



Misumi Drive

PR Control

Application Note

V 1.2

Contents

1. PR Function	5
1.1 PR Mode Introduction	5
1.2 PR control step	6
2. PR Control Parameters.....	8
2.1 PR Control Mode	8
2.2 PR Path Parameters	8
2.2.1 PR path mode	9
2.2.2 Path position and velocity parameters	10
2.2.3 S code	11
2.3 Homing	13
2.3.1 Homing Mode	13
2.3.2 Homing Parameters	14
2.3.3 Homing Sequence	16
2.4 Control Parameter	19
2.4.1 Physical IO Signal Assignment	19
2.4.2 Physical IO trigger method	21
2.4.3 Physical IO trigger signal.....	22
2.4.4 RS485 Trigger Method.....	22
2.4.5 Control Parameter List	23
2.5 Other Parameters	25
2.5.1 Software Limit	25
2.5.2 Emergency Stop.....	25
2.5.3 Homing After Power ON.....	25
2.6 RS485 Parameters.....	26
2.6.1 RS485 Physical Connector.....	26
2.6.2 RS485 Communication Parameter	26
2.6.3 RS485 Address Mapping.....	27
2.6.4 Use RS485 to Save Parameters	27
2.6.5 Address of Current Driver Alarm	28
3 EDrive Software Manual Debugging	29
3.1 Control Parameters	30

3.2 Path Parameter	30
3.3 Manual Debugging	32
3.3.1 Motion Parameters.....	32
3.3.2 Monitoring Parameters	33
3.3.3 Manually Trigger Homing	33
3.3.4 Manually Trigger PR Path.....	33
3.3.5 Emergency Stop.....	33
4. Physical I/O Control Example	34
4.1 Enable the PR Mode	34
4.2 Path Parameters Setting	34
4.3 Homing Parameters Setting	35
4.4 Control Parameters	35
4.4.1 Physical I/O Signal Assignment	35
4.4.2 Physical I/O Trigger.....	36
4.5 Other Parameters Setting.....	36
4.6 Software Debugging	37
4.7 Motion Triggering.....	37
5 RS485 Control Example	38
5.1 Enable PR Mode	38
5.2 Path Parameter Setting	38
5.2.1 Set with EDrive Software	38
5.2.2 Set with RS485.....	38
5.3 Homing Parameters Setting	38
5.4 Physical I/O Signal Assignment	38
5.5 Other Parameters Setting.....	38
5.6 EDrive Software Dubugging.....	38
5.7 RS485 Examples	38
5.7.1 Motor Servo ON	38
5.7.2 PR0 Absolute Motion.....	39
5.7.2 PR0 Relevant Motion	39
5.7.3 PR0 Velocity Motion	40
5.7.4 PR1 Absolute Motion.....	40

5.7.5 JOG motion	40
5.7.6 Homing	42

Version Update Record

Version	Update date	Update content
V1.0	2025-02	First release
V1.1	2025-08	Add Modbus RTU control
V1.2	2025-09	Revise CN3/CN4 pin assignment

