



LMAC Drive

E-RME series (EtherCAT type)

Quick Start Guide

V 1.0

Version Update Record

Version	Update date	Update content
V1.0	2025-02	First release
V1.1	2025-11	Added EDrive installation wizard user guide Added instructions for importing parameters for absolute type LMAC

Contents

Version Update Record	1
Chapter 1. Wiring.....	3
1.1 Main Circuit Wiring Diagram	3
1.2 Control Signal Connector - CN1 Pin Assignment	4
Chapter 2. Precautions Before Operation.....	7
Chapter 3. EDrive Configuration Software.....	8
3.1 Download EDrive Configuration Software.	8
3.2 Installation	8
3.3 Open Software	8
3.4 Connect to PC	9
3.5 Installation Wizard.....	10
3.6 Motor Configuration.....	17
3.7 Trial Run	19
3.8 Auto Tuning.....	20
3.9 Change Motion Direction	22
3.10 Parameter Backup and Download	23
3.11 Controller Axis Configuration Precautions	25

Chapter 1. Wiring

1.1 Main Circuit Wiring Diagram

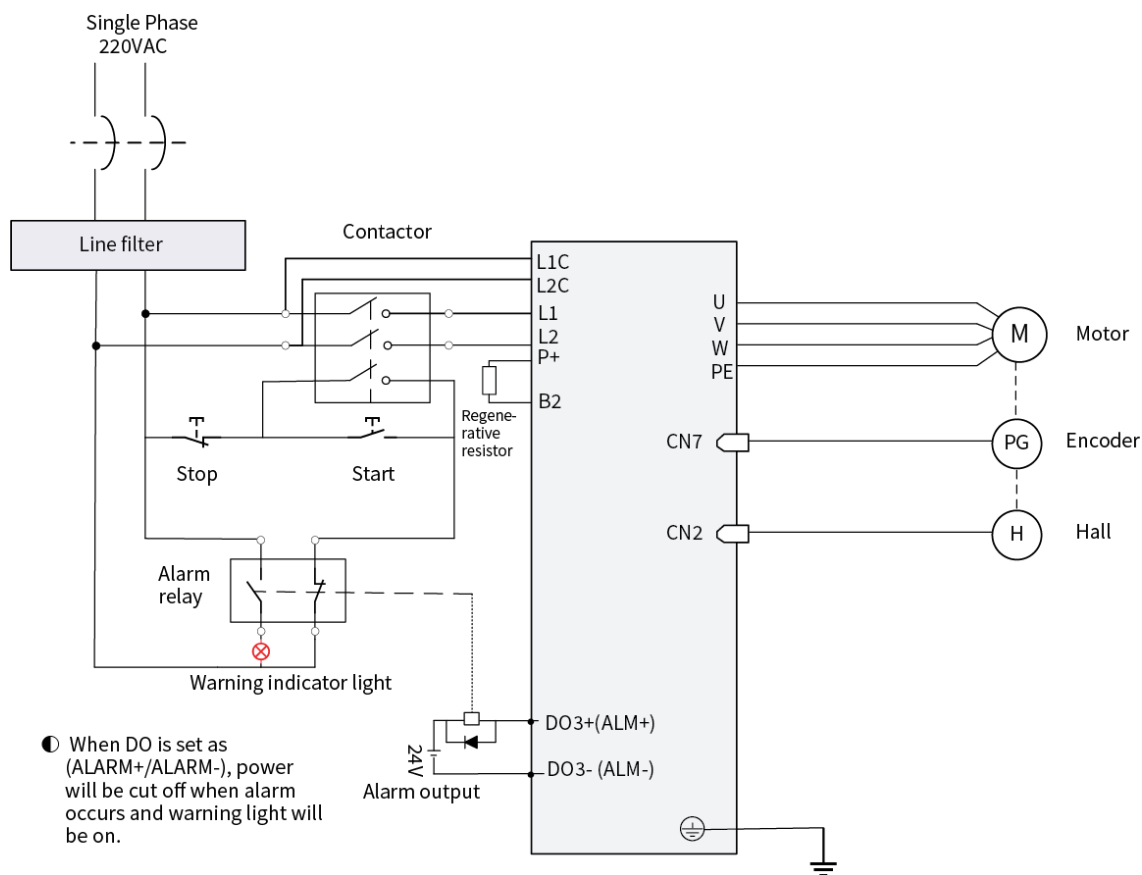


Figure 1-1 Main Circuit Wiring Diagram

1.2 Control Signal Connector - CN1 Pin Assignment

To ensure I/O signal to not be affected by electromagnetic interference, a shielded twisted pair cable is recommended for this application.

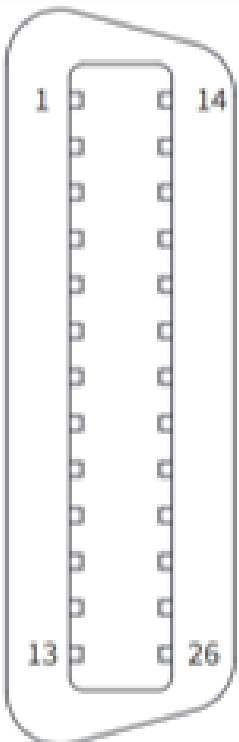
Port	Diagram (soldering side of the connector)	Pin	Label	Signal	Description (default function)
CN1		6	DI-COM	Input	Common digital input
		5	DI1	-	Digital input 1
		7	DI2	POT	Positive limit switch
		8	DI3	NOT	Negative limit switch
		9	DI4	HOME-SWITCH	Homing switch
		10	DI5	-	Digital input 5
		11	DI6	-	Digital input 6
		12	DI7	-	Digital input 7
		13	DI8	-	Digital input 8
		1	DO1+	BRK-OFF+	External brake released signal
		2	DO1-	BRK-OFF-	
		25	DO2+	S-RDY+	Servo ready signal output
		26	DO2-	S-RDY-	
		3	DO3+	ALM+	Alarm output
		4	DO3-	ALM-	
		17	A+	Differential output	Phase A frequency divider output
		18	A-	Differential output	
		20	B+	Differential output	Phase B frequency divider output
		19	B-	Differential output	
		21	Z+	Differential output	Phase Z frequency divider output
		22	Z-	Differential output	
		16	GND	Signal ground	Signal ground
		14	AI1 -	Analog input 1-	Analog input 1
		15	AI1+	Analog input 1+	
		23	AI2+	Analog input 2+	Analog input 2
		24	AI2-	Analog input 2-	
		Frame	-	FG	Ground

Table 1-1 E-RME IO signal pin assignment

1. General digital input connection

NPN connection:

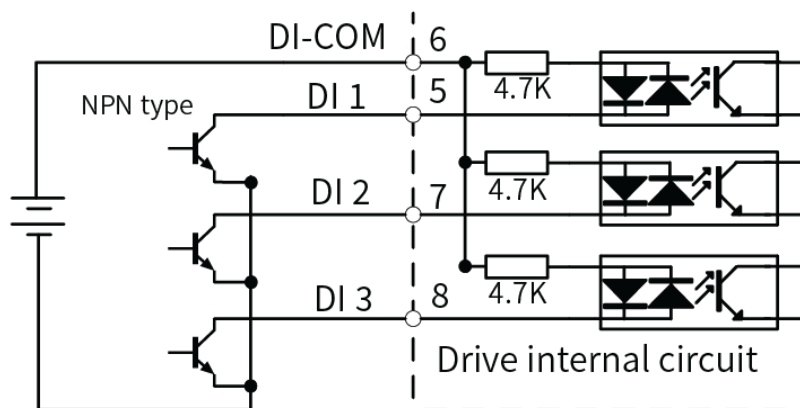


Figure 1-2 E-RME digital input NPN wiring diagram

PNP connection:

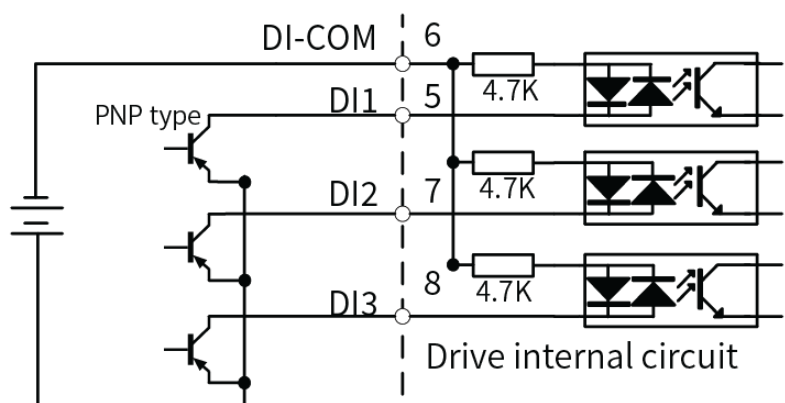


Figure 1-3 E-RME digital input PNP wiring diagram

2. General digital output circuit

NPN configuration

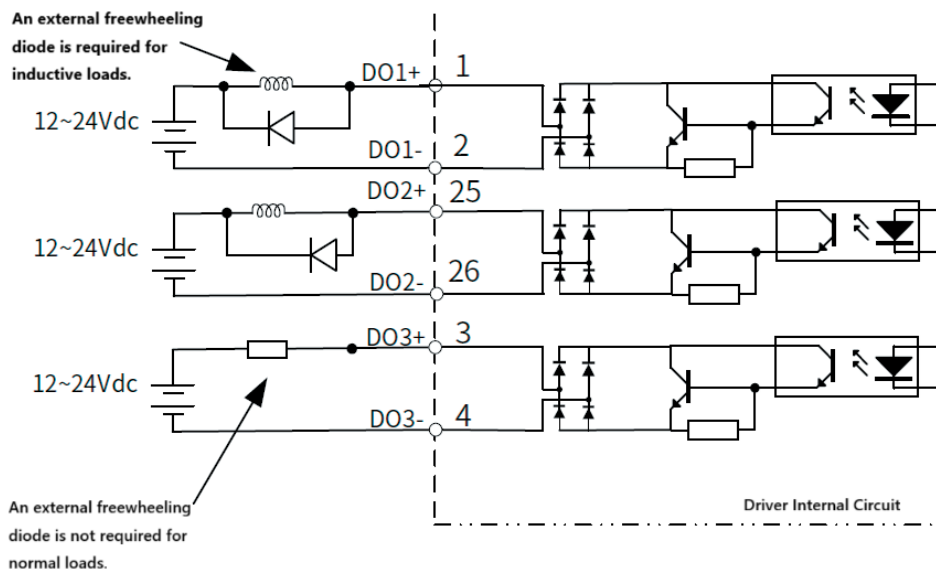


Figure 1-4 E-RME digital output NPN wiring diagram

Note: For PNP wiring, please contact the Misumi Tech Support team.

