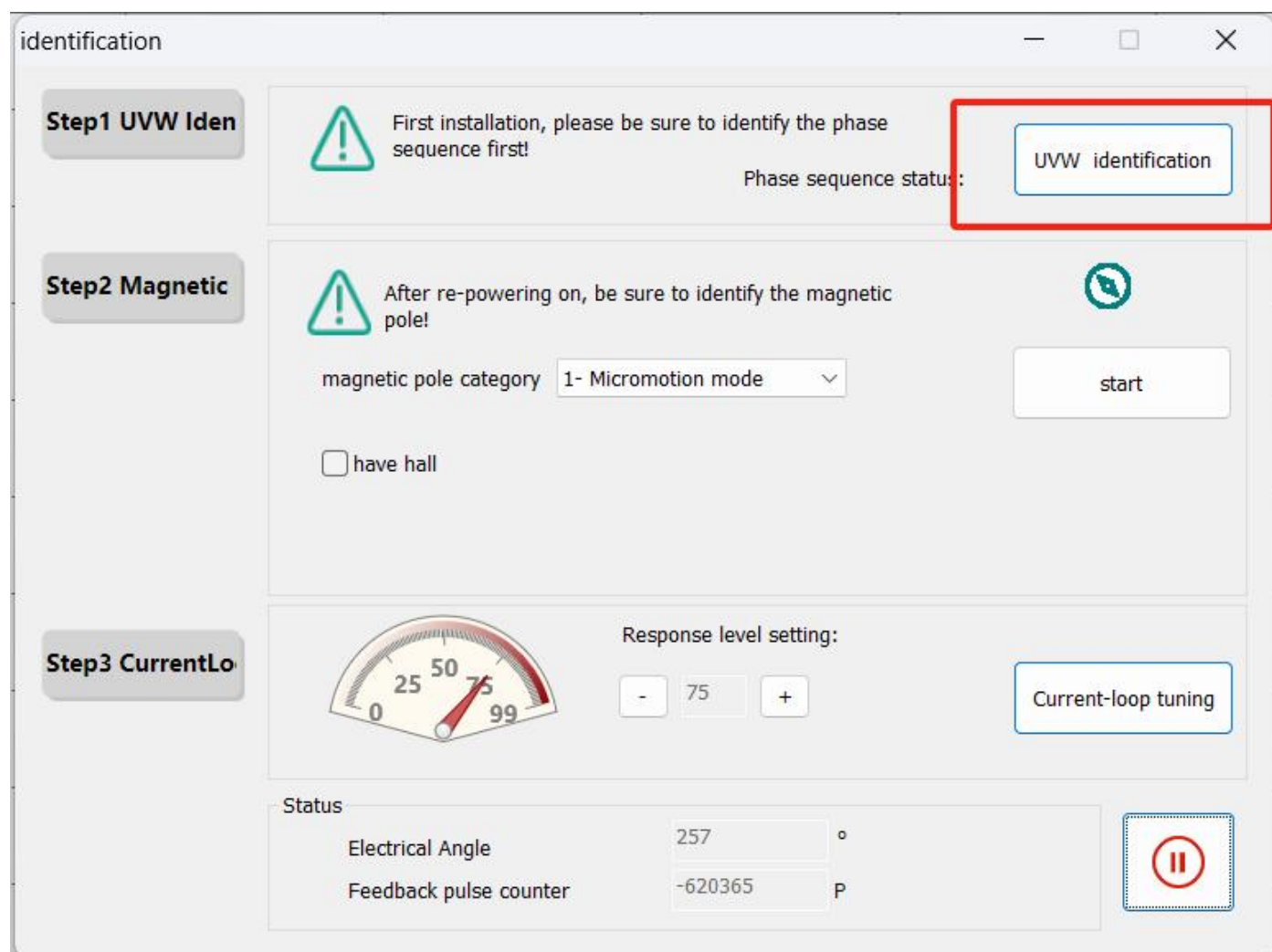
2.3 Pole identification and Current Loop Tuning

DriverStart - [Not found]



Click on the “Identify” function.

2.3.1 Phase Sequence Identification



Only identify once when matching the motor for the first time

2.3.2 Magnetic Pole Identification

The screenshot shows the 'identification' window with three steps: Step1 UVW Iden, Step2 Magnetic, and Step3 CurrentLo. Step2 Magnetic is the active step, highlighted with a red box around the 'start' button. The interface includes a warning icon and text: 'After re-powering on, be sure to identify the magnetic pole!'. Below this, there is a dropdown menu for 'magnetic pole category' set to '1- Micromotion mode' and a checkbox for 'have hall' which is unchecked. A gauge is visible in Step3, and a 'Response level setting' section with a value of 75. At the bottom, a 'Status' section shows 'Electrical Angle' as 257 and 'Feedback pulse counter' as -620365. A 'start' button is highlighted with a red box, and a 'stop' button is visible at the bottom right.

identification

Step1 UVW Iden

First installation, please be sure to identify the phase sequence first!

Phase sequence status: UVW identification

Step2 Magnetic

After re-powering on, be sure to identify the magnetic pole!

magnetic pole category 1- Micromotion mode

☐ have hall

Step3 CurrentLo

Response level setting: 75

Current-loop tuning

Status

Electrical Angle 257 °

Feedback pulse counter -620365 P

start

stop

For ABZ encoders, the motor needs to be manually identified each time when it is powered on. If the motor is enabled without identification, the drive will automatically perform a pole identification. Alternatively, you can set P1E01=1 to automatically perform an angle identification each time when it is powered on.

For BISS protocol encoders, identification only needs to be performed once during the initial motor matching.

2.3.3 Current Loop Tuning

Step1 UVW Iden



First installation, please be sure to identify the phase sequence first!

Phase sequence status: UVW identification

Step2 Magnetic



After re-powering on, be sure to identify the magnetic pole!

magnetic pole category 1- Micromotion mode

☐ have hall

start

Step3 CurrentLo



Response level setting: - 75 +

Current-loop tuning

Status

Electrical Angle 257 °

Feedback pulse counter -620365 P



Initial motor matching requires once current loop tuning. The default response level settings are sufficient for most scenarios but can be adjusted according to your needs before clicking on current loop tuning.

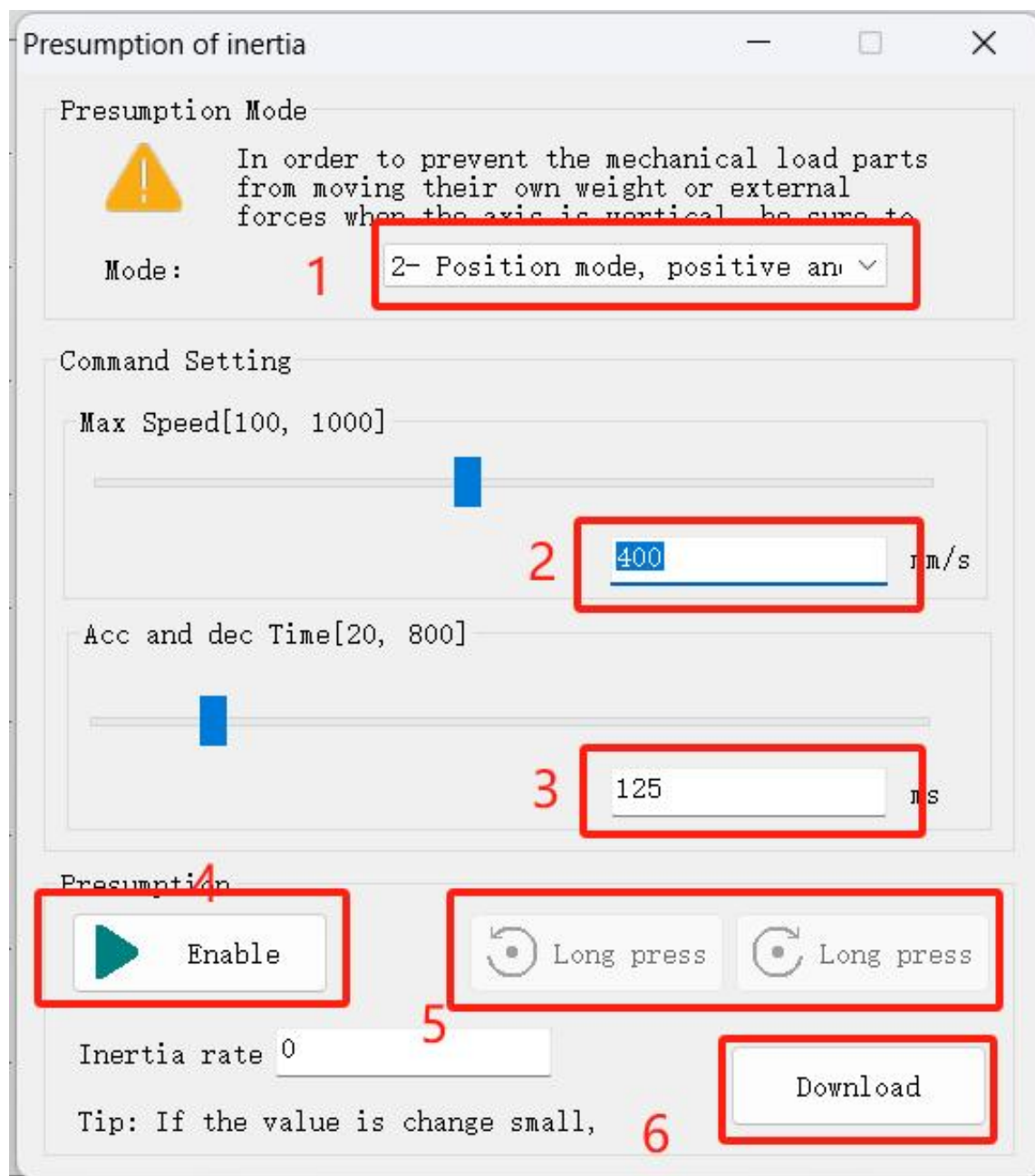
2.4 Gain Adjustment

Use manual gain adjustment. And the effect of gain adjustment can be verified through using an oscilloscope to capture waveforms and check if they meet the requirements.