1. PR Function

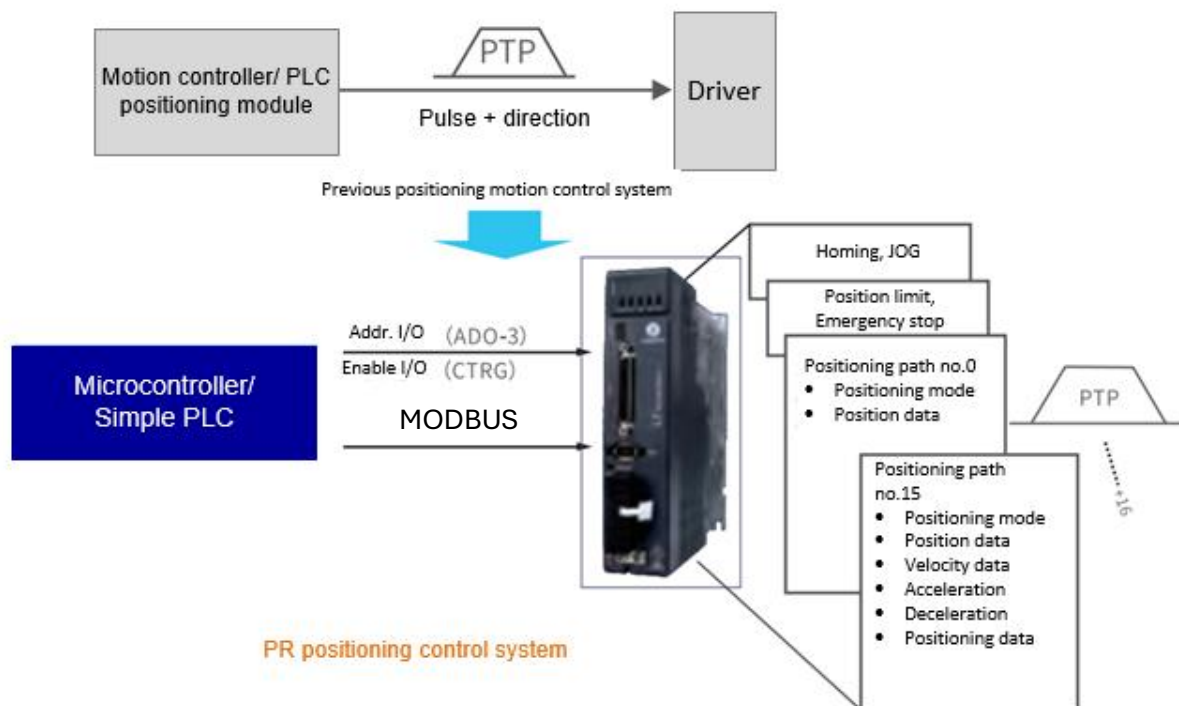
1.1 PR Mode Introduction

In some cost sensitive applications, users do not use controller, control card nor PLC control unit to do the motion control. Normally, the motion of this kind of application won't be very complicated. One solution is using digital input to trigger pre-defined positioning motion saved in drive.

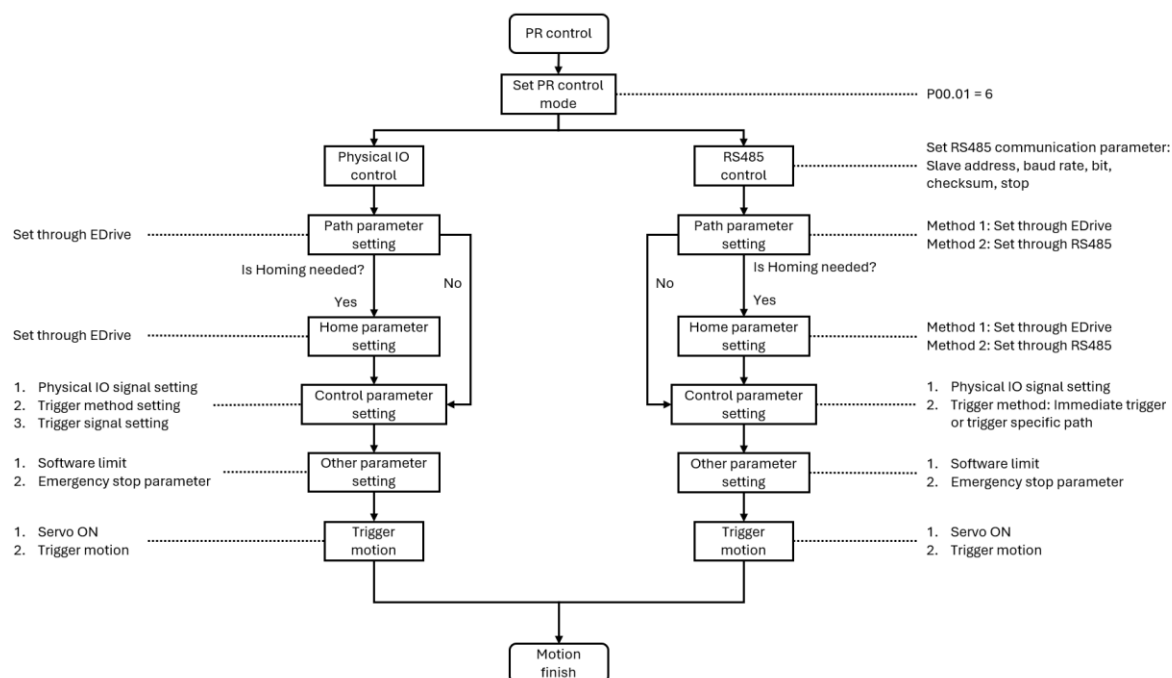
In Misumi drive, it is called PR control.