3. STO wiring diagram

STO (Safe Torque Off) function: Cut off motor current supply physically (through mechanical means). The drive comes with an STO terminal pre-installed with short-circuit wiring. If the STO function is not used, do not remove the STO terminal.

STO wiring diagram when in use:

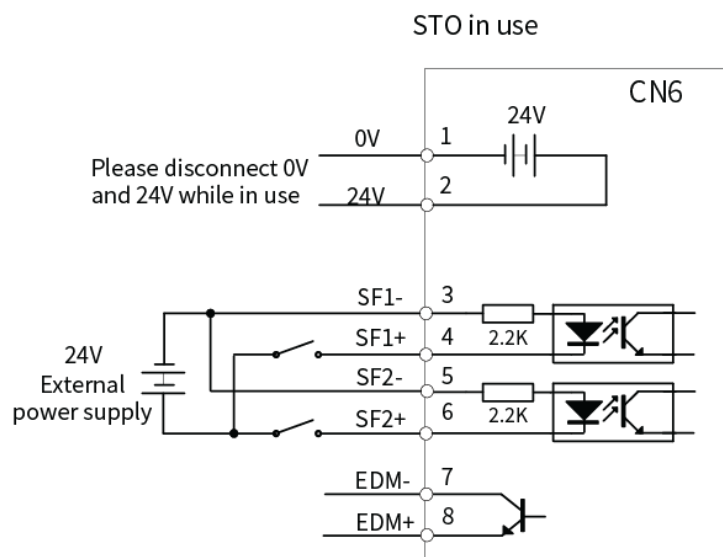


Figure 1-5 E-RME STO wiring diagram

Chapter 2. Precautions Before Operation

The drive and linear motor must be reliably grounded. The PE terminal of the drive must be securely connected to the equipment ground.

Ensure all wiring is correct before powering on.

An emergency stop circuit must be integrated to ensure the power supply immediately stops in case of a fault.

After a drive fault alarm, verify that the issue has been resolved before restarting, and ensure the SRV-ON signal is inactive.

Do not touch the drive within at least 5 minutes after power is turned off to prevent electric shock.

If the drive panel is unresponsive after powering on, check whether the input voltage is within the rated range and ensure there are no phase losses.

Chapter 3. EDrive Configuration Software

3.1 Download EDrive Configuration Software.

Download link:

https://th.misumi-ec.com/en/linked/material/mech/MSM1/CAD/2D/10311108889/EDriver_v1.2.0_alpha.zip

3.2 Installation

Just unzip and pull the ‘MISUMI EDrive’ folder to the desktop.

☐ Name	Date modified	Type	Size
▼ Today			
 EDriver_v1.2.1_alpha_20251030.zip	11/27/2025 8:54 AM	Compressed (zipp...	81,255 KB
 E-RME_V1.01_EtherCAT_ESI file.xml	11/27/2025 8:54 AM	Microsoft Edge HT...	156 KB
☒  EDriver_v1.2.1_alpha_20251030	11/27/2025 8:55 AM	File folder	
 MISUMI LMAC Driver Quick Start Guide	11/27/2025 8:54 AM	File folder	
 MISUMI LMAC Driver User Manual	11/27/2025 8:54 AM	File folder	

Figure 3-1 EDrive configuration software folder

3.3 Open Software

Double click ‘EDrive.exe’ to open the software.

☐ Name	Date modified	Type	Size
▼ Today			
 Driver	11/27/2025 8:54 AM	File folder	
 DriverDefaultPara	11/27/2025 8:54 AM	File folder	
 Help	11/27/2025 8:54 AM	File folder	
 Init	11/27/2025 8:54 AM	File folder	
 Motors	11/27/2025 8:54 AM	File folder	
 Pic	11/27/2025 8:55 AM	File folder	
 Remark	11/27/2025 8:55 AM	File folder	
 Script	11/27/2025 8:55 AM	File folder	
 Tools	11/27/2025 8:55 AM	File folder	
 DATA.mdb	11/27/2025 8:54 AM	Microsoft Access ...	28,588 KB
 EDrive.exe	11/27/2025 8:54 AM	Application	8,437 KB
 inp_num.dll	11/27/2025 8:54 AM	Application extens...	8 KB
 Interop.dll	11/27/2025 8:54 AM	Application extens...	78 KB
 libifcoremd.dll	11/27/2025 8:54 AM	Application extens...	1,190 KB
 libifcoremdd.dll	11/27/2025 8:54 AM	Application extens...	1,190 KB
 libmmd.dll	11/27/2025 8:54 AM	Application extens...	4,202 KB
 LV_sub2.dll	11/27/2025 8:54 AM	Application extens...	52 KB
 OscilloScope.dll	11/27/2025 8:54 AM	Application extens...	417 KB
 ParameterConfigInfo.mdb	11/27/2025 8:54 AM	Microsoft Access ...	3,308 KB

Figure 3-2 EDrive configuration software launch icon

After software opened, go to 'General' and change language to 'English'.

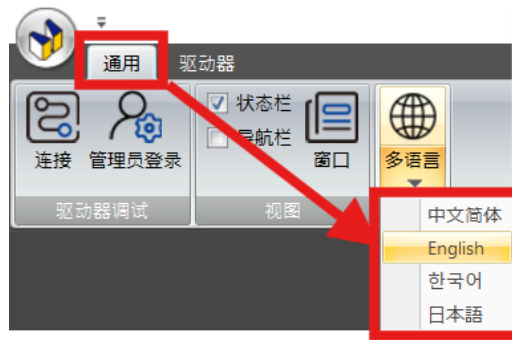


Figure 3-3 EDrive configuration software change language

3.4 Connect to PC

Please use cable with one side USB type-A and the other side USB type-C.



Figure 3-4 TYPE-C configuration cable

Open EDrive software and start connection. 'Communication Mode' please choose 'RS232', then click 'Refresh', then click 'Connect'.

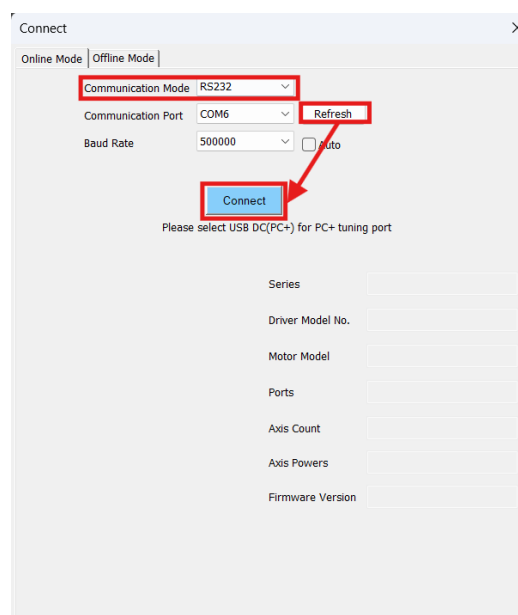


Figure 3-5 EDrive software Connection window illustration

3.5 Installation Wizard

Note: If you need to configure the motor parameters yourself, please skip to page 22: 'Motor Configuration'.

Click (1) Installation Wizard

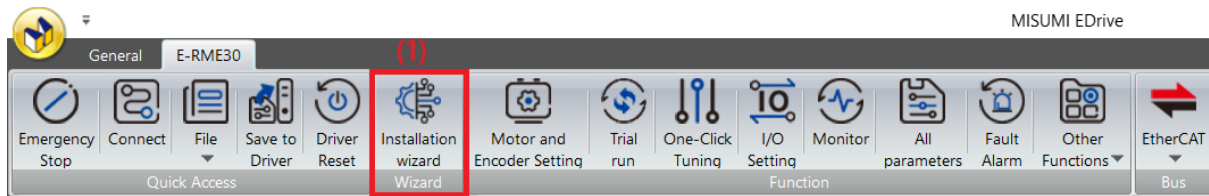


Figure 3-6 Installation Wizard step guide - 1

Please read the prompts on the page carefully and confirm your personal safety and electrical safety before clicking (2) to start debugging.

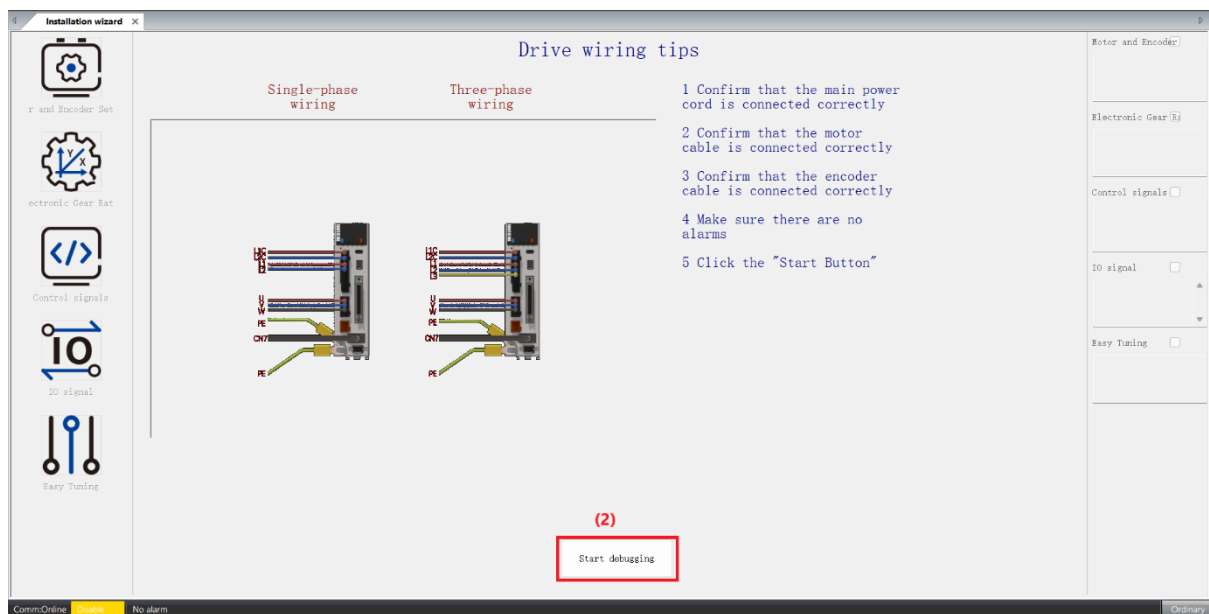


Figure 3-7 Installation Wizard step guide - 2

Click (4) 'Next', software will ask you to select LMAC model under (3). Then click (4) 'Next' again.