2.4.1 Manual Gain Adjustment

Step1: Set P1A00 to "1" to be standard stiffness.

Step2: Click on "Inertia Identify" to open the inertia presumption function. Select the "inertia presumption mode", set the presumption curve, click "enable", then long press either forward or reverse, and wait for the presumption inertia ratio result. Once the result is identified, please disable the motor, and click "download".



The screenshot shows the 'Presumption of inertia' window with the following elements and annotations:

- Presumption Mode:** Includes a warning icon and text: "In order to prevent the mechanical load parts from moving their own weight or external forces when the axis is vertical, be sure to".
- Mode:** A dropdown menu showing "2- Position mode, positive an" with a red box and annotation **1**.
- Command Setting:**
 - Max Speed[100, 1000]:** A slider and input field showing "400" mm/s with a red box and annotation **2**.
 - Acc and dec Time[20, 800]:** A slider and input field showing "125" ms with a red box and annotation **3**.
- Presumption:**
 - An **Enable** button with a play icon, highlighted with a red box and annotation **4**.
 - Two **Long press** buttons with circular arrows, highlighted with a red box and annotation **5**.
 - An **Inertia rate** input field showing "0" with a red box and annotation **5**.
 - A **Download** button highlighted with a red box and annotation **6**.
- Tip:** "If the value is change small," with a red box and annotation **6**.

Step3: Adjust the P1A01 response level and the P1A31 model gain (model control enable is set to default on). Set the stiffness from low to high. In the case of meeting the requirements, try to set the stiffness to a middle value. If it is too low, the positioning completion time will be long, will go with significant trailing deviation. If it is too high, there will be overshooting and possible to lead to oscillation.

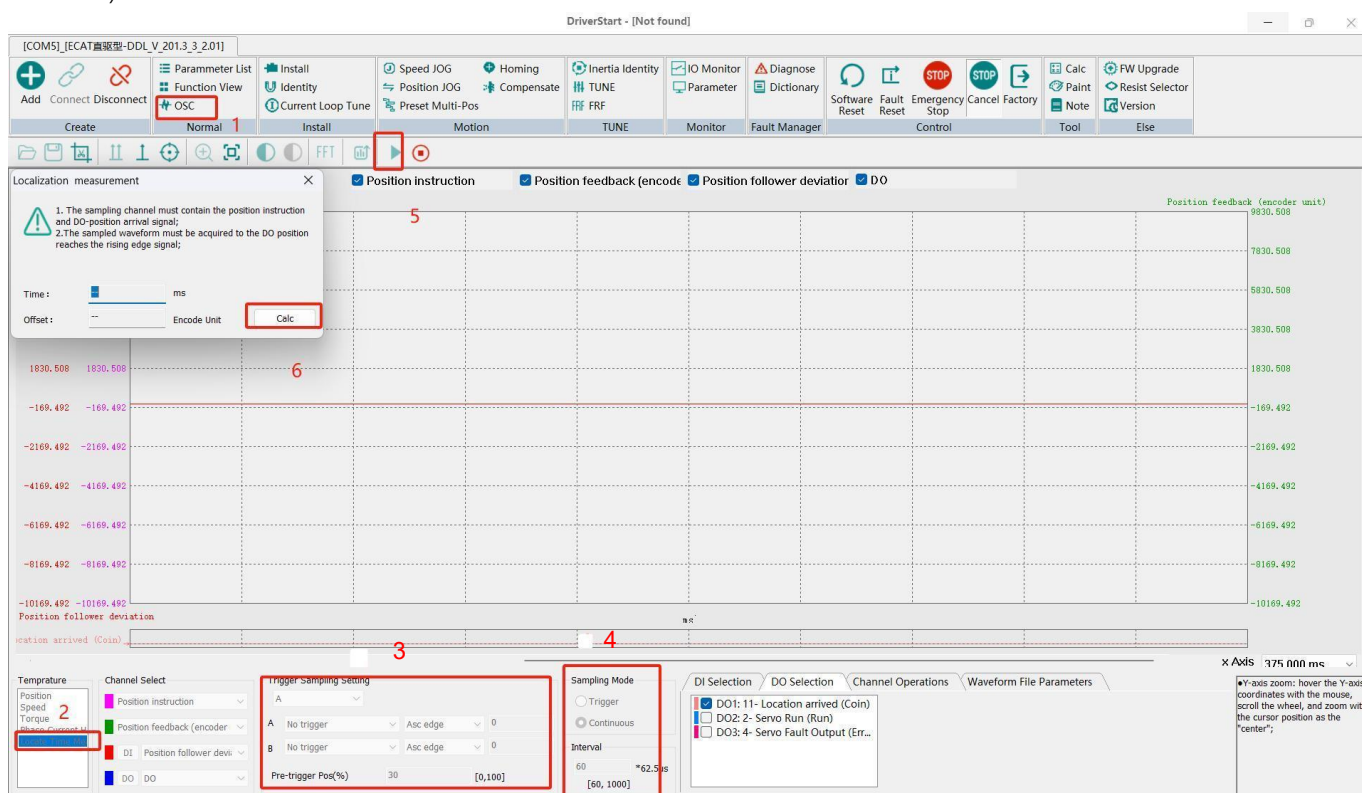
If the positioning completion time is too long or the following deviation during startup and positioning is too large, you can improve it by increasing the model gain. If increasing the model gain causes overshooting, you can appropriately reduce the model gain.

Step 4: If the speed feedback noise is too high, you can set P1A48 to enable speed observation function.

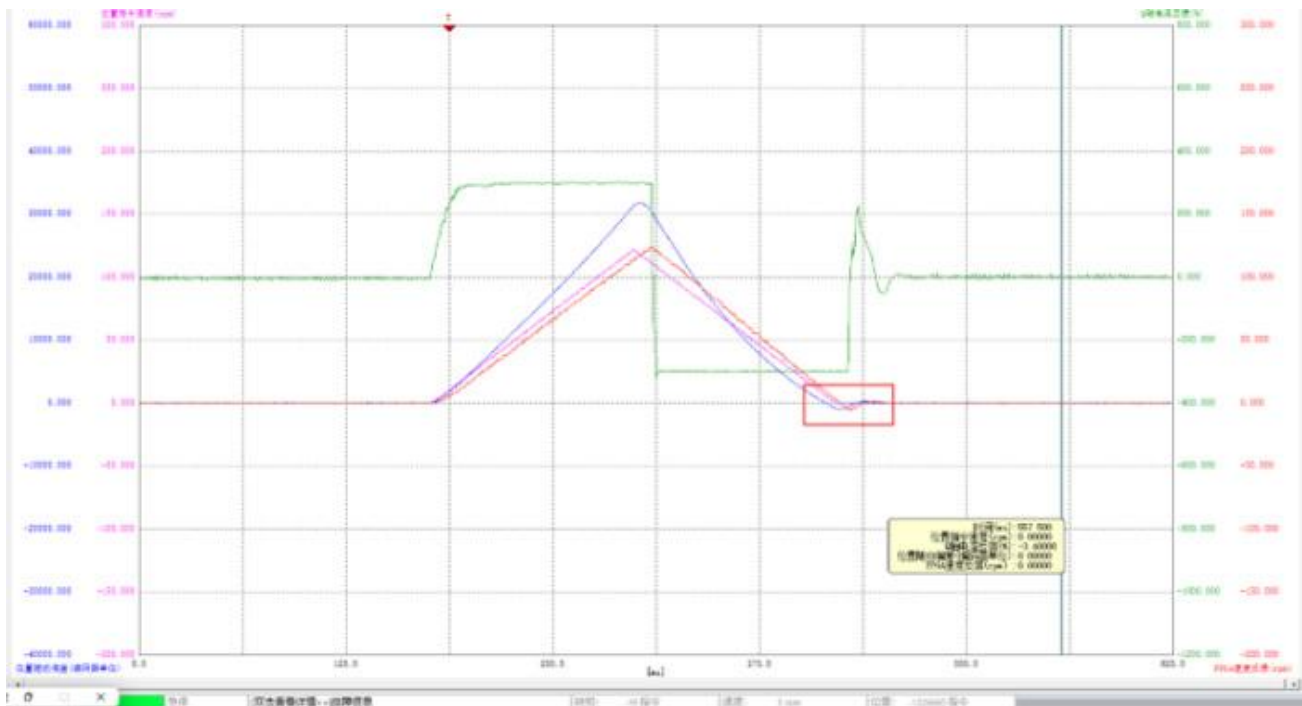
2.4.2 Oscilloscope Verification

Step 1:

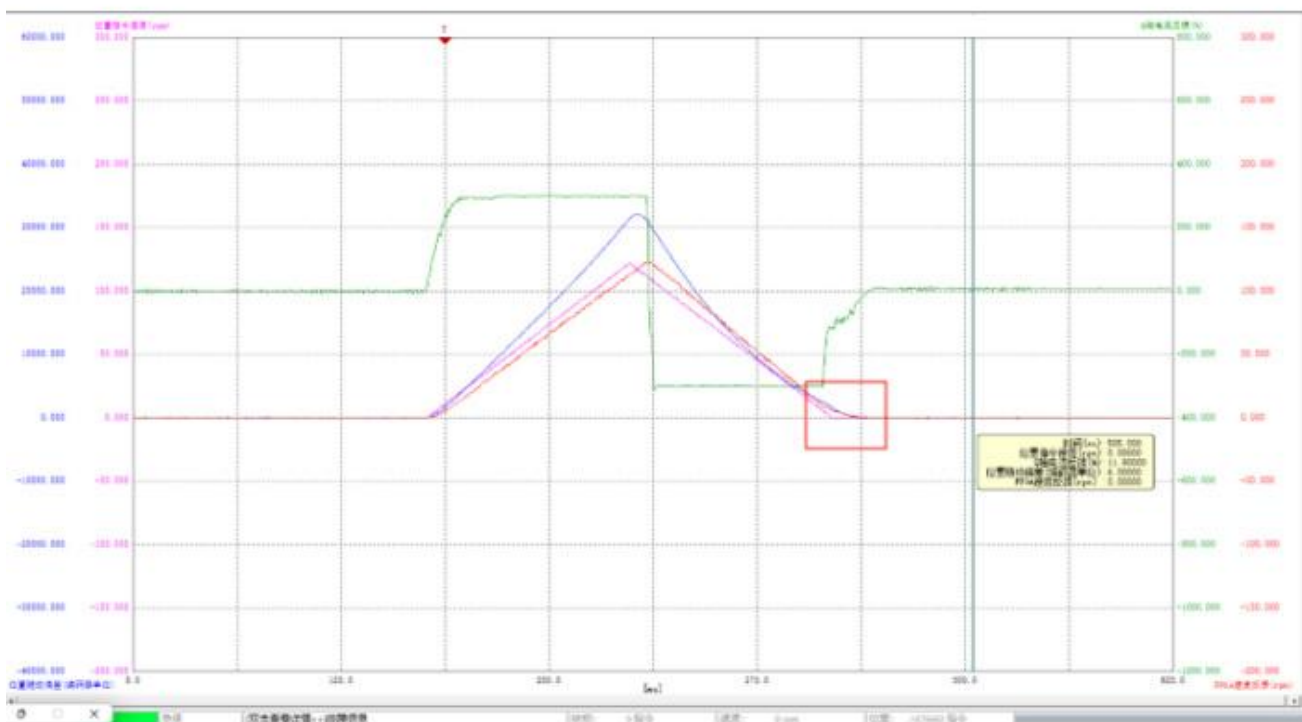
- 1.Click "OSC"
- 2.Select the "Locate time measurement".
- 3.Choose the sampling mode as "trigger" and set the "interval".
- 4.Set the trigger conditions.
- 5.Click the "►" to wait for the trigger to complete.
- 6.After the data acquisition is complete, click "calculate" to check if the positioning time meets the requirements, and verify if the waveform shows any overshoot or trailing. (Position arrival judgment range: bus setting is 6067, pulse setting is P1308.)



Step 2: Diagram of Poor Waveform



Overshoot waveform ↵



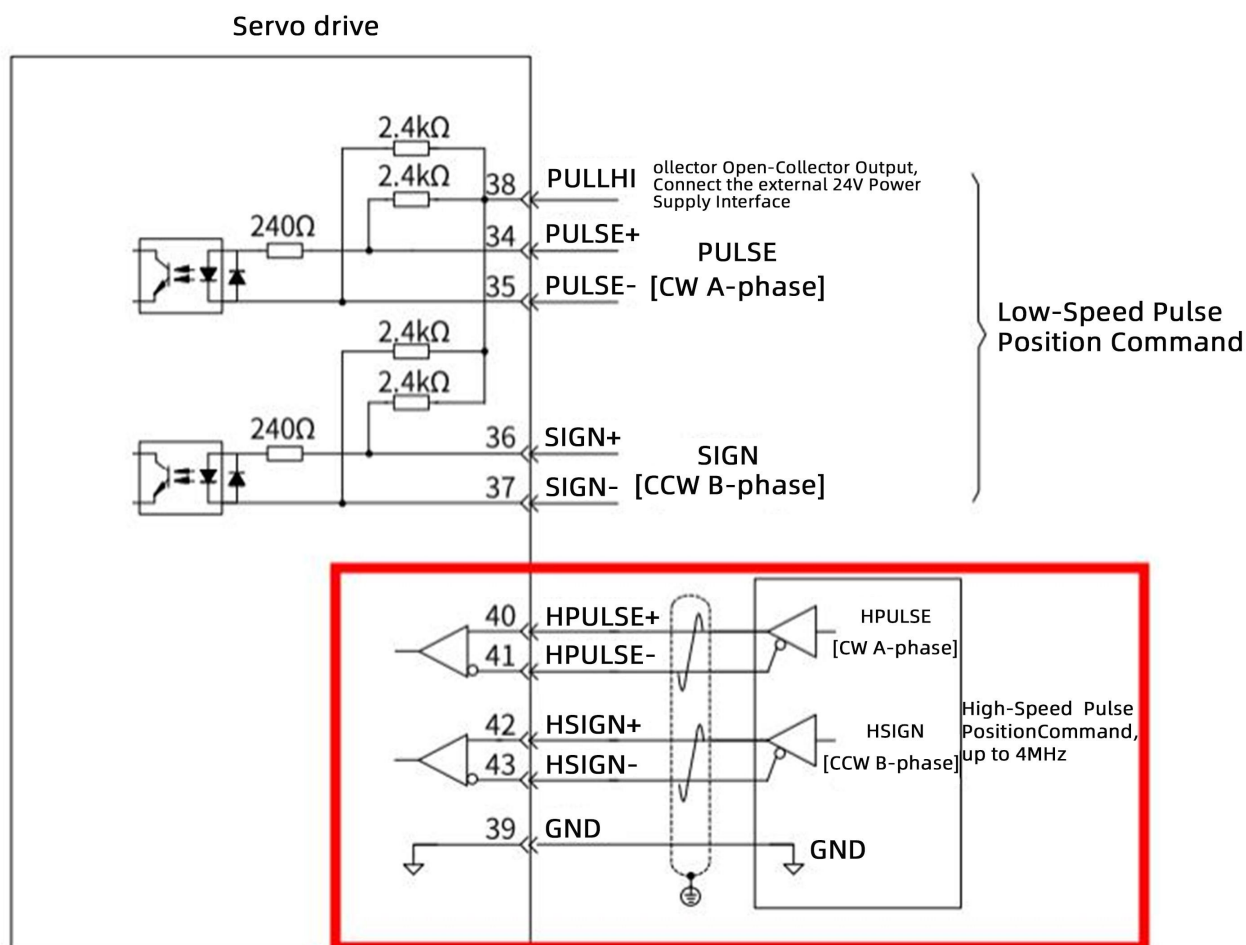
Trailing waveform ↵

Step 3: If the waveform does not show overshoot or trailing and the positioning time meets the requirements, it is considered satisfactory.

2.5 Position Control Modes

2.5.1 High-Speed Differential Mode (Single Channel 4MHz)

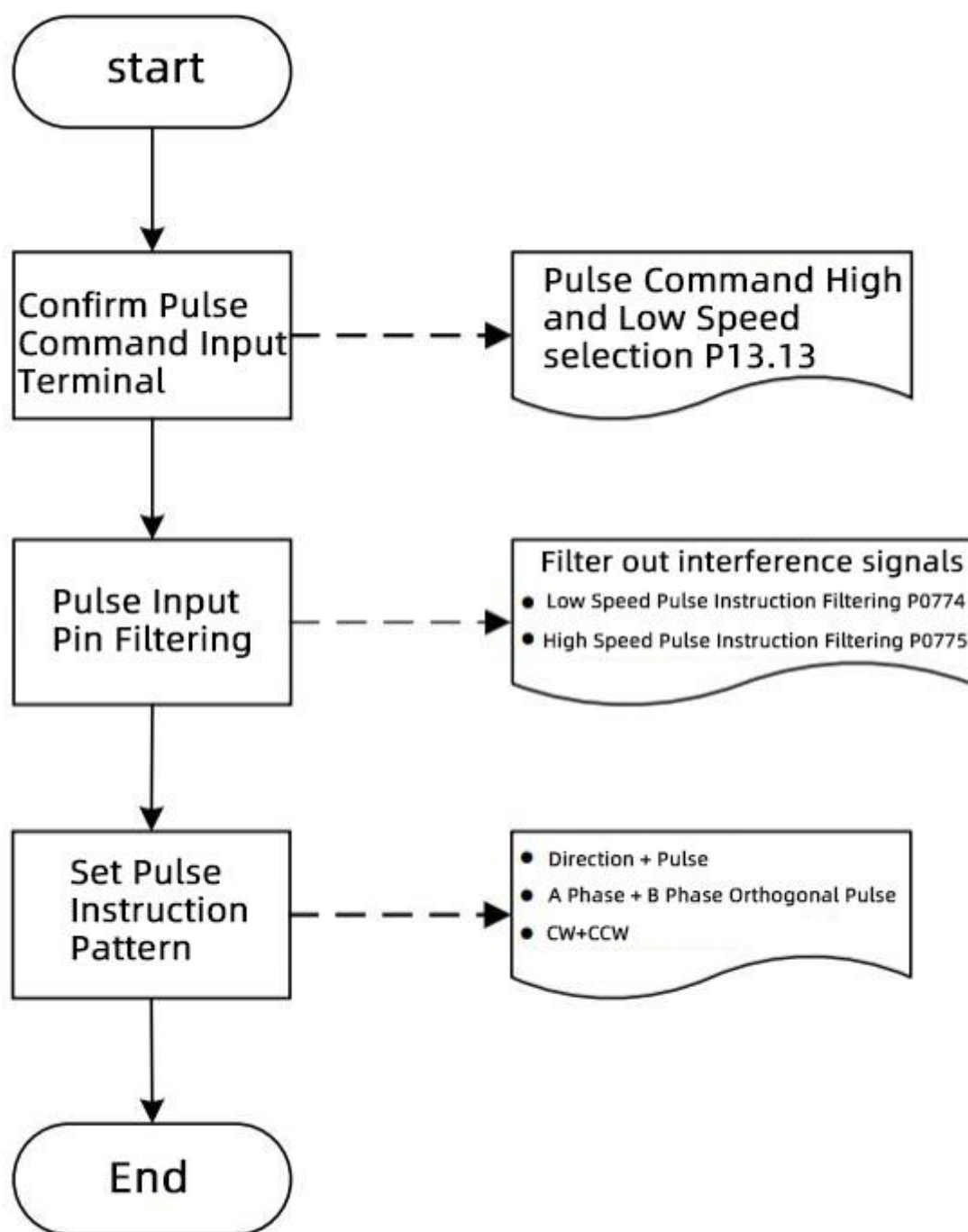
Step1: Wiring



Note: Different models of drives have different interfaces; refer to the manual for the specific model.

Step 2: Set P0400 to "1" for Position Mode, and P1300 to "0" for Pulse Command.

Step 3: Set Pulse Instruction Pattern in P1314.