PR function is a control module in servo drive that controls single axis motion using PProcedure program. Main single axis motion control functions included homing, path, position limit and emergency stop. Using PR functions can save the resources on the main controller.

Note: Physical IO control and 485 control can coexist. Try to choose one of them.
Improper logic handling may cause confusion and lead to other unpredictable effects.



1.2 PR control step



The main functions supported by PR control are listed below:

Function	Description
Homing	Driver seeks origin signal through homing to determine zero point of the mechanical motion coordination system. - Homing mode configurable. Can be chosen between position limit signal homing, origin signal homing and manually set home. - Homing direction configurable. - Specific position can be set after homing completed. - Homing velocity, acceleration and deceleration configurable. - High homing velocity to locate origin and low homing velocity to look for home sensor signal.
JOG	Forward/Reverse JOG through I/O control. Used for tuning. - JOG direction: forward JOG, reverse JOG. - JOG velocity and acceleration configurable
Position limit	Prevent mechanical damage by limiting the range of motion. - Positive/Negative position limit input through I/O. - Software position limit - Position limit deceleration configurable.
Emergency stop	Emergency stop input signal through I/O. To stop any operating motion

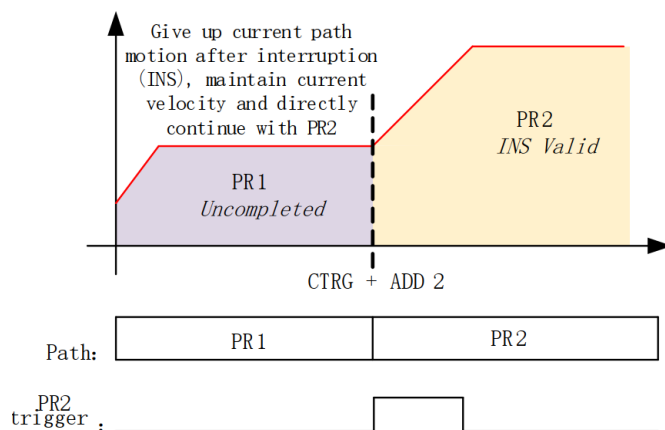
Path motion	Select path ID through IO (ADD0-3), then trigger path motion through enable IO (CTRG). Or directly through I/O combination mode. Path motion can be controlled directly through 485 communication as well. 1. Path motion includes positioning, velocity and homing modes. 2. I/O trigger includes rising edge, double edges trigger. 3. Supports continuous positioning. 4. Max. 16 paths. 5. Configurable position, velocity and acceleration/deceleration. 6. Pause time/ timer configurable
485 communication	PR parameter R/W through 485 communication. Control PR functions such as homing, JOG, path motion, emergency stop, etc.

2.2.1 PR path mode

P09.00	Label	PR0 Mode			Valid mode(s)	PR		
	Range	0x0~0xFFFF	Unit	-	Default	0x0		
	Byte length	16bit	Attribute	R/W	485 address	0x6200		
	Valid	Immediate						
Bit	14	8~13	6~7	5	4	0~3		
Definition	0: No Jump, indicates with END 1: Jump. Jump to SJ or CJ	0-15: Jump to correspond path	0: absolute 1: correspond command 2: correspond motor	0: No overlap, indicates with SJ 1: Overlap, indicated with CJ	0: Can be Interrupt 1: Can't be Interrupt, indicates using!	0: null 1: Positioning 2: Velocity motion 3: Homing 4: Emergency stop Indicates using P/V/H/S		

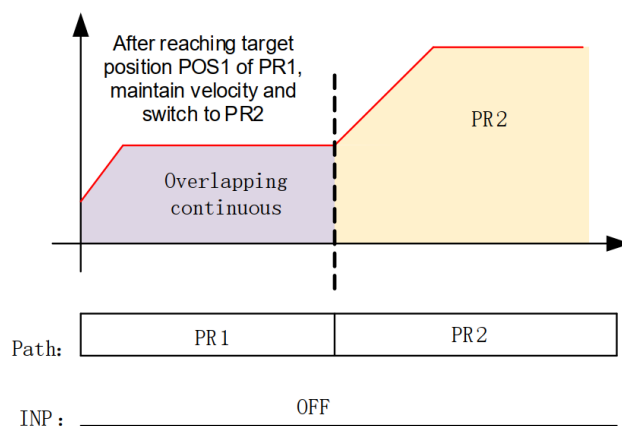
2.2.1.1 Multi-path interrupted motion

In multi-path motion, path motion that is triggered later will interrupt path motion that has already started. Please refer to the sequence diagram below