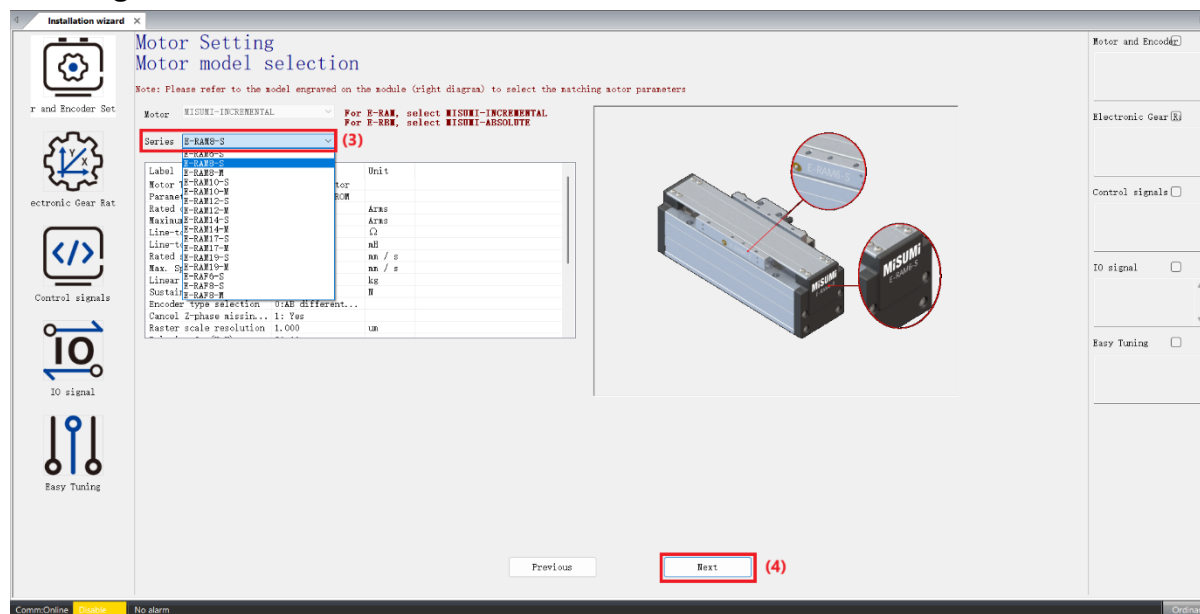


Figure 3-8 Installation Wizard step guide – 3

Note: The model number of LMAC can be identified by the engraving on the side of the module slide and the label on the end face.



Figure 3-9 Installation Wizard step guide – 4

Click (5) 'Download Setting' then click (6) 'Yes'.

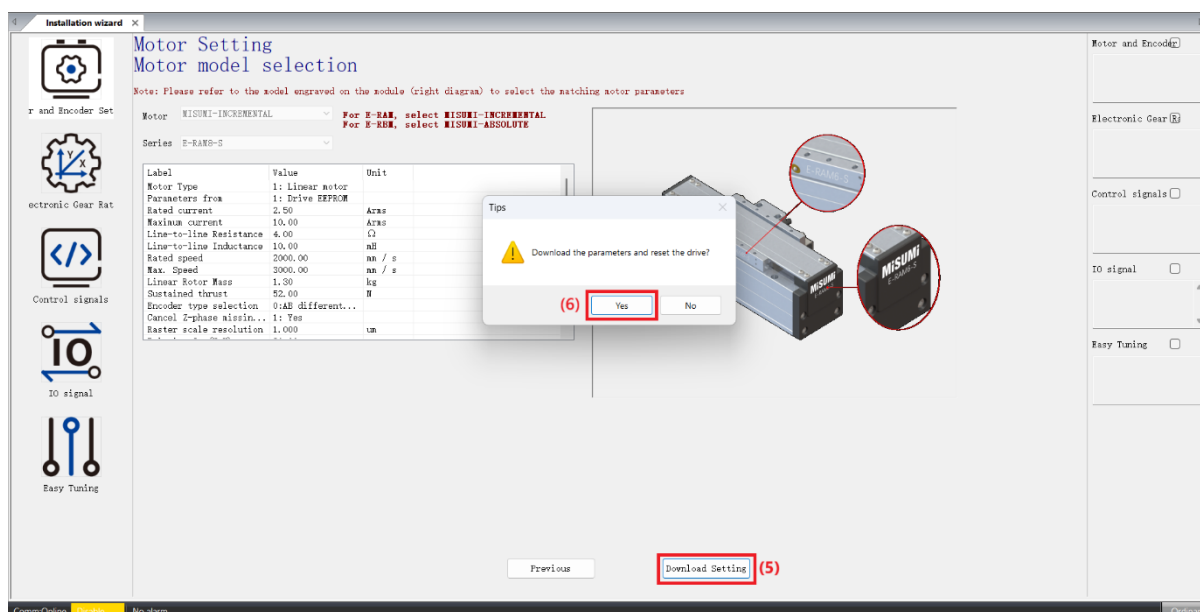


Figure 3-10 Installation Wizard step guide – 5

The default is 1 pulse to move 1 μ m. If no changes are needed, please click (7) 'Download Setting'.

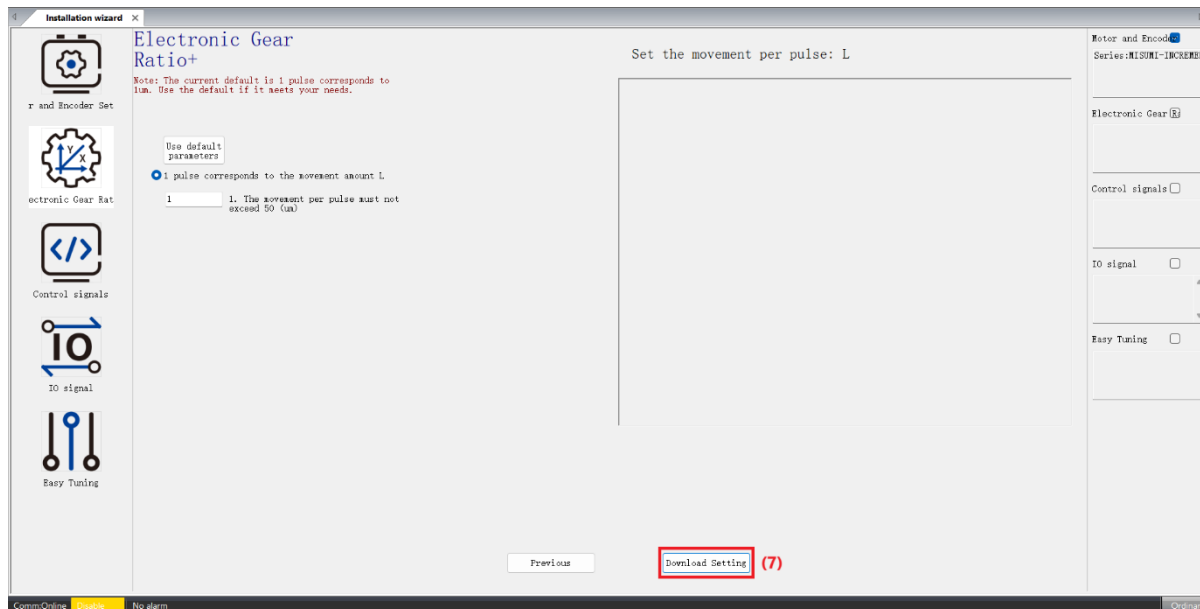


Figure 3-11 Installation Wizard step guide – 6

Choose 'Sequential mode' in (8) then click (9) 'Download Setting'.

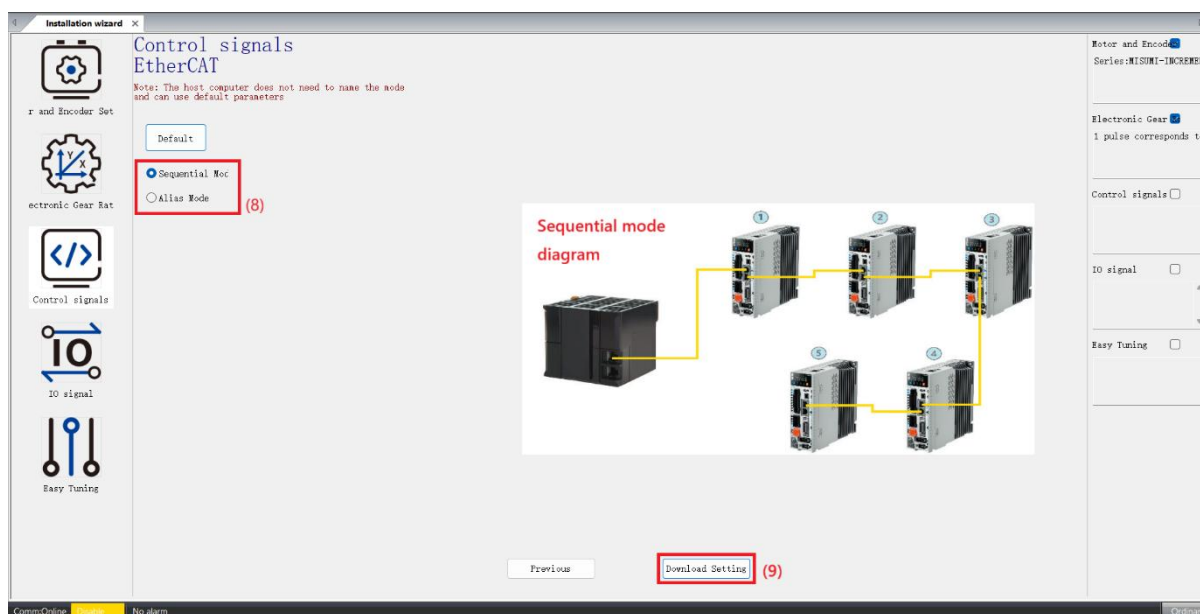


Figure 3-12 Installation Wizard step guide – 7

Check Digital Input functions setting and polarity in (10) then click (11) 'Next'.