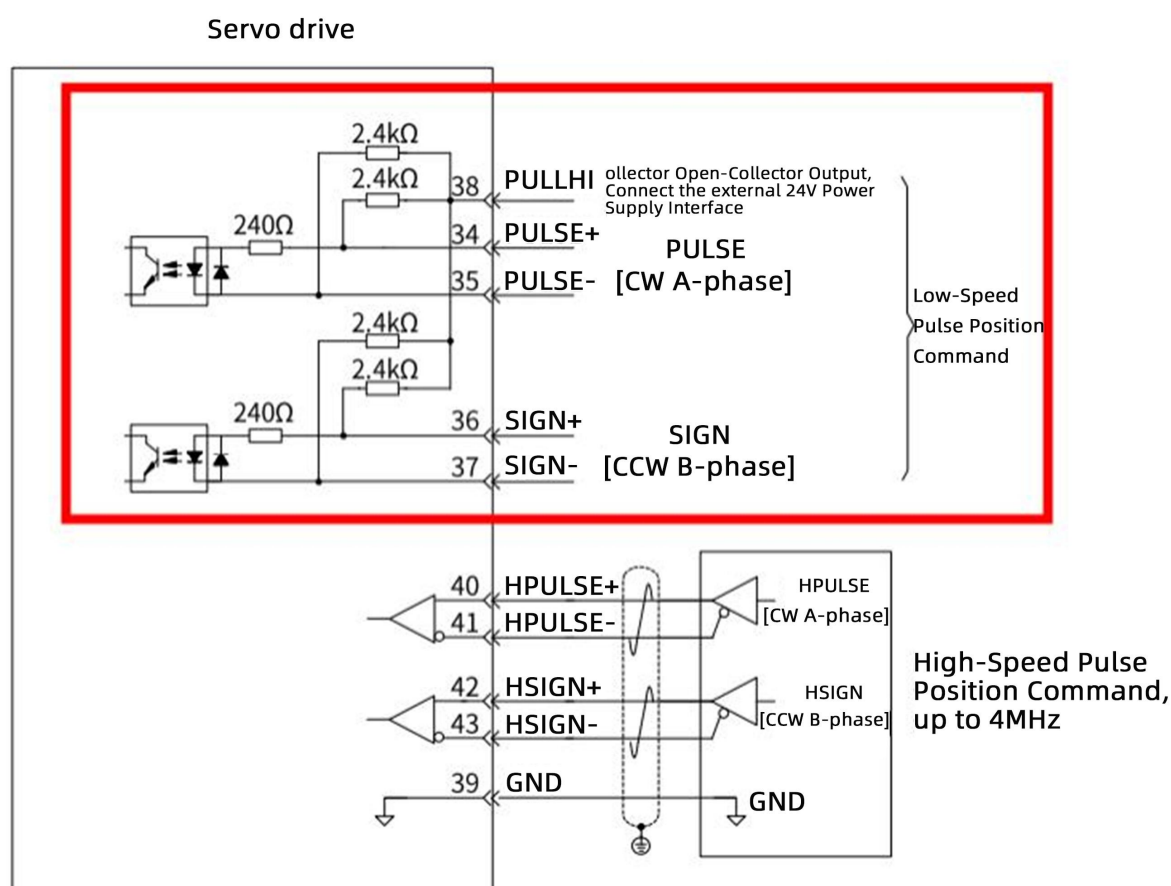


Step 4: Set the Gear Ratio. P1303 and P1305 will only be effective when P1301=0.

P1301	The motor runs 1mm c...	--	--	0	1P/mm
P1303	Electron tooth ratio mol...	--	--	1	-
P1305	Electronic tooth is more ...	--	--	1	-

2.5.2 Low-Speed Collector Mode (200KHz)

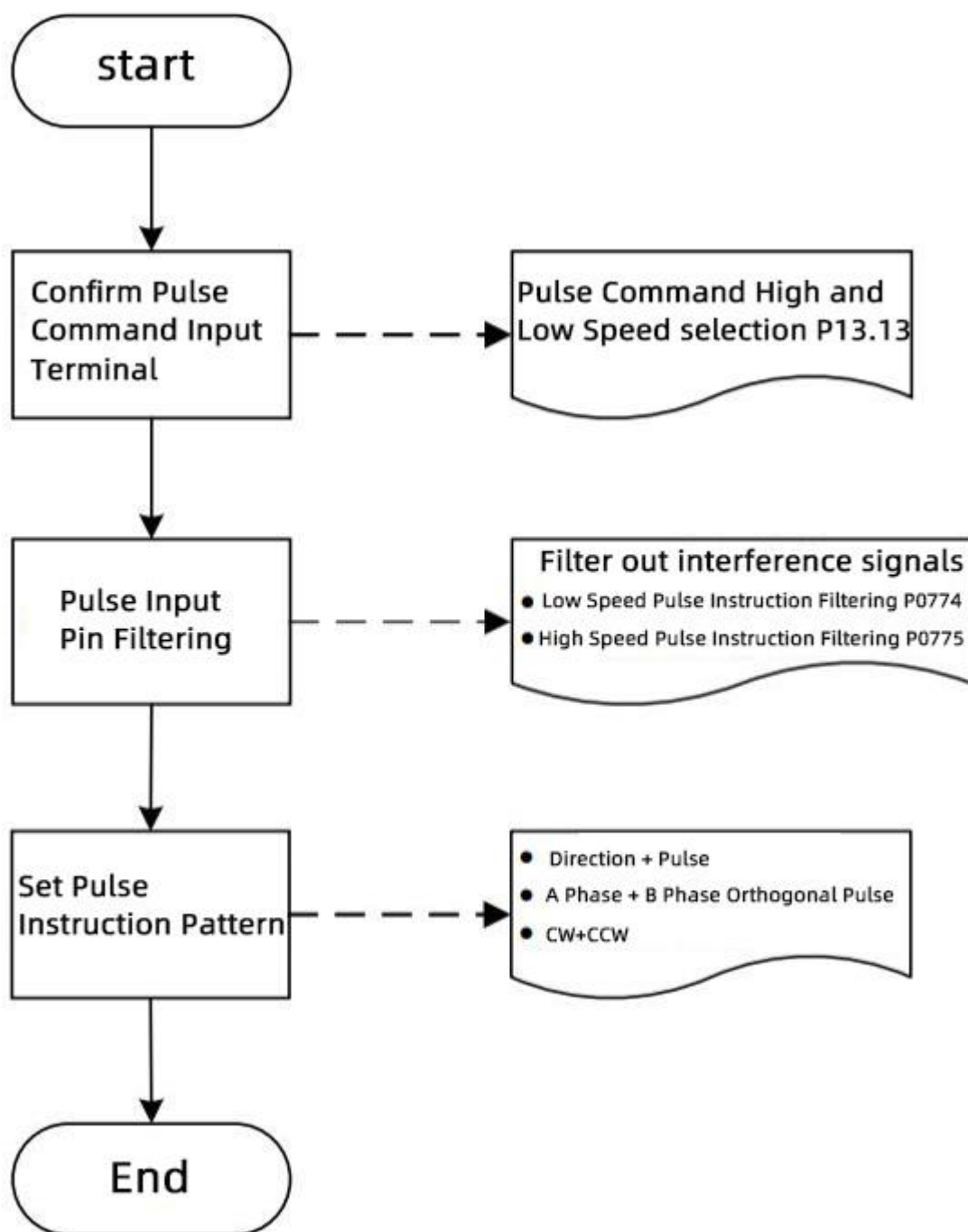
Step1: Wiring



Note: Different models of drives have different interfaces; refer to the manual for the specific model.

Step 2: Set P0400 to "1" for Position Mode, and P1300 to "0" for Pulse Command.

Step 3: Set Pulse Instruction Pattern in P1314.



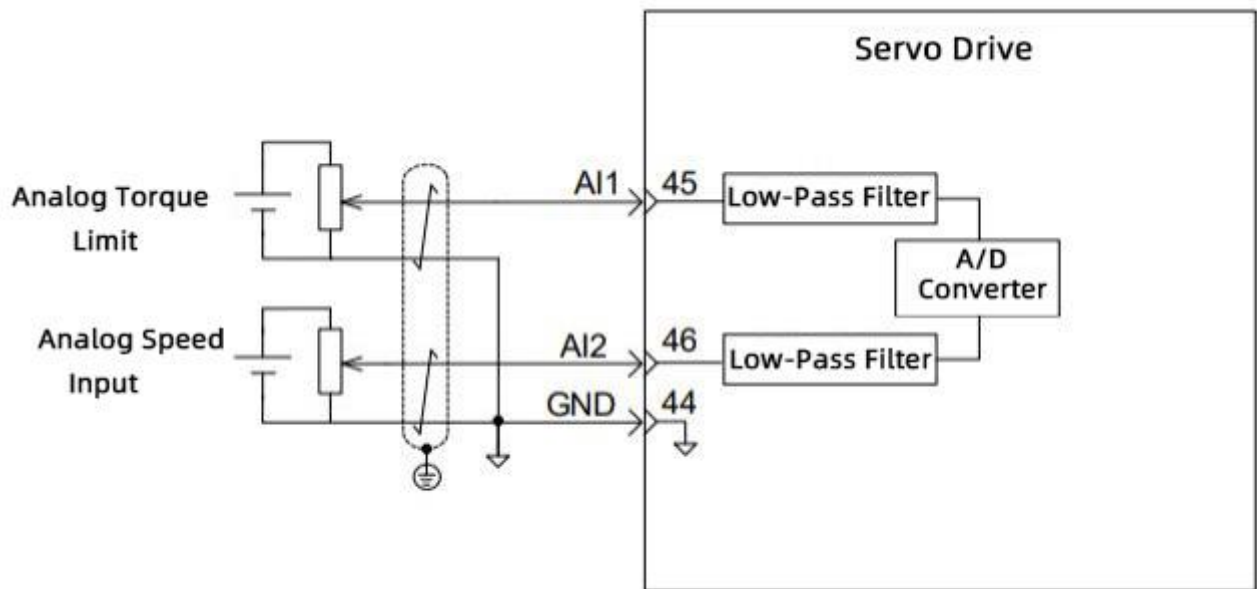
Step 4: Set the Gear Ratio. P1303 and P1305 will only be effective when P1301=0.