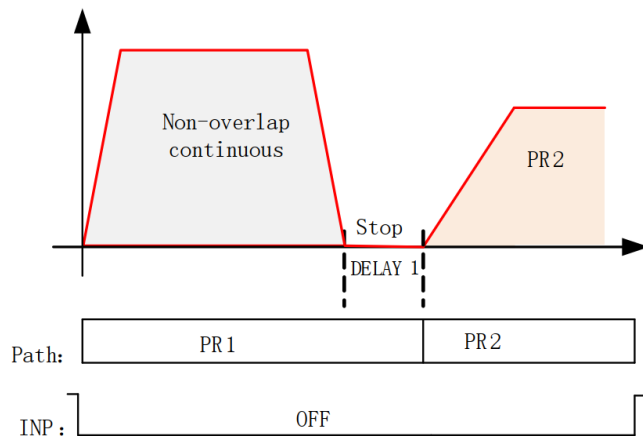
2.2.1.2 Overlapping continuous motion

Path motion starts immediate after the previous path motion is completed without deceleration or trigger in between.



2.2.1.3 Non-overlap continuous motion

Path motion continues by another, no trigger needed for the next one to start.



2.2.2 Path position and velocity parameters

Path motion: Segmented, continuous, interrupted.

Path positioning: Position, velocity, homing.

PR path is to a total of 16 paths. Every path can be set with motion type, positioning mode, velocity, acceleration, deceleration and pause time independently.

Parameter	Label	Description	485 addr.
P09.01	PR0 position	PR0 position high 16bit, unit: pulse (Only able to read low 16-bit using 485 communication)	0x6201
P09.02	PR0 position	PR0 position low 16bit	0x6202
P09.03	PR0 speed	Velocity, unit: mm/s, range: -10000~+10000	0x6203
P09.04	PR0 acceleration	Unit: ms/(m/s)	0x6204
P09.05	PR0 deceleration	Unit: ms/(m/s)	0x6205
P09.06	PR0 pause time	Unit: ms When the PR0 path is set to jump without overlap, after PR0 is executed, it needs to wait for the time set by P09.06 to execute the next specified path.	0x6206
P09.07	PR0 special parameter	The function of writing parameters is the same as that of P08.02, and reading has no function.	0x6207

Note:

1. P09.01 and P09.02 are combined to form the position parameters for the PR0 path, expressed in pulses. When using 85 communication, be aware of negative position values.
2. If the speed parameter P09.03 on the PR page exceeds the range, the software will not display a warning message. However, all parameters will display an out-of-range alarm, and the 485 will display error code 03.
3. The special parameters corresponding to PR1 in P09.15 are not effective, and so on. The 485 immediate trigger mode only supports PR0.

2.2.3 S code

S-code (Status code) is the S-code of currently operating PR positioning data. Every PR path has a S-code setting (P08.48-P08.63).

S-code	Sx.H		Sx.L	
Bit	15	8-14	7	0-6
Description	S-code valid when completed. 0: Invalid, retain previous value 1: Valid	S-code upon completion	S-code valid upon activation 0: Invalid 1: Valid	S-code upon activation

The S code at startup and the S code at completion are displayed using the SDX signal output by DO.

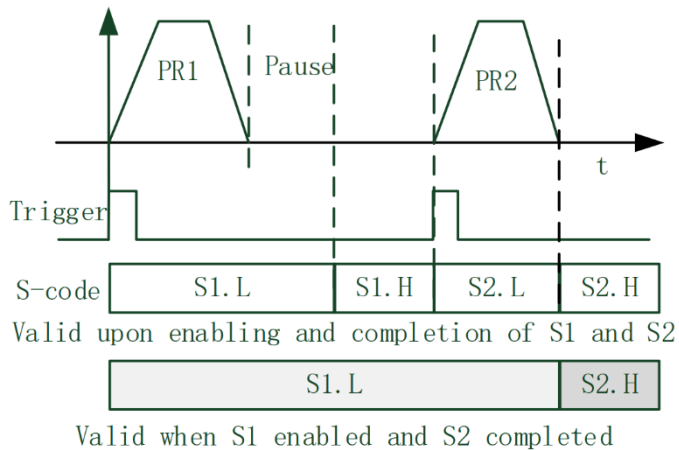
S-code bit	bit0/8	bit1/9	bit2/10	bit3/11	bit4/12	bit5/13	Bit6/14
SDx	SD0	SD1	SD2	SD3	SD4	SD5	SD6