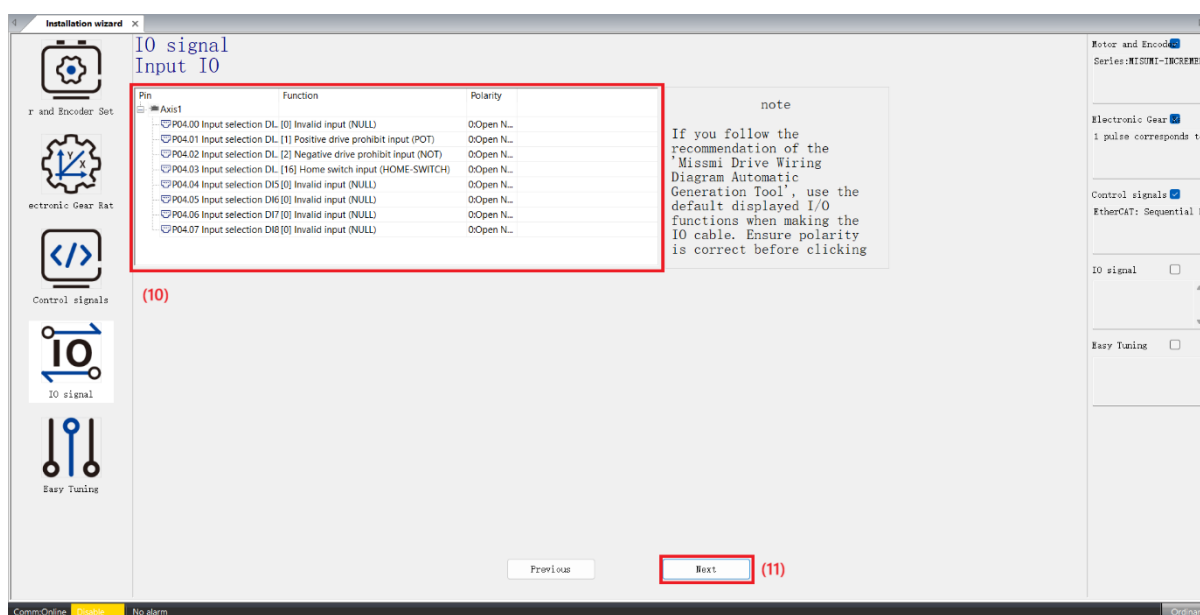


Figure 3-13 Installation Wizard step guide – 8

Check Digital Output functions setting and polarity in (12) then click (13) ‘Download Setting’.

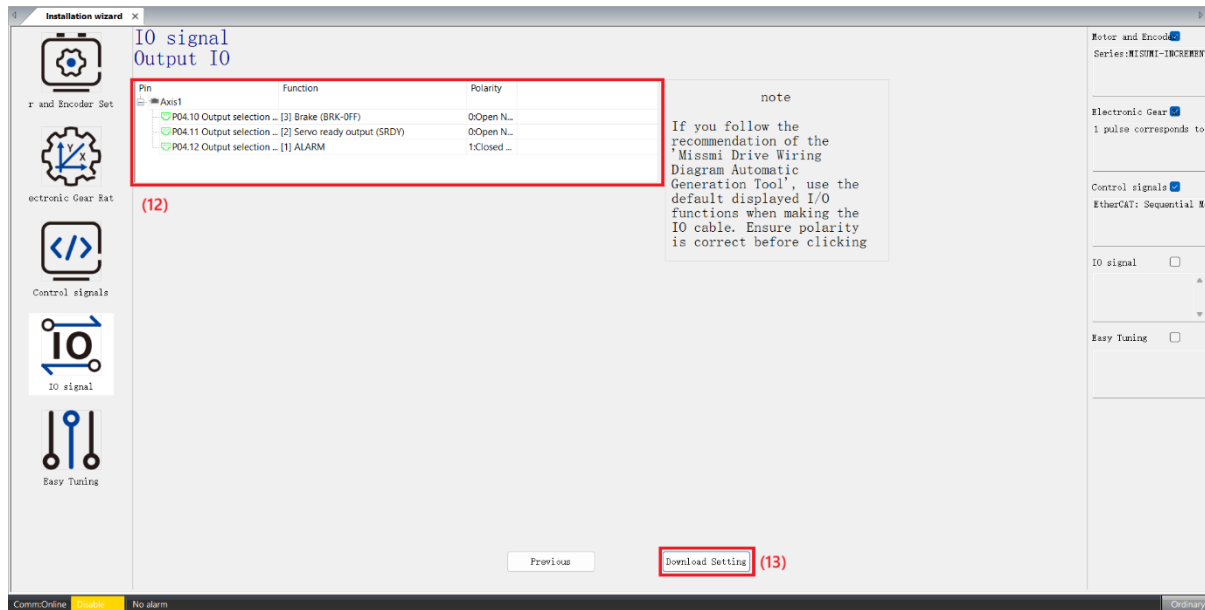


Figure 3-14 Installation Wizard step guide – 9

Click (14) ‘Servo Enable’, click (15) ‘Forward’ or (16) ‘Reverse’ to run the module and confirm the direction of motion. Click (17) ‘Next’.

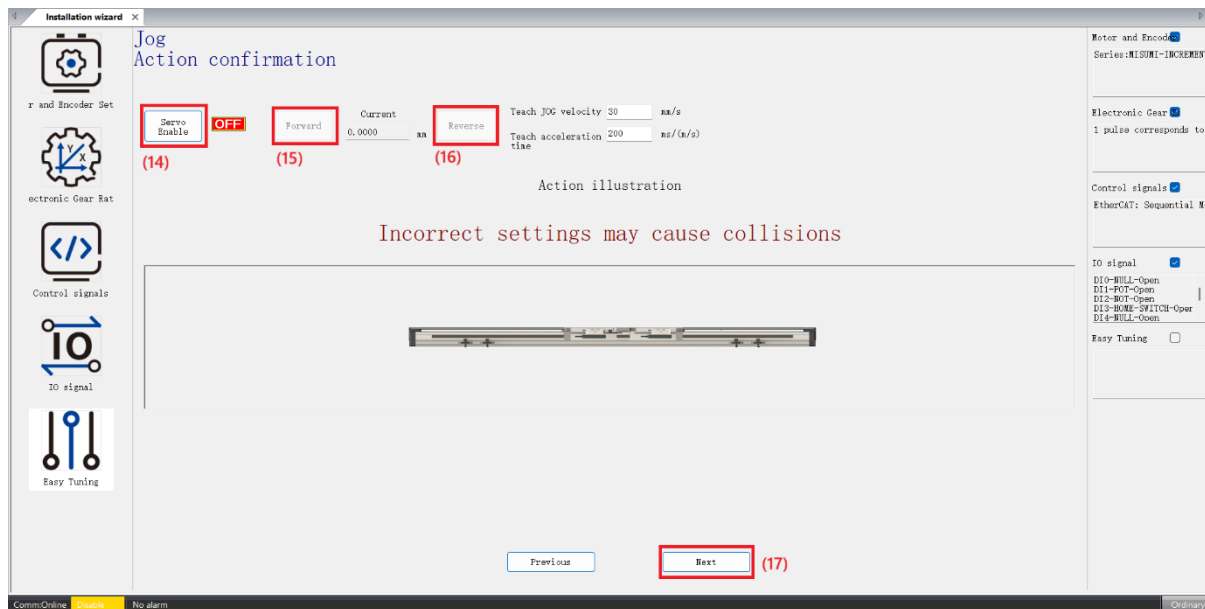


Figure 3-15 Installation Wizard step guide – 10

Click (18) 'Forward' or (19) 'Reverse' to run the module, click (20) Set Start Point, click (21) Set End Point

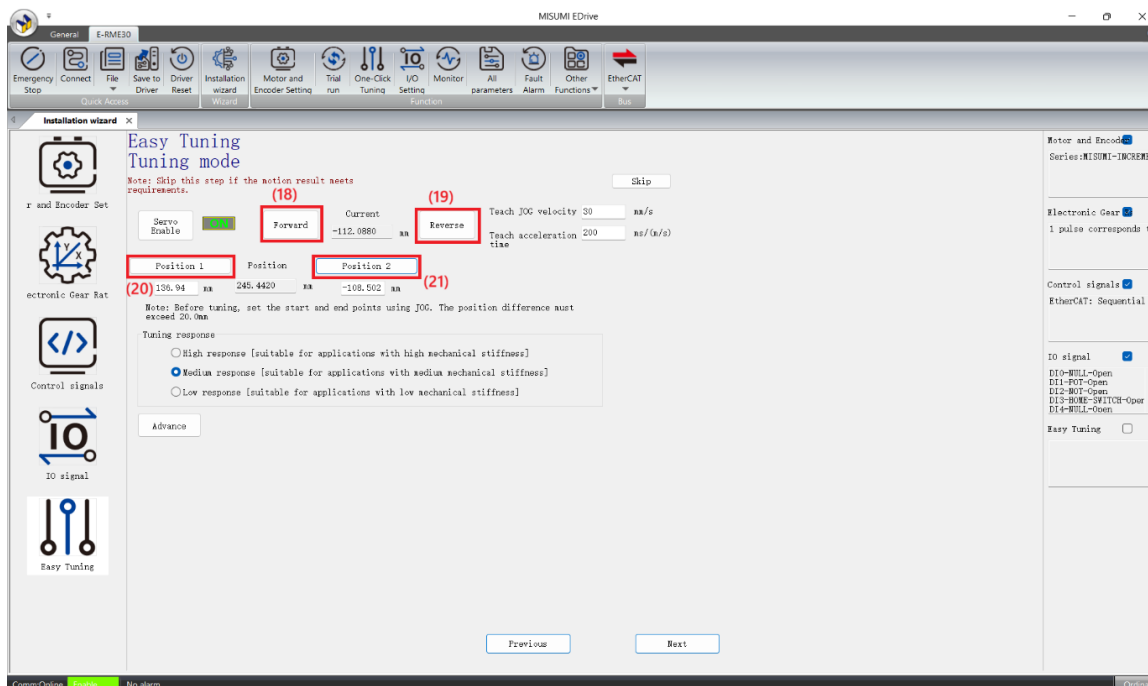


Figure 3-16 Installation Wizard step guide – 11

Click (22) to open more settings for the auto tuning, like (23) tuning speed limit. Click (24) 'OK' if changed setting. Then click (25) 'Next' to start auto tuning.

Note: The motor will start moving after tuning begins. Please wait for the tuning progress bar to finish reading and do not perform any operations during this time.

If no load has been installed yet, you can skip the tuning operation by clicking (26) 'Skip'.