P1301	The motor runs 1mm c...	--	--	0	1P/mm
P1303	Electron tooth ratio mol...	--	--	1	-
P1305	Electronic tooth is more ...	--	--	1	-

2.6 Analog Control

2.6.1 Analog Speed Control

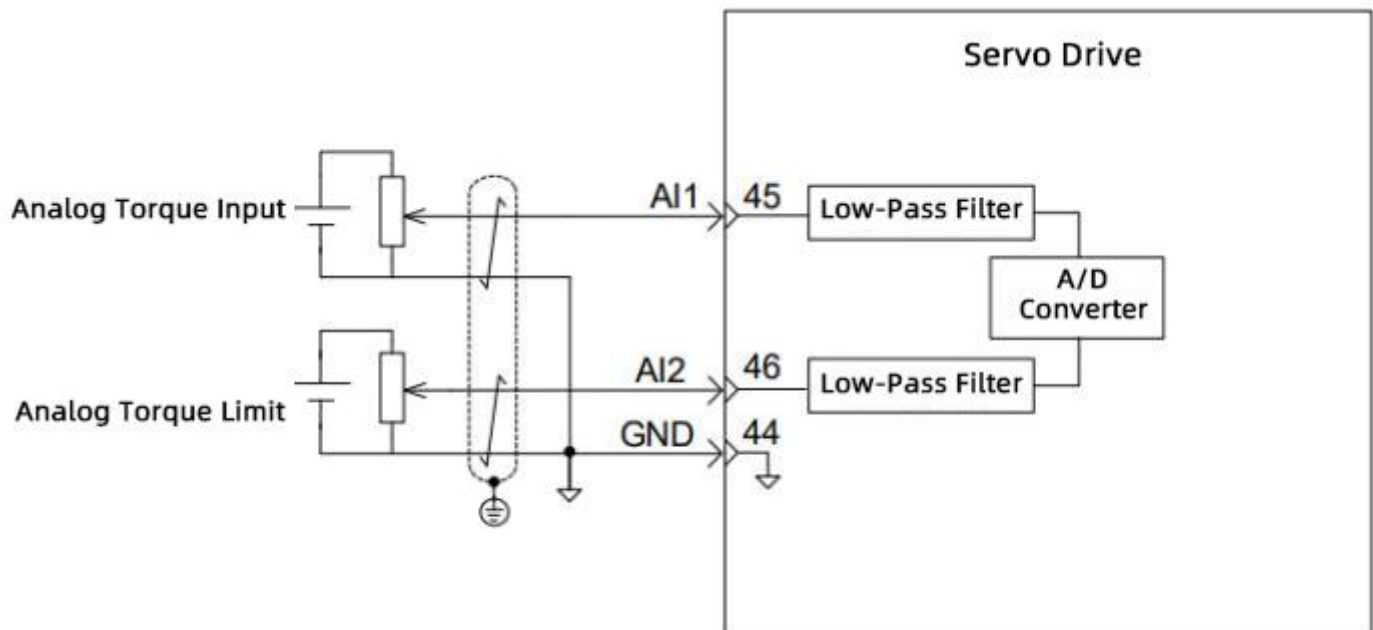
Step1: IO wiring.



Note: Different models of drives have different interfaces; refer to the manual for the specific model.

2.6.2 Analog Torque Control

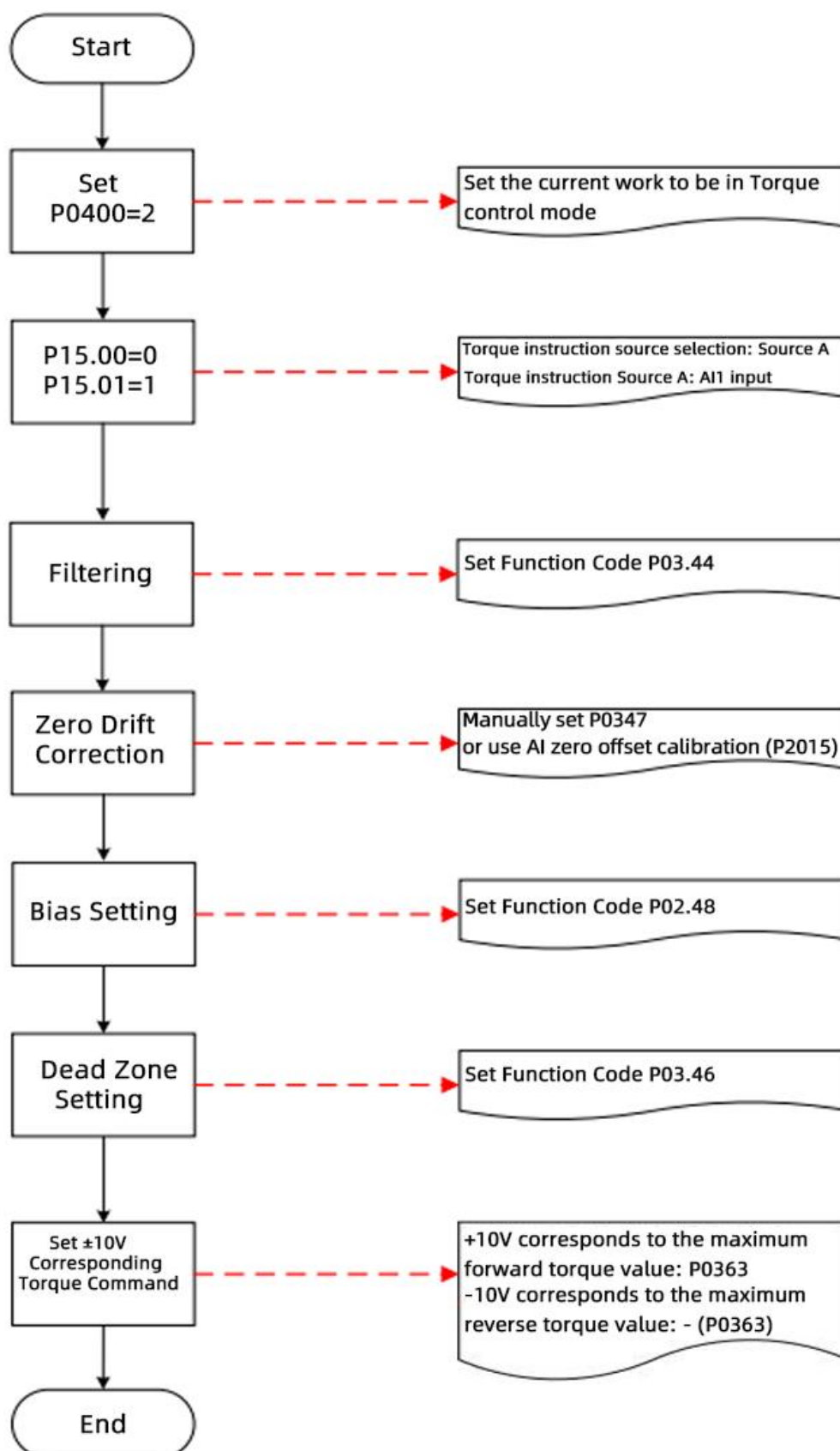
Step1: IO wiring.



Note: Different models of drives have different interfaces; refer to the manual for the specific model.

Step2: Parameter Setting.

Taking AI1 as an example to explain the method for setting the Torque command with analog voltage.

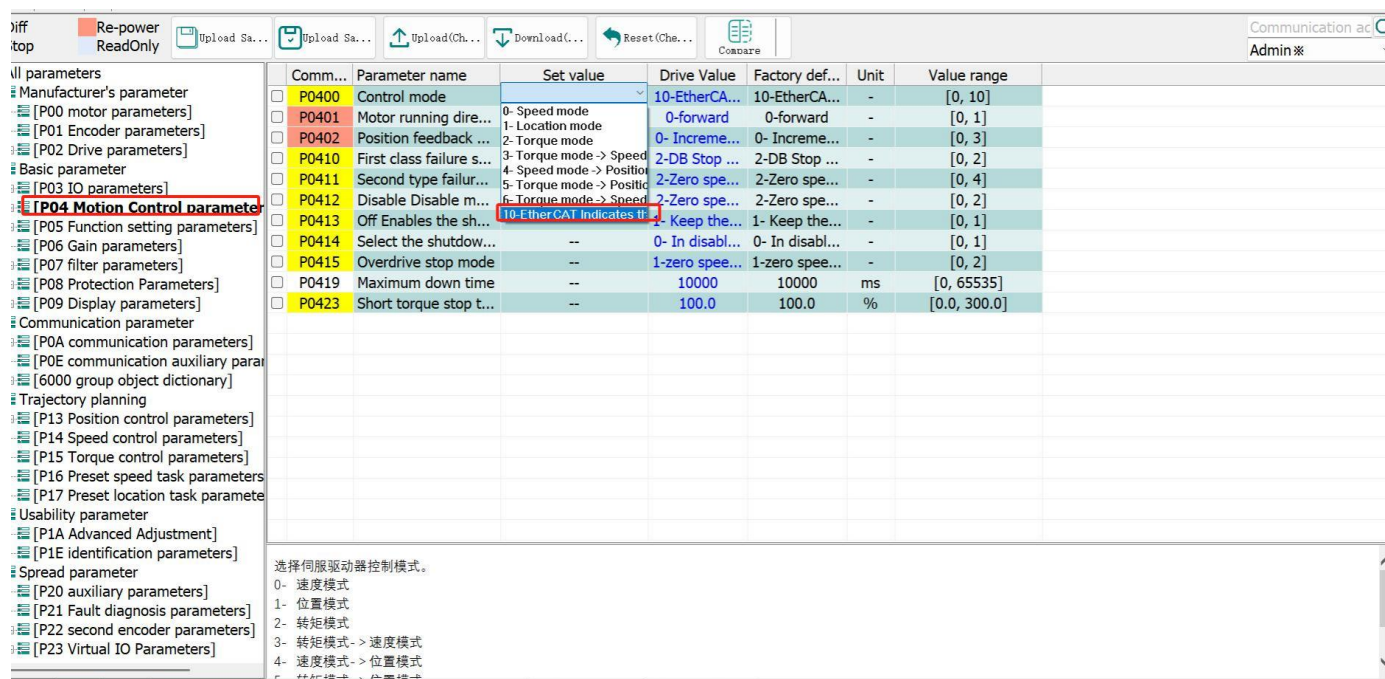


2.7 EtherCAT Type Control

Step 1: In the beginning, ensure that the motor is running properly and the gain is adjusted correctly.