Physical Output S Sode

Input				Output			
Signal	Label	Value		Signal	Label	Value	
		NO	NC			NO	NC
Trigger Command	CTRG	20h	A0h	Command Finish	CMD_OK	20h	A0h
Homing Signal	HOME	21h	A1h	Path Finish	PR_OK	21h	A1h
Force Stop	STP	22h	A2h	Homing Finish	HOME_OK	22h	A2h
Forward JOG	PJOG	23h	A3h	S Code 0	SD0	23h	A3h
Reverse JOG	NJOG	24h	A4h	S Code 1	SD1	24h	A4h
Positive Limit	PL	25h	A5h	S Code 2	SD2	25h	A5h
Negative Limit	NL	26h	A6h	S Code 3	SD3	26h	A6h

Origin Signal	ORG	27h	A7h	S Code 4	SD4	27h	A7h
Path Address 0	ADD0	28h	A8h	S Code 5	SD5	28h	A8h
Path Address 1	ADD1	29h	A9h	S Code 6	SD6	29h	A9h
Path Address 2	ADD2	2Ah	AAh	PR Warning	PRWAR	2Ah	AAh
Path Address 3	ADD3	2Bh	ABh	-			
Torque Switch	TL-SEL	09h	89h				

Timing diagram



For example:

Path 1's S code is 0x818A, and Path 2's S code is 0x828B. Path 1 is executed before Path 2.

S code status analysis:

0x818A = 1000 0001 1000 1010;

The S code is valid when Path 1 starts and when it finishes.

0x828B = 1000 0010 1000 1011;

The S code is valid when Path 2 starts and when it completes.

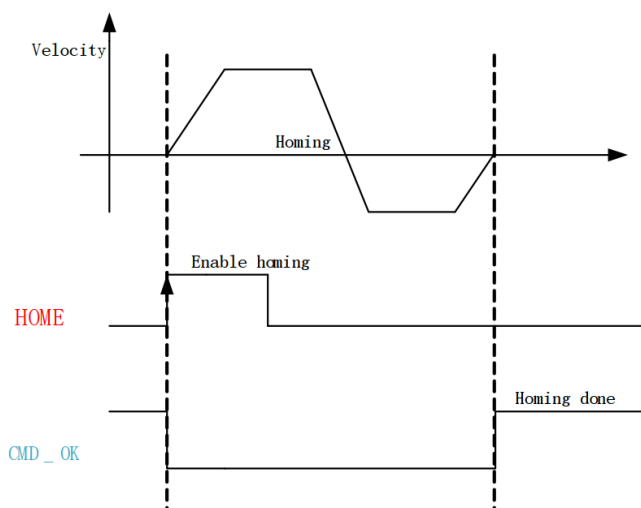
SDX Status	SD6	SD5	SD4	SD3	SD2	SD1	SD0
Path 1 start S code	0	0	0	0	0	0	1
Path 1 finish S code	0	0	0	1	0	1	0
Path 2 start S code	0	0	0	0	0	1	0
Path 2 finish S code	0	0	0	1	0	1	1

2.3 Homing

2.3.1 Homing Mode

Homing is divided into 4 methods according to home signal: Position limit homing, origin homing, torque homing, manually set home. Homing can be triggered upon power on or using I/O after servo enabled.

Homing sequence diagram



1. **HOME**: Homing trigger signal. When HOME is valid, homing will be done according to set homing method.

2. **CMD_OK**: Command completed signal. Invalid when command is being carried out, valid when command is done.

Please refer to P08.10 to set homing methods and other homing mode related settings. It is recommended to use Motion Studio to modify the control parameters in PR mode.

P08.10	Label	Homing			Valid mode(s)	PR		
	Range	0x0~0xFFFF	Unit	-	Default	0x0		
	Byte length	16bit	Attribute	R/W	485 address	0x600A		
	Valid	Immediate						
To set homing method in PR mode. It is recommended to modify PR control parameters using Motion Studio.								
Bit	8 (Z-signal homing)	2~7 (Homing mode)		1 (Specific position after homing)	0 (homing direction)			
Des- cription	=1, homing with Z-signal =0, homing without Z-signal	=0 Limit homing =1 Origin homing =2 Single turn Z homing =3 Torque homing =8 Immediate homing		=1, Yes =0, No	=1, Forward =0, Reverse			

P08.14	Label	Home Stop Pos			Valid mode(s)	PR		
	Range	-2 ³¹ ~2 ³¹ -1	Unit	pulse	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x600E		
	Valid	Immediate						
To set home position offset. Using 485 communication, only able to R/W low 16 bit. R/W high 16 bit needs to be realized through P08.13.								