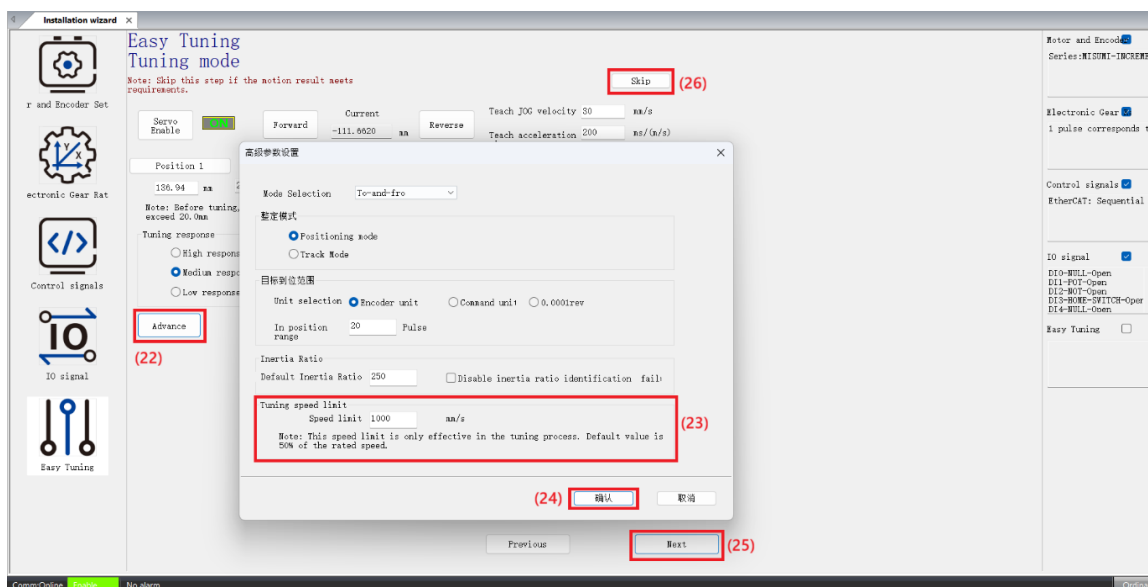


Figure 3-17 Installation Wizard step guide – 12

Click (27) 'Download Setting'.

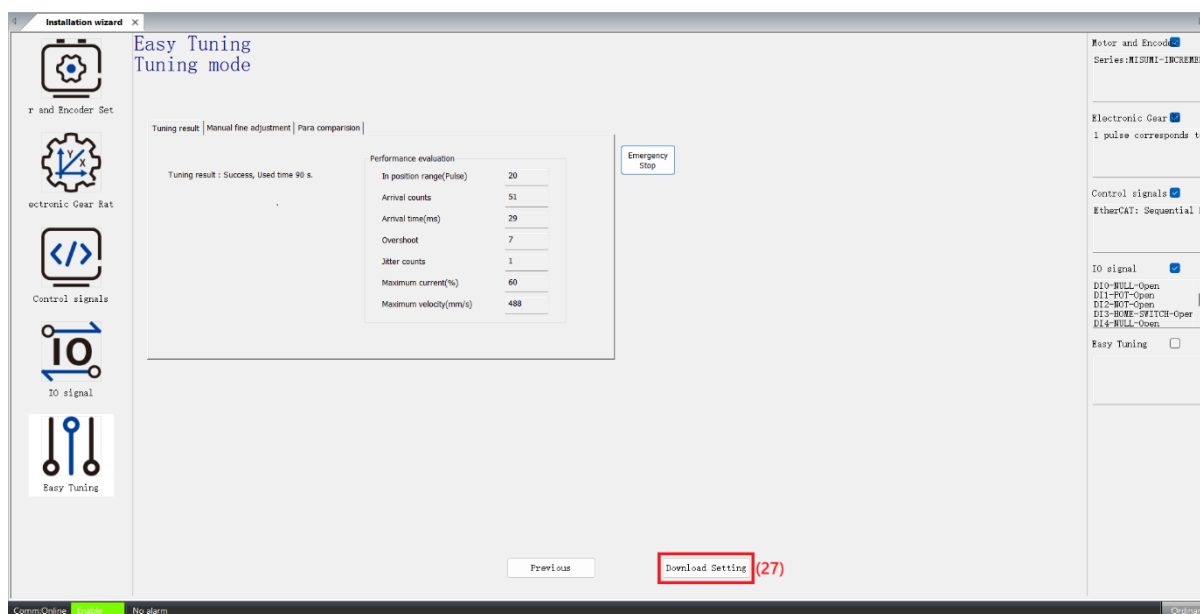


Figure 3-18 Installation Wizard step guide – 13

Click (28) 'Debugging completed'.

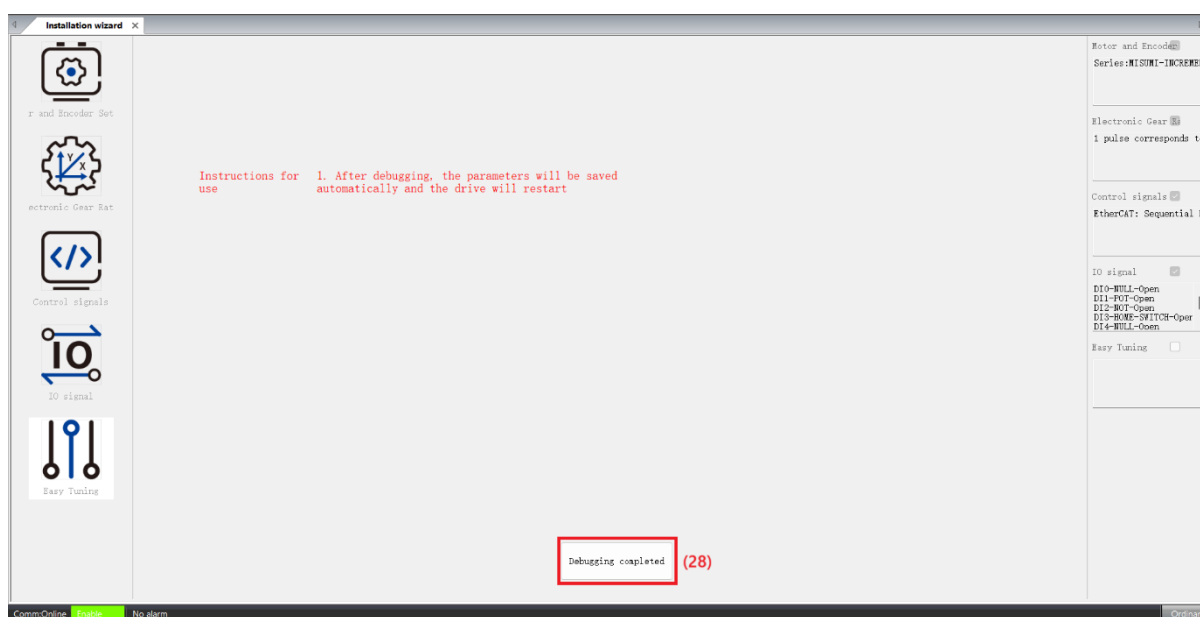


Figure 3-19 Installation Wizard step guide – 14

3.6 Motor Configuration

Note: If you have already configured the motor using the Installation Wizard, you can skip this step.

Click (1) 'Motor and Encoder Setting'.

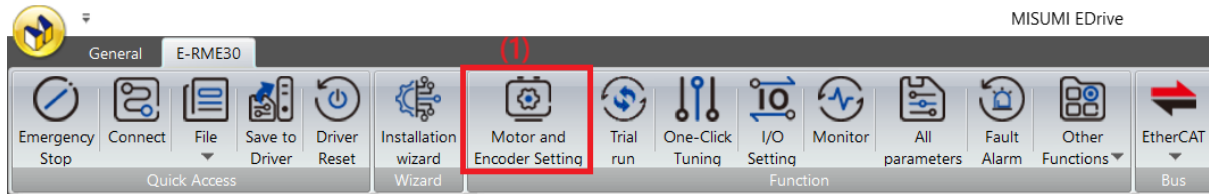


Figure 3-20 Motor configuration step guide – 1

If it is incremental encoder, select MISUMI-INCREMENTAL in (2), select the LMAC model in (3), click (4) to write to the driver, and click 'OK' according to the prompt to complete the motor configuration.

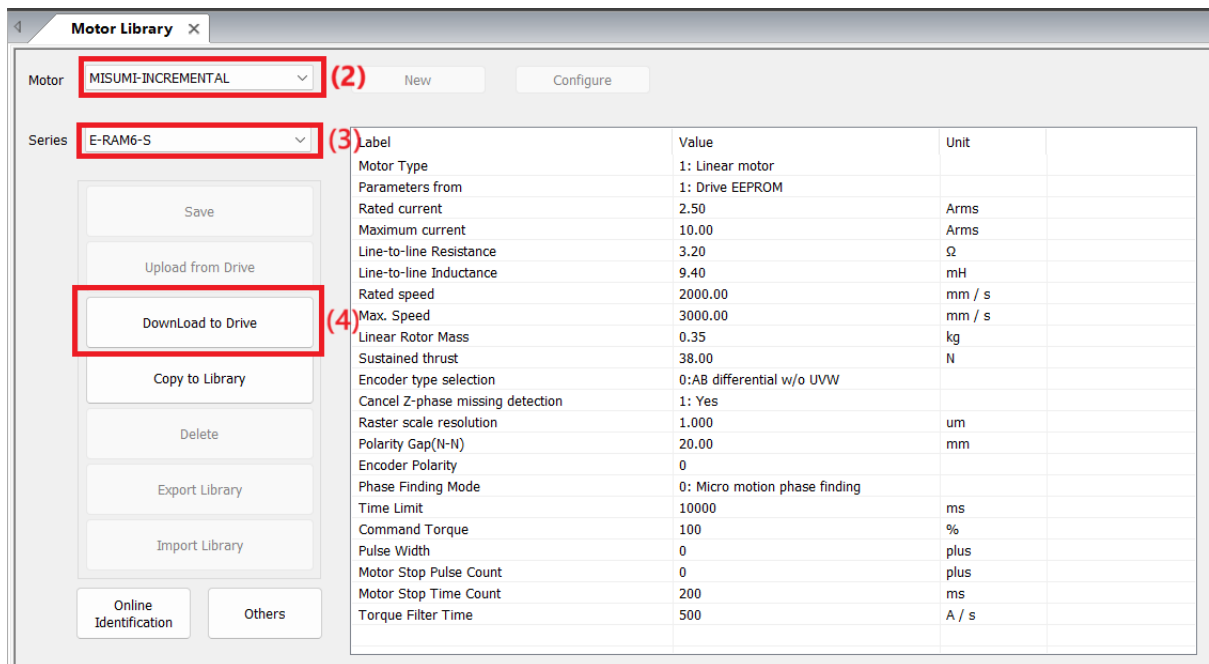


Figure 3-21 Motor configuration step guide – 2

If it is absolute encoder, select MISUMI-ABSOLUTE in (2), select the LMAC model in (3), click (4) to write to the driver, and click 'OK' according to the prompt to complete the motor configuration.