Step 2: Import the correct XML file into the directory of the PLC.

Step 3: Set the drive to EtherCAT control mode.



Comm...	Parameter name	Set value	Drive Value	Factory def...	Unit	Value range
☐ P0400	Control mode	10-EtherCA...	10-EtherCA...	-	-	[0, 10]
☐ P0401	Motor running dire...	0-Speed mode	0-forward	0-forward	-	[0, 1]
☐ P0402	Position feedback ...	1-Location mode	0-Increme...	0-Increme...	-	[0, 3]
☐ P0410	First class failure s...	2-Torque mode	2-DB Stop ...	2-DB Stop ...	-	[0, 2]
☐ P0411	Second type failur...	3-Torque mode -> Speed	2-Zero spe...	2-Zero spe...	-	[0, 4]
☐ P0412	Disable Disable m...	4-Speed mode -> Positi	2-Zero spe...	2-Zero spe...	-	[0, 2]
☐ P0413	Off Enables the sh...	5-Torque mode -> Speed	1-Keep the...	1-Keep the...	-	[0, 1]
☐ P0414	Select the shutdown...	6-Torque mode -> Speed	0-In disabl...	0-In disabl...	-	[0, 1]
☐ P0415	Overdrive stop mode	--	1-zero spee...	1-zero spee...	-	[0, 2]
☐ P0419	Maximum down time	--	10000	10000	ms	[0, 65535]
☐ P0423	Short torque stop t...	--	100.0	100.0	%	[0.0, 300.0]

选择伺服驱动器控制模式。
 0- 速度模式
 1- 位置模式
 2- 转矩模式
 3- 转矩模式 -> 速度模式
 4- 速度模式 -> 位置模式

Set the function code P0400 to "10".

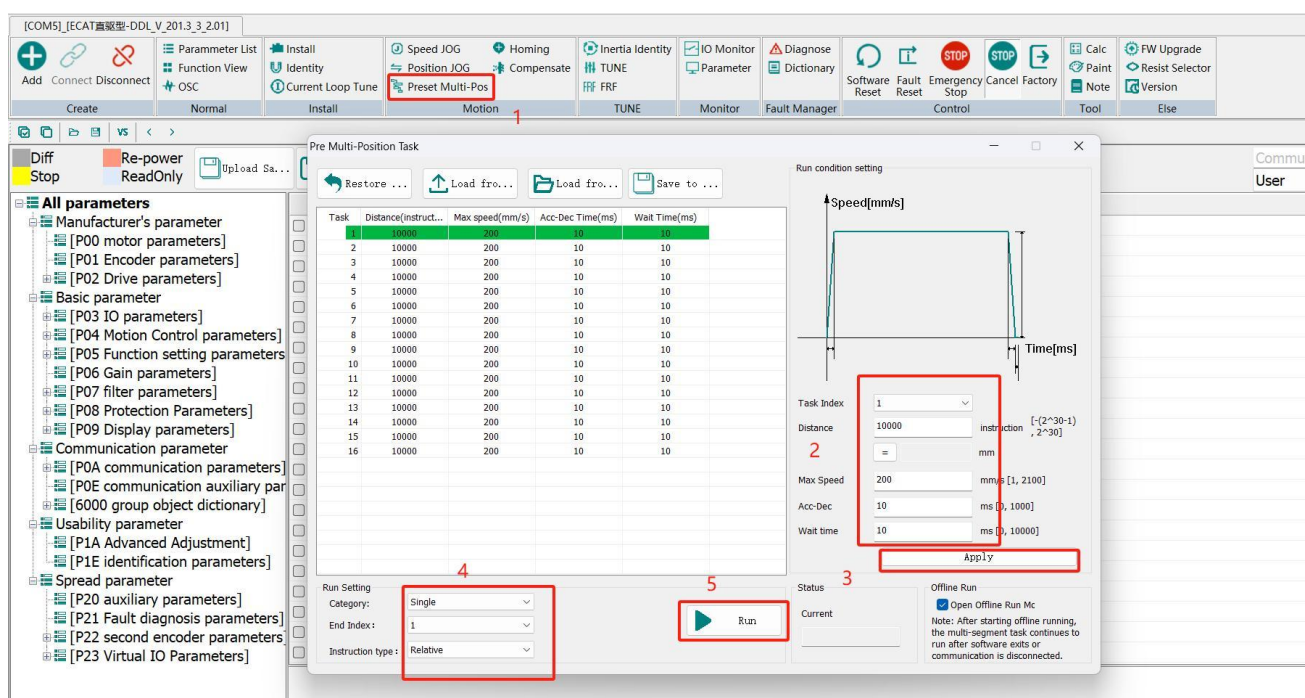
2.8 ProfiNet Type Control

Refer to the RD5 PN servo drive user guide.

2.9 Preset Positions and Homing

2.9.1 Preset Position Tasks

- Step1: Open the “preset Multi-position” task.
- Step2: Select the task segment to be configured.
- Step3: Set the corresponding running parameters for the task segment.
- Step4: Set the operating conditions.
- Step5: Operate the preset position task.
- Step6: Before operation, select offline operation if needed.

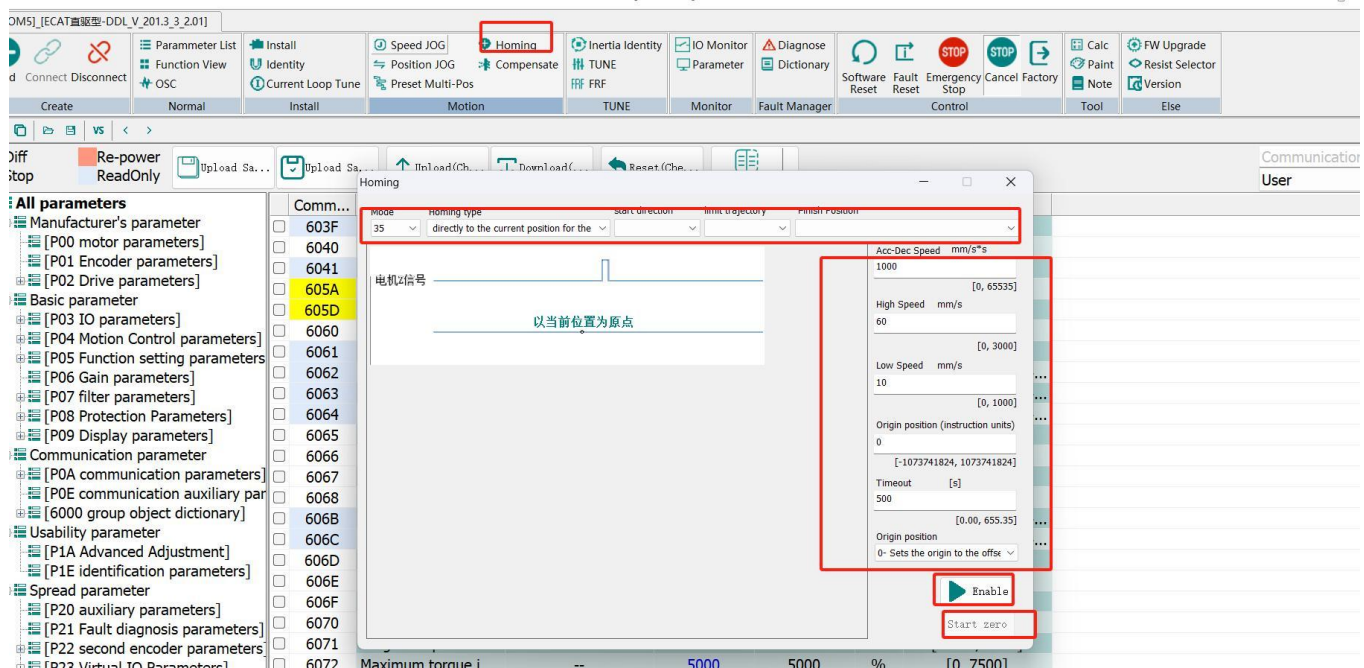


The screenshot displays the 'Pre Multi-Position Task' configuration window. The interface is divided into several sections:

- Top Toolbar:** Contains buttons for various functions like 'Add', 'Connect', 'Disconnect', 'Parameter List', 'Function View', 'OSC', 'Install', 'Identity', 'Current Loop Tune', 'Speed JOG', 'Position JOG', 'Preset Multi-Pos' (highlighted with a red box and number 1), 'Homing', 'Compensate', 'Inertia Identity', 'TUNE', 'FRF', 'IO Monitor', 'Parameter', 'Diagnose', 'Dictionary', 'Software Reset', 'Fault Reset', 'Emergency Stop', 'Cancel Factory', 'Calc', 'Paint', 'Note', 'FW Upgrade', 'Resist Selector', and 'Version'.
- Left Sidebar:** Lists various parameter categories such as 'Manufacturer's parameter', 'Basic parameter', 'Communication parameter', 'Usability parameter', and 'Spread parameter'. The 'Preset Multi-Pos' task is selected.
- Central Table:** A table with columns: Task, Distance (instruction), Max speed (mm/s), Acc-Dec Time (ms), and Wait Time (ms). It lists 16 tasks, each with a distance of 10000, max speed of 200, and wait time of 10.
- Right Sidebar:** Contains 'Run condition setting' and 'Run Setting' sections. The 'Run condition setting' section includes a graph of Speed (mm/s) vs Time (ms) and fields for Task Index, Distance, Max Speed, Acc-Dec, and Wait time. The 'Run Setting' section includes 'Category' (Single), 'End Index' (1), and 'Instruction type' (Relative). A red box and number 2 highlight the 'Distance' field. A red box and number 3 highlight the 'Apply' button. A red box and number 4 highlight the 'Run' button. A red box and number 5 highlight the 'Offline Run' checkbox.