2.3.2 Homing Parameters

P08.12	Label	Home Pos			Valid mode(s)	PR		
	Range	-2 ³¹ ~2 ³¹ -1	Unit	pulse	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x600C		
	Valid	Immediate						
To set zero position. Using 485 communication, only able to R/W low 16 bit. R/W high 16 bit needs to be realized through P08.11.								

P08.15	Label	High Velocity			Valid mode(s)	PR		
	Range	1~600	Unit	mm/s	Default	50		
	Byte length	16bit	Attribute	R/W	485 address	0x600F		
	Valid	Immediate						
To set high homing velocity in PR mode.								

P08.16	Label	Low Velocity			Valid mode(s)	PR		
	Range	1~600	Unit	mm/s	Default	10		
	Byte length	16bit	Attribute	R/W	485 address	0x6010		
	Valid	Immediate						
To set low homing velocity in PR mode.								

P08.17	Label	Acceleration			Valid mode(s)	PR		
	Range	1~32767	Unit	ms/(m/s)	Default	100		

	Byte length	16bit	Attribute	R/W	485 address	0x6011		
	Valid	Immediate						
To set homing acceleration time in PR mode, time needed for 0mm/s to accelerate to 1000mm/s								

P08.18	Label	Deceleration			Valid mode(s)	PR		
	Range	1~32767	Unit	ms/(m/s)	Default	100		
	Byte length	16bit	Attribute	R/W	485 address	0x6012		
	Valid	Immediate						
To set homing deceleration time in PR mode, time needed for 1000mm/s to decelerate to 0mm/s								

P08.19	Label	Torque Homing Time			Valid mode(s)	PR		
	Range	0~65536	Unit	ms	Default	100		
	Byte length	16bit	Attribute	R/W	485 address	0x6013		
	Valid	Immediate						
To set homing torque holding time								

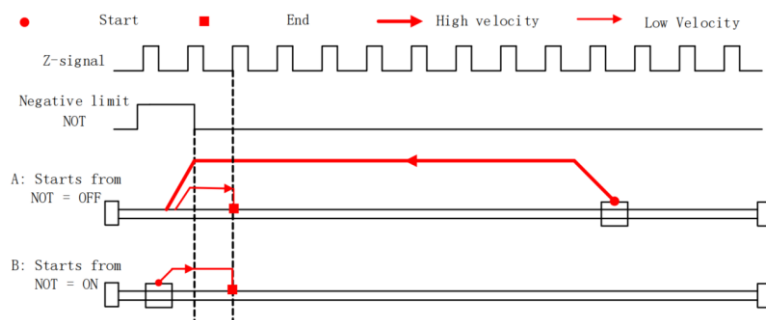
P08.20	Label	Torque Homing Value			Valid mode(s)	PR		
	Range	0~65536	Unit	%	Default	100		
	Byte length	16bit	Attribute	R/W	485 address	0x6014		
	Valid	Immediate						
To set homing torque								

P08.21	Label	Homing overstep			Valid mode(s)	PR		
	Range	0~65536	Unit	0.1r	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x6015		
	Valid	Immediate						
To set homing overtravel alarm threshold.								

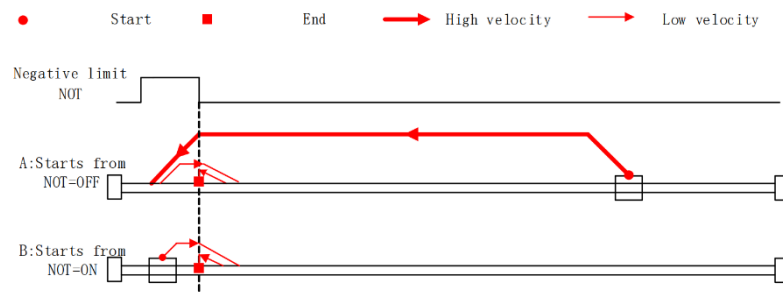
2.3.3 Homing Sequence

2.3.3.1 Limit homing

With Z signal