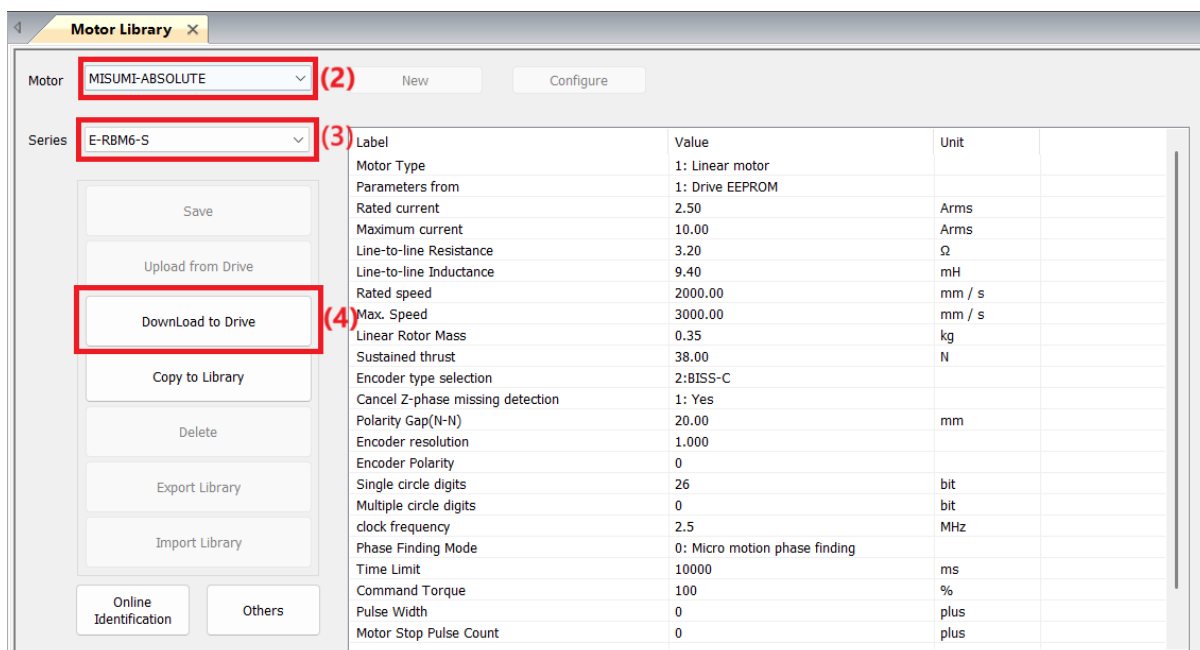


Figure 3-22 Motor configuration step guide – 3

Note: The model number of LMAC can be identified by the engraving on the side of the module slide and the label on the end face.



Figure 3-23 Motor configuration step guide – 4

3.7 Trial Run

Click (1) 'Trial Run'.

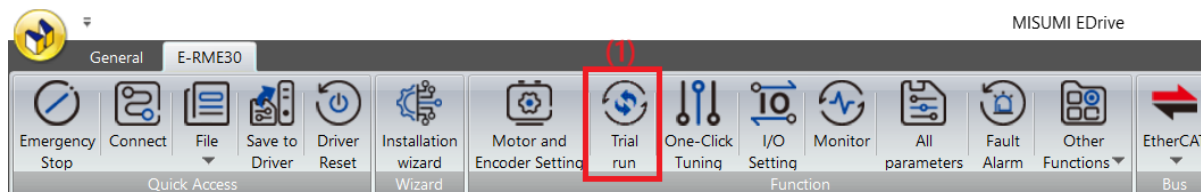


Figure 3-24 Motor trial run step guide – 1

Click (2) 'Servo Enable', then click (3) 'Forward' or (4) 'Reverse', to move the motor.

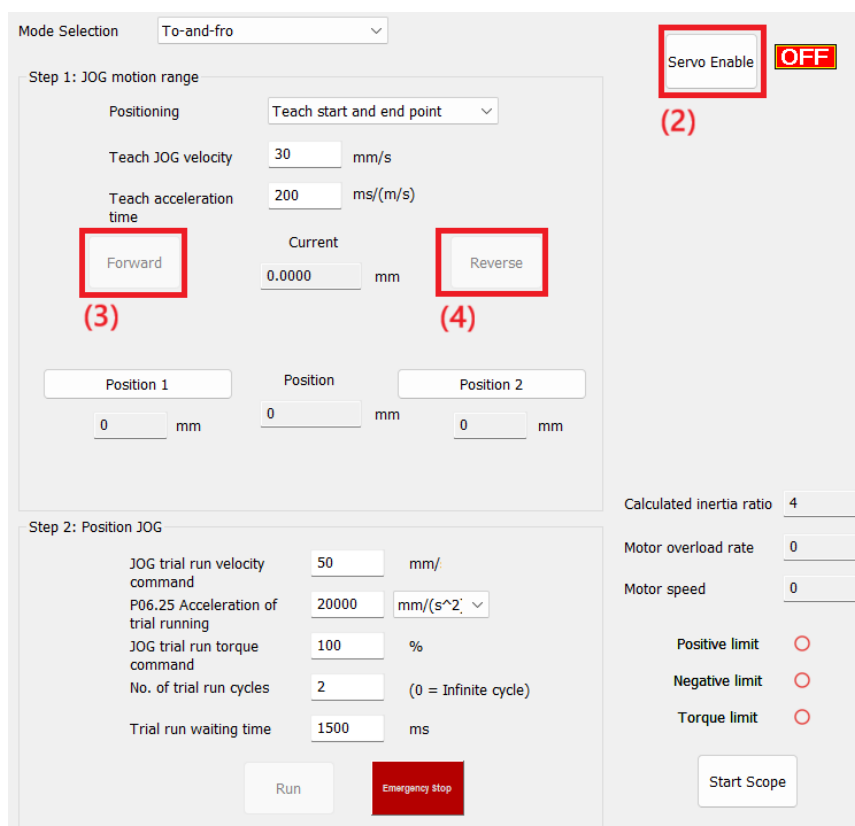


Figure 3-25 Motor trial run step guide – 2

3.8 Auto Tuning

Note: If you have already completed the auto-tuning process using the Installation Wizard, you can skip this step.

Click (1) 'One-Click Tuning'.

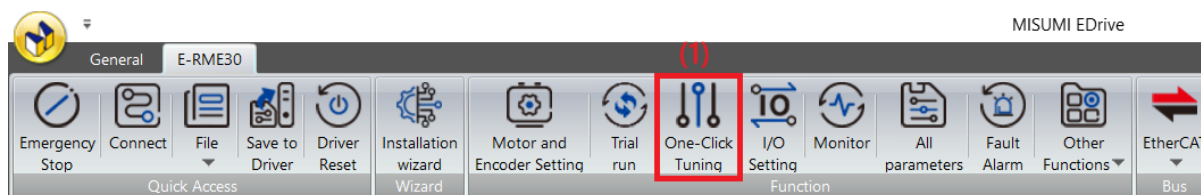


Figure 3-26 Motor auto tuning step guide – 1

Click (2) 'Next'.

Note: Suggest not to change other parameters if not necessary.

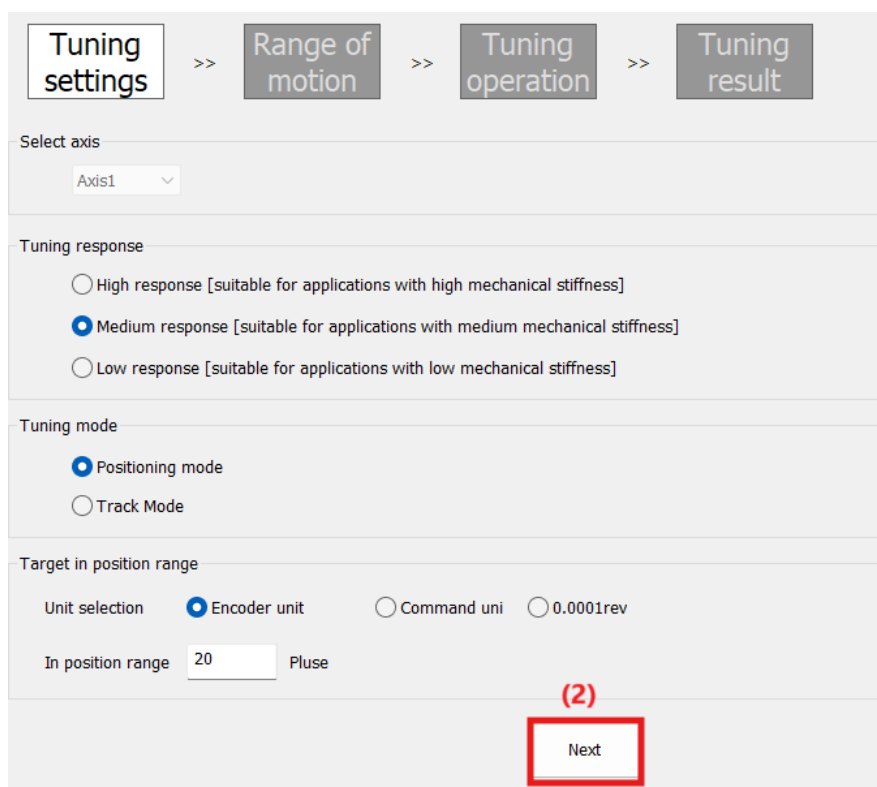
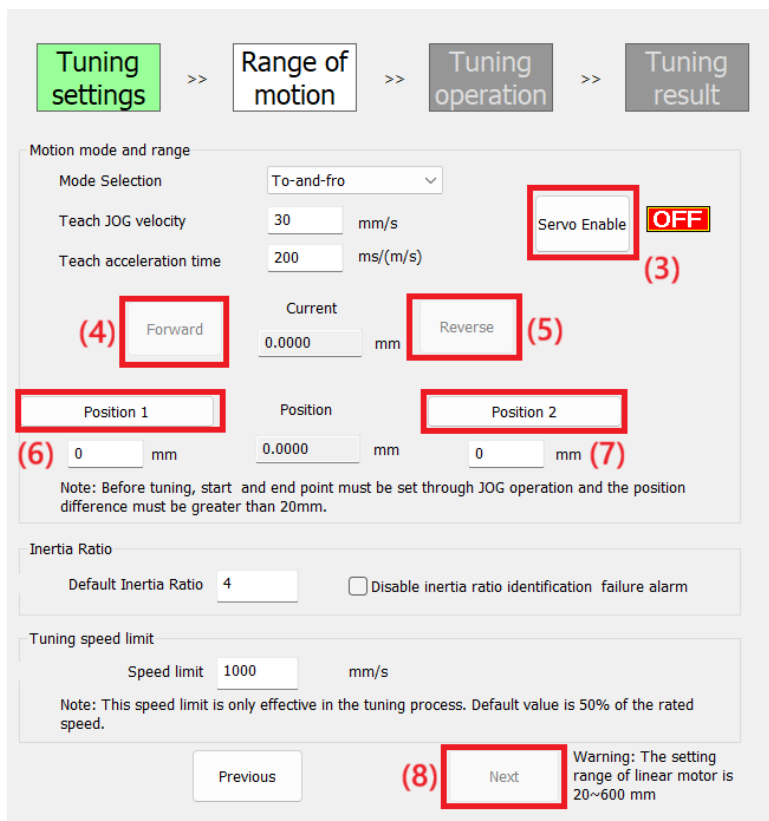


Figure 3-27 Motor auto tuning step guide – 2

Click 'Servo Enable'. (Note: If drive already connected Servo ON output signal, please tick check box 'External enabling disable')

Click (3) 'Servo Enable'.