2.9.2 Background Homing

- Step1: Open the "Homing"
- Step2: Select the "Homing type"
- Step3: Set the homing trajectory curve.
- Step4: Enable the motor.
- Step5: Click "Start Homing" and wait for the process to complete.



2.10 Common Software Operation Alarms

Fault Subcode and Description	Fault Cause	Troubleshooting Measures
E-018-0 Manufacturer's parameters out of range	1. Software has been updated, the current value of the function code exceeds the allowable range. 2. EEPROM fault. 3. Sevo drive fault.	1. Power up again, rewrite parameters after initializing system parameters (P0501=1). 2. Replace the servo drive.
E-212-0 Phase Sequence Error	1. During angle identification by the driver, the UVW phase sequence of the driver and motor does not match.	1. Correctly connect the UVW cables in the right phase sequence. Perform phase sequence identification.
E-213-0 Galloping fault	1. Incorrect UVW phase sequence wiring. 2. Power-up interference causing incorrect initial rotor phase of the motor. 3. Encoder model error or wiring error. 4. Excessive gravitational load on the vertical axis.	1. Correctly connect the UVW cables in the right phase sequence. 2. Power up and down again, redo the angle self-learning. 3. Replace with matching drive and motor, and correctly set the motor model. 4. Check if the encoder and motor cables are connected correctly. 5. Reduce the vertical axis load, increase rigidity, or shield the fault without compromising safety and usability. 6. Perform phase sequence identification.
E-910-1 Encoder communication error during Power-On	1. The type of the driver and motor do not match. 2. Error in parameter verification or absence of parameters stored in the ROM of the bus-type incremental encoder.	1. Replace with matching drive and motor. 2. Check the encoder cable, please use our standard encoder cable. Separate encoder and power line routing.
E-411-0 Duplicate DI Function Assignment	1. Same function assigned to multiple DI terminals when assigning DI functions.	1. Reassign DI functions to avoid duplicates.
E-411-1 DI Function Assignment Exceeds Defined Range	1. DI function number exceeds the total number of available DI functions. 2. DI function not supported.	1. After restoring system parameters to default (P0501=1), power on again. 2. Do not assign DI function numbers beyond the DIDO function definition table.
E-412-0 DO Function Assignment Exceeds Defined Range	1. DO function number exceeds the total number of available DO functions.	1. Restore factory parameters and power on/off again.
E-416-0 Speed Exceeds Maximum Speed	1. Incorrect phase sequence of motor cables U, V, W. 2. Incorrect motor or encoder parameter settings, such as pole pairs, encoder resolution, etc. 3. Motor Magnetic pole identification not performed. 4. Input command exceeds over-speed fault threshold. 5. Motor speed loop overshoot.	1. Wire the U, V, W phases correctly. 2. Set motor parameters or encoder resolution correctly. 3. Increase power supply capacity. 4. Perform gain adjustment again. 5. Decrease the electronic gear ratio if feasible while meeting requirements. 6. Set the speed limit threshold within the over-speed threshold.
E-712-0 Pole Recognition Fault	1. Motor pole identification failed.	1. Disconnect the motor shaft and perform pole identification again.
E-216-0 STO Terminal Not Connected	1. STO not connected, causing STO to take effect.	1. Correctly wire the STO. 2. Replace the servo drive.

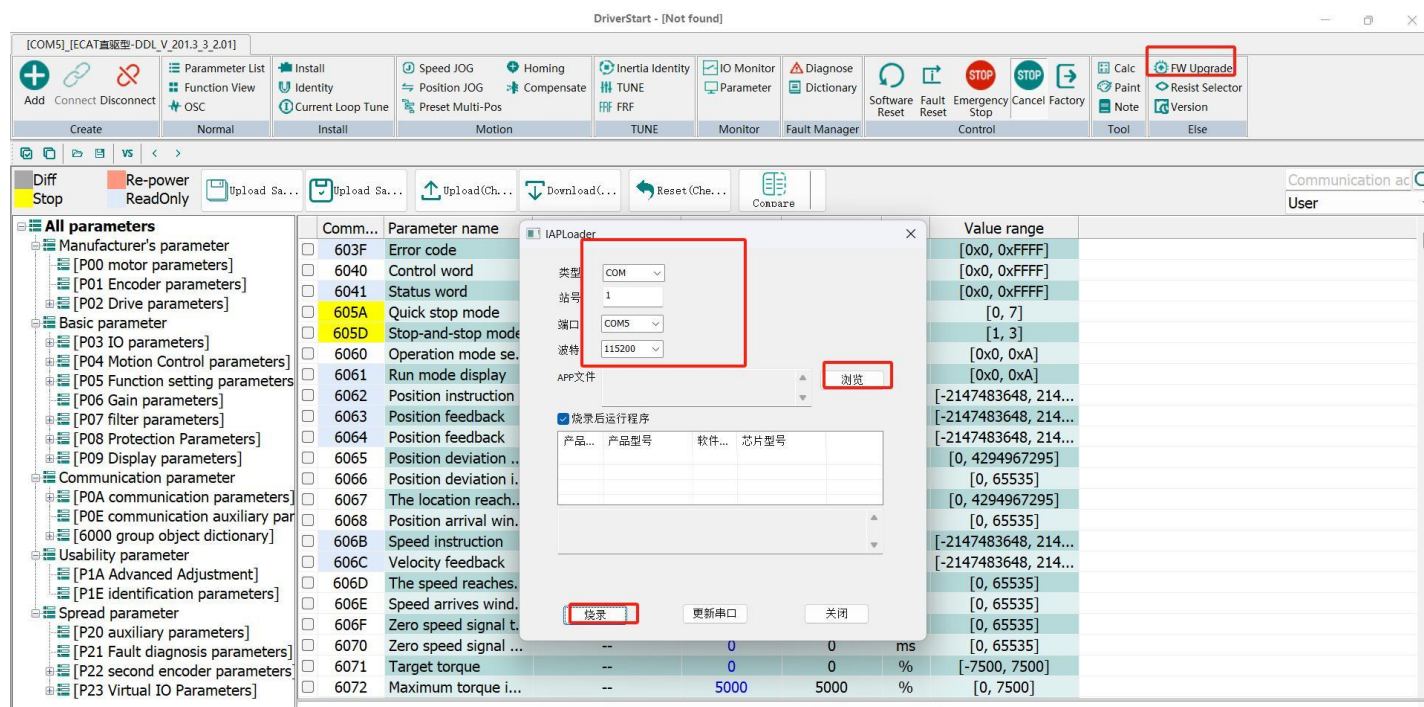
Fault Subcode and Description	Fault Cause	Troubleshooting Measures
E-218-0 Servo Emergency Stop Fault	1.DI Function 2: Emergency stop triggered. 2.Background communication emergency stop triggered.	1.Check the operating mode, confirm safety precautions, and release the DI brake effective signal (after releasing the emergency stop signal, this fault resets automatically).
E-418-0 Servo Redundant Enable	1.Communication servo enable is effective with internal enable.	1.Disable the servo enable signal from the PLC.
E-419-0 Drive Overload Fault	1.Parameter settings error. 2.Drive overload, excessive load inertia, or mechanical jamming. 3.Motor blocked.	1.Set the correct P0102 according to the drive model. 2.Adjust the parameters reasonably based on the current feedback effect. 3.Replace with a higher power drive. 4.Adjust the mechanical aspects to resolve mechanical jamming issues. 5.Refer to the troubleshooting method in E.B11.0.
E-420-0 Frequency Output Frequency Too High	1.Output pulse frequency exceeds the hardware's allowed frequency limit (single path 4MHz).	1.Reduce the encoder frequency output pulse count (P13.16). 2.Use shielded twisted pair cables to prevent interference pulses from overlapping with the real pulses and causing false fault reports.
E-424-0 Position Command Overspeed Multiple Times	1.The position command increment is too large. 2.Before mode switching or servo enablement, the target position (607A target position) is not aligned with the current position. 3.Sync loss leading to excessive accumulation of position commands. 4.Motor speed limit error.	1. Decrease the target position command increment 2. Before switching modes or enabling the servo, assign the current position value to the target position (607A target position). 3. Confirm whether the motor's maximum speed meets the application requirements.
E-D15-0 Incorrect setting of upper and lower limits of soft limits.	1.Soft limits lower value is greater than or equal to the upper value.	1.Reset the parameters to ensure that 607D-01h is less than 607D-02h (P0B45 is less than P0B47)
E-D16-0 Origin Offset Exceeds Soft Limit Range	1.Origin offset is outside the soft limit position range.	1.Reset parameters and properly set 607D-01h and 607D-02h.
E-D26-0 EtherCAT communication abnormality	1.While the servo is enabled, if there's an inadvertent operation or human error at the master station causing the EtherCAT network status to switch from OP to another state, the network state transition becomes abnormal.	1.Check the PLC network status switching program.
E-D26-1 EtherCAT communication abnormality	1.Due to hardware issues, when the EtherCAT network is in OP state, the synchronization signal SYNC is turned off.	1.Check the PLC network status switching program.

3. Faults and Troubleshooting

For details, refer to the background fault dictionary.