Click (4) 'Forward'. After motor reaches starting position, click (5) 'Position 1'. Then click (6) 'Reverse'. After motor reaches ending position, click (7) 'Position 2'. (Note: Please always make sure motor is in between of starting position and ending position) Click (8) 'Next', and follow the instruction to finish Auto Tuning.



Tuning settings >> Range of motion >> Tuning operation >> Tuning result

Motion mode and range

Mode Selection: To-and-fro

Teach JOG velocity: 30 mm/s

Teach acceleration time: 200 ms/(m/s)

Servo Enable: OFF (3)

(4) Forward

Current: 0.0000 mm

Reverse (5)

Position 1 (6): 0 mm

Position: 0.0000 mm

Position 2 (7): 0 mm

Note: Before tuning, start and end point must be set through JOG operation and the position difference must be greater than 20mm.

Inertia Ratio

Default Inertia Ratio: 4

☐ Disable inertia ratio identification failure alarm

Tuning speed limit

Speed limit: 1000 mm/s

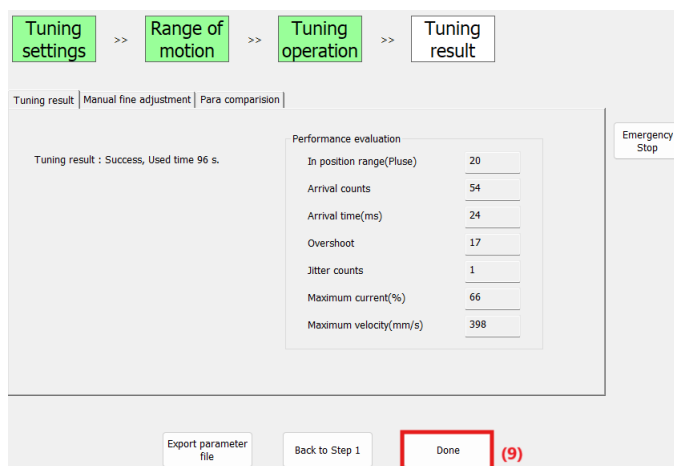
Note: This speed limit is only effective in the tuning process. Default value is 50% of the rated speed.

Previous (8) Next

Warning: The setting range of linear motor is 20~600 mm

Figure 3-28 Motor auto tuning step guide – 3

Click (9) 'Done', and follow the instruction to save parameters.



Tuning settings >> Range of motion >> Tuning operation >> Tuning result

Tuning result | Manual fine adjustment | Para comparison

Tuning result : Success, Used time 96 s.

Performance evaluation

In position range(Pluse)	20
Arrival counts	54
Arrival time(ms)	24
Overshoot	17
Jitter counts	1
Maximum current(%)	66
Maximum velocity(mm/s)	398

Emergency Stop

Export parameter file

Back to Step 1

Done (9)

Figure 3-29 Motor auto tuning step guide – 4

3.9 Change Motion Direction

If controller pulse train is positive direction, but motor moves to negative direction, direction change is needed. Please refer to following steps.

Click (1) 'Motor and Encoder Setting'.

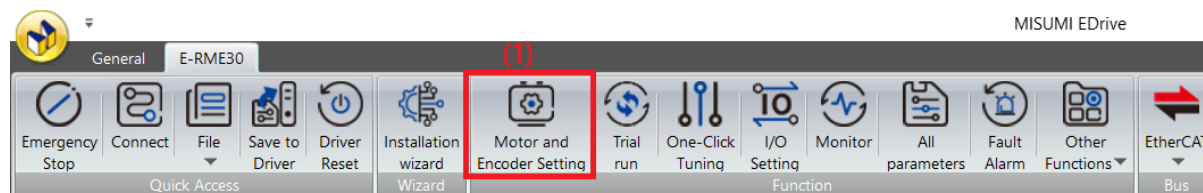


Figure 3-30 Change motion direction step guide – 1

Click (2) 'Others'.

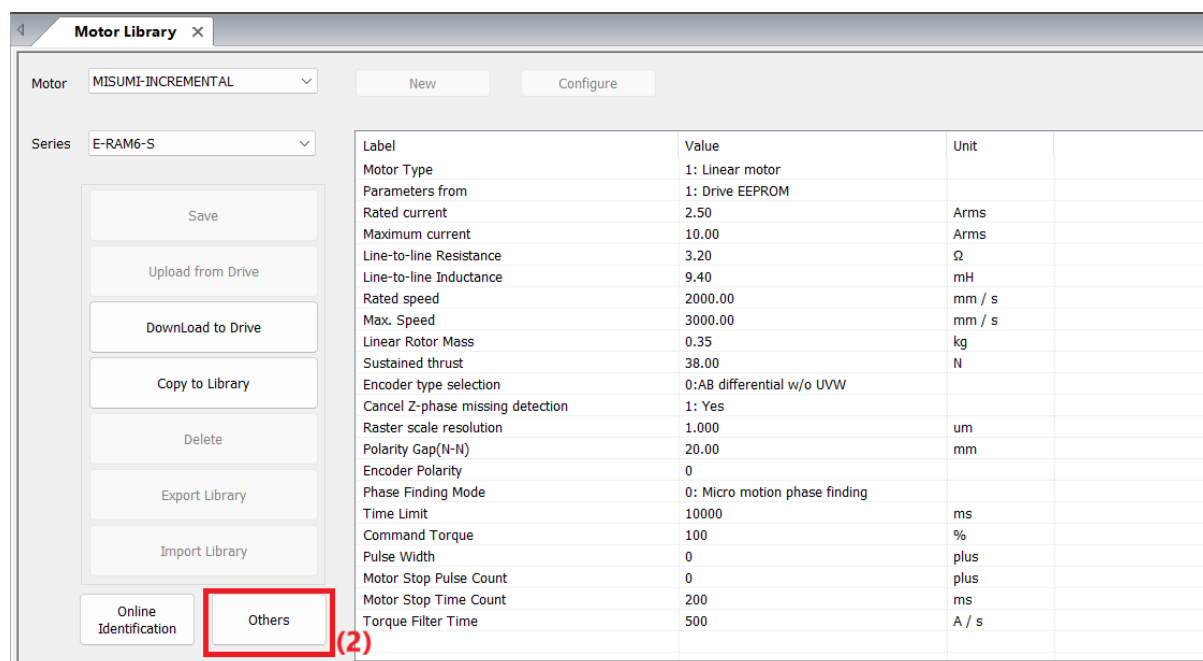


Figure 3-31 Change motion direction step guide – 2

Change the value of (3) 'Command pulse polarity', then click (4) 'Write' and follow the instruction to save parameters.

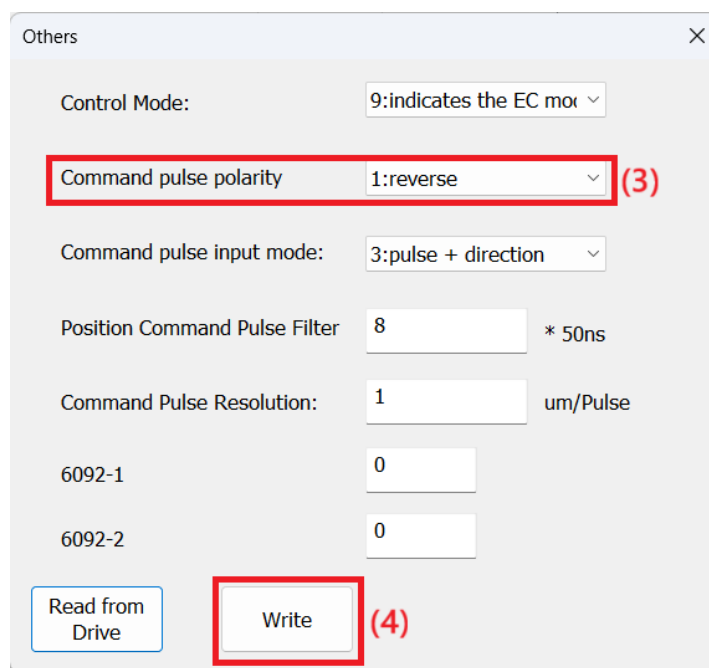


Figure 3-32 Change motion direction step guide – 3

3.10 Parameter Backup and Download

Please refer to following steps to backup parameters.

Click (1) 'All Parameters'.

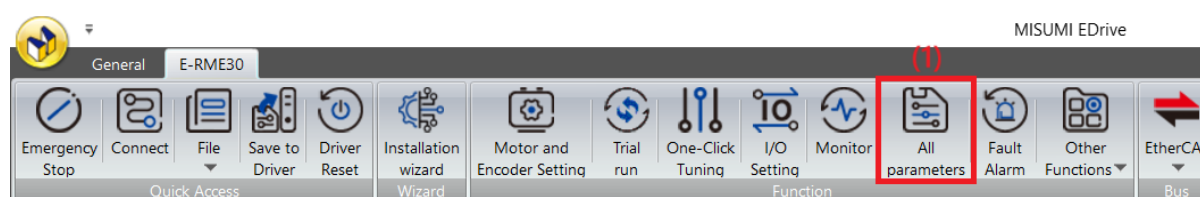


Figure 3-34 Parameter backup and download step guide – 1

Click (2) 'Save to PC' and follow the instruction to finish saving.

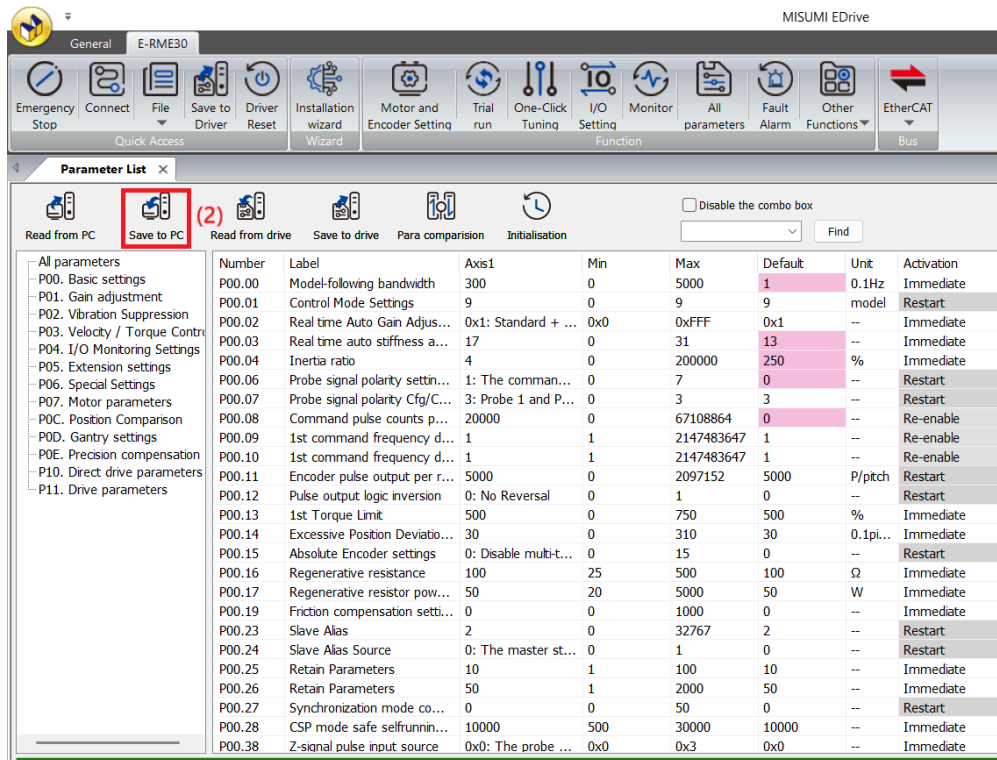


Figure 3-35 Parameter backup and download step guide – 2

When download parameters, click (3) 'Read from PC'.

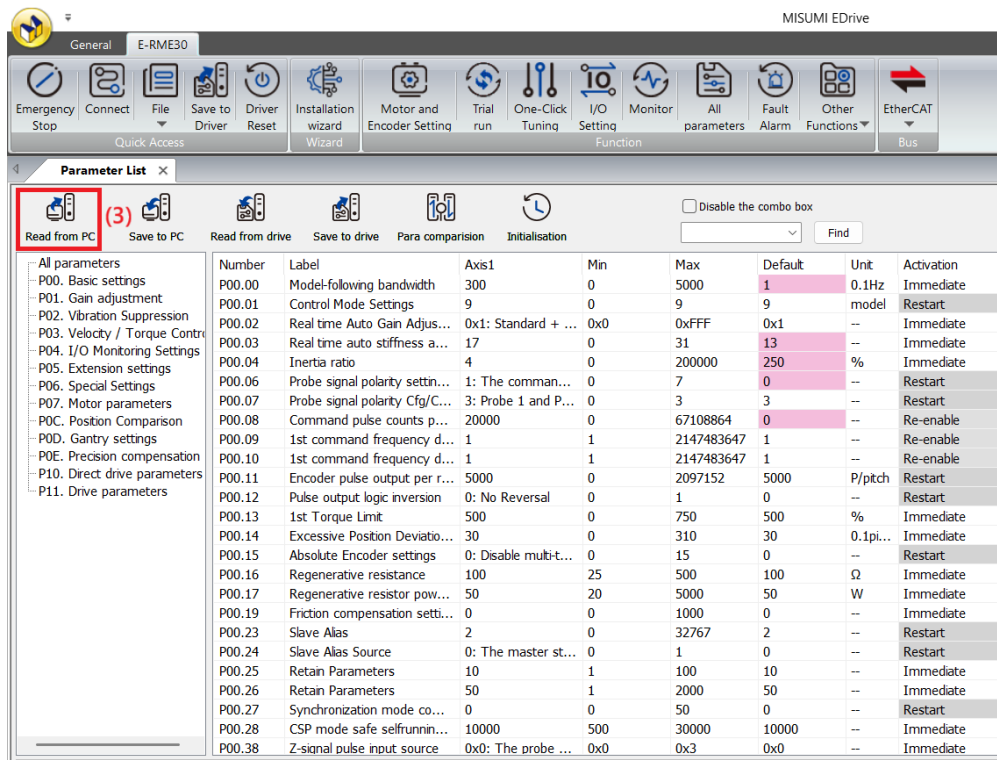


Figure 3-36 Parameter backup and download step guide – 3

Choose the parameter file you saved, and it will be shown in a new tab (4). Click (5) ‘Save to drive’, then click (6) ‘Drive Reset’. Follow the instruction to finish saving.

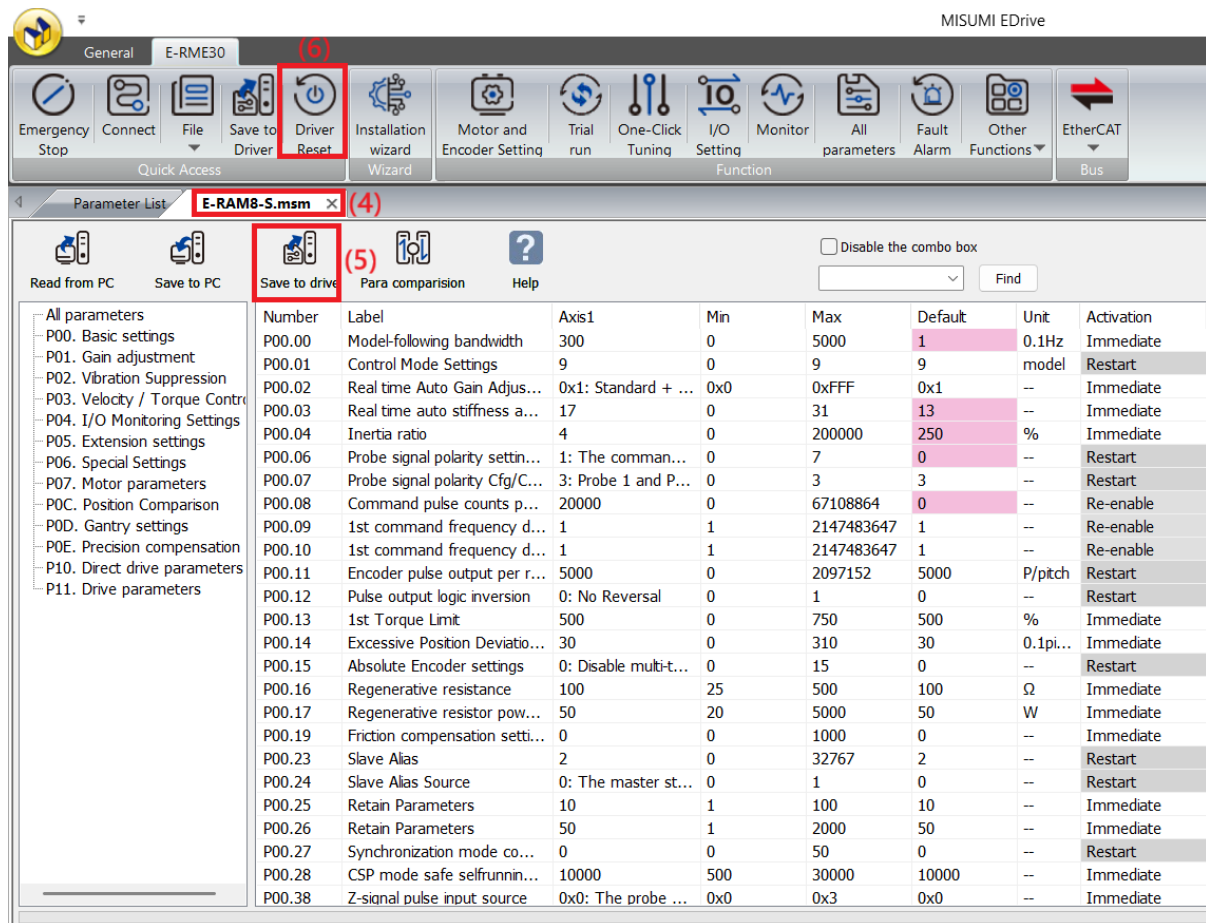


Figure 3-37 Parameter backup and download step guide – 4

3.11 Controller Axis Configuration Precautions

1. XML file mapping

EtherCAT ESI file is contained in the EDrive software zip file.

E-RME_V1.01_EtherCAT_ESI file

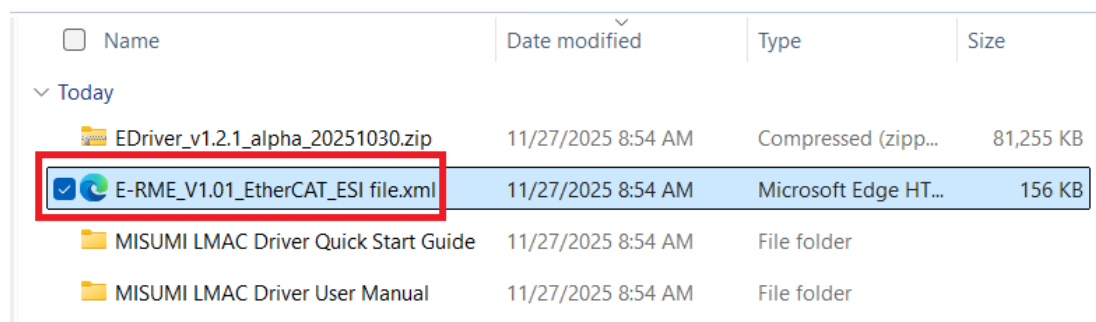


Figure 3-38 E-RME ESI file

ESI file predefined PDO

RPDO1: Position control mode related PDOs

RPDO2: Velocity control mode related PDOs

RPDO3: Torque control mode related PDOs

RPDO4: Homing mode related PDOs

TPDO1: Controller feedback message related PDOs

Example: If use positioning control mode, click RPDO1 and TPDO1, then can achieve positioning control.

Note: Controller's axis control logic must be Linear Control.

2. When controller uses pulse unit.

Recommend configuration: Pulse number = Encoder count number. Then LMAC electrical cycle length: 20,000 pulses, the amount of movement of the worktable in a pole pair distance: 20,000 (counts)

Example: Controller sends 1,000 pulses, and motor moves 1,000 μm = 1 mm.

3. When controller use mm unit.

Recommend configuration: Pulse number = Encoder count number. Then LMAC electrical cycle length: 20,000 pulses, the amount of movement of the worktable in a pole pair distance: 20 (mm)

Example: Motor moves 1 mm = 1,000 μm , and controller needs to send 1,000 pulses.

Note: Misumi LMAC electrical cycle length is 20 mm = 20,000 μm .