4. Special Instructions and Precautions

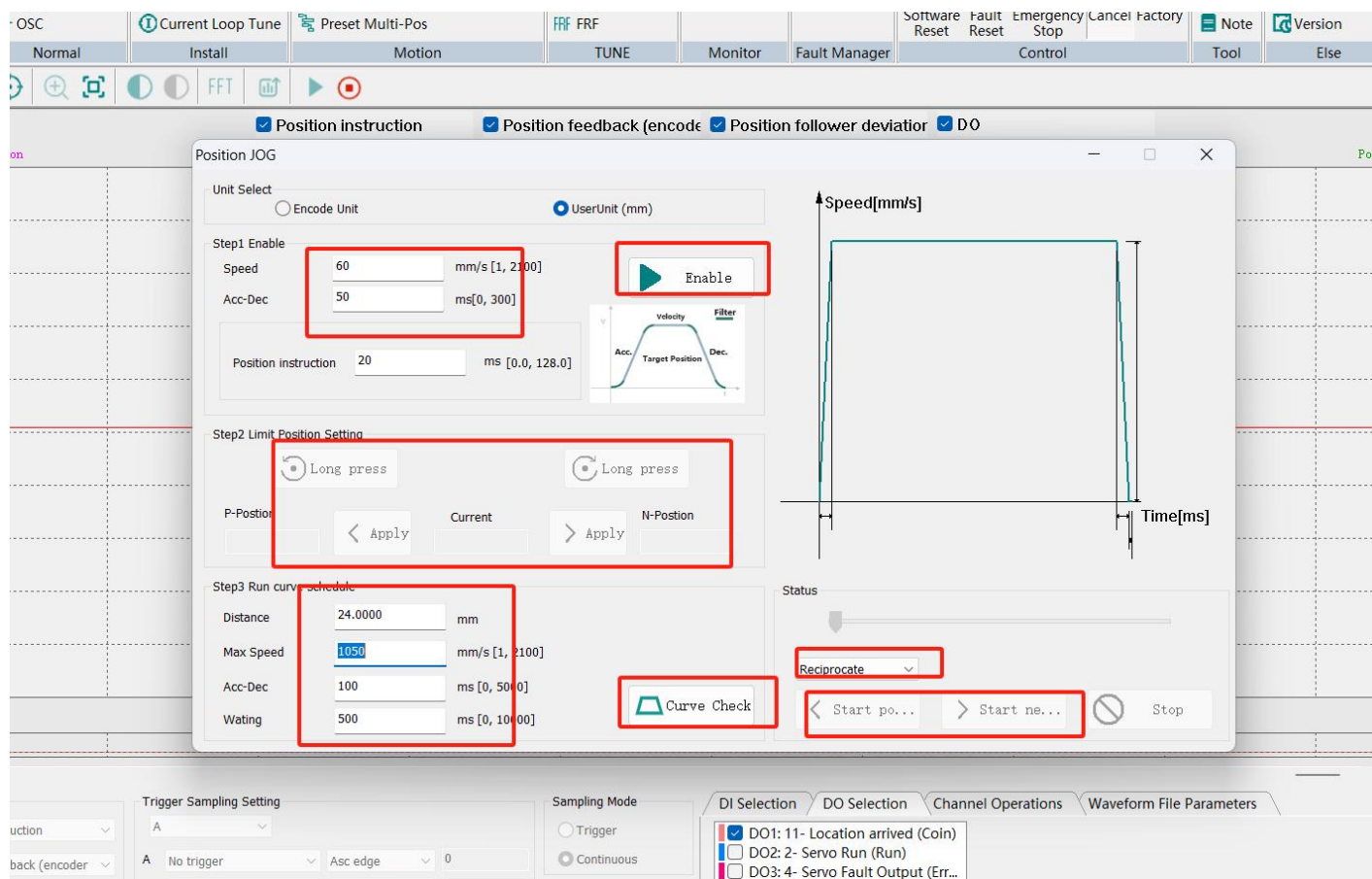
4.1 Firmware Upgrade



- Step1: Click on "FW Upgrade."
- Step2: Click on "Disconnect"
- Step3: Click on "Browse" to select the software to be burned.
- Step4: Click on "Update Serial Port."
- Step5: Click on "Burn" and wait for the progress bar to be completed.
- Step6: Close the IAPLoader software and reconnect to the background to check if the software version numbers for P0206 and P0207 match the burned software version.

4.2 Automatic Reciprocal Motion in Position control Mode

- Step1: Click on "Position JOG" to open the function page.
- Step2: Set the JOG operation conditions and click "Enable."
- Step3: Long press and hold the forward and reverse rotation buttons to set the limit positions.
- Step4: Set the motion curve.
- Step5: Click "Start" to run the trajectory in either the forward or reverse direction.



4.3 Recommended PDO for Each Mode

4.3.1 Recommended Configuration for Cyclic Synchronous Position Mode (CSP)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
607Ah: target position	6064h: position feedback	must
6060h: modes of operation	6061h: modes of operation display	optical

4.3.2 Recommended Configuration for Cyclic Synchronous Speed Mode (CST)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
60FFh: target Velocity		must
	6064h: position feedback	optical
	606Ch: velocity actual value	optical
6060h: modes of operation	6061h: modes of operation display	optical

4.3.3 Recommended Configuration for Cyclic Synchronous Torque Mode (CST)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
6071h: target Torque		must
	6064h: position feedback	optical
	606Ch: velocity actual value	optical
	6077h: Torque ActualValue	
6060h: modes of operation	6061h: modes of operation display	optical

4.3.4 Recommended Configuration for Profile Position Mode (PP)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
607Ah: target position	6064h: position feedback	must
6081h: profile velocity		must
6083h: profile acceleration		optical
6084h: profile deceleration		optical
6060h: modes of operation	6061h: modes of operation display	optical

4.3.5 Recommended Configuration for Profile Velocity Mode (PV)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
60FFh: target Velocity		must
	6064h: position feedback	optical
	606Ch: velocity actual value	optical
6083h: profile acceleration		optical
6084h: profile deceleration		optical
6060h: modes of operation	6061h: modes of operation display	optical

4.3.6 Recommended Configuration for Profile Torque Mode (PT)

RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
6071h: target Torque		must
6087h: Torque slope		optical
	6064h: position feedback	optical
	606Ch: velocity actual value	optical
	6077h: Torque ActualValue	optical
6060h: modes of operation	6061h: modes of operation display	optical

4.3.7 Recommended Configuration for Home Return Mode (HM)

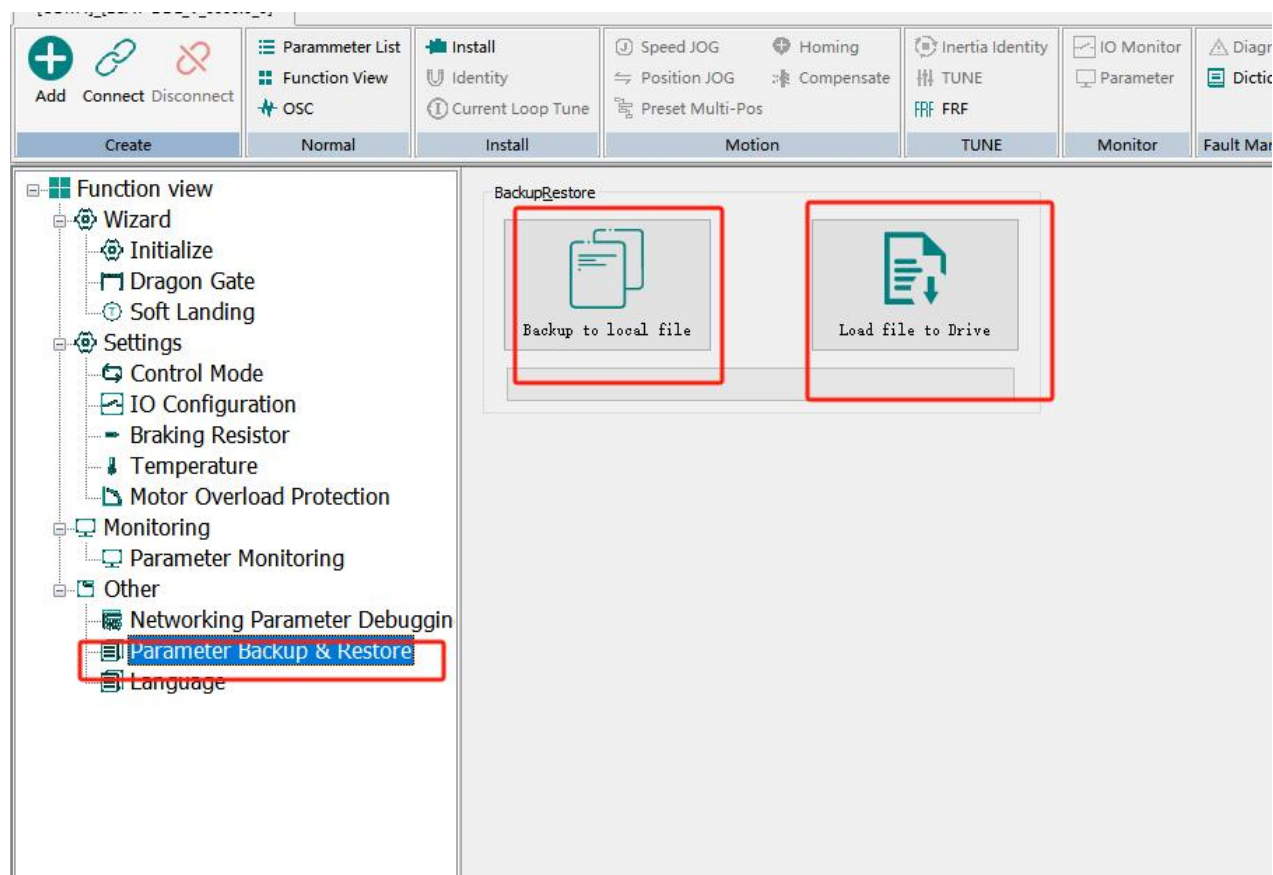
RPDO	TPDO	NOTE
6040h: control word	6041h: status word	must
6098h: Homing method		optical
6099.01h: speed during search for switch		optical
6099.02h: speed during search for zero		optical
609Ah: Homing acceleration		optical
	6064h: position feedback	optical
6060h: modes of operation	6061h: modes of operation display	optical

4.4 Usage of Absolute Value Function

Step 1: Set P0402 to enable the absolute value function, and set it to "1" for absolute linear mode.

Step 2: Perform the initial homing operation

5. Backup and Restore



The Backup and Restore page allows you to back up the internal parameters of the drive to a file and restore the backed-up parameters to the drive.

6. Common issues

1. Fault E019.3 Product Mismatch Fault: Because the motor's rated current is higher than the drive's rated current.

Solution: It is recommended to replace the drive with one that matches the power current rating.

2. Fault E413.0 Current Calculation Overflow: It caused by excessive motor resistance or inductance, which can lead to overflow during current loop tuning.

Solution: First, check if the motor power wire are connected properly. Next, verify if the resistance and inductance settings are correct. If these steps don't resolve the issue, manually adjust the current loop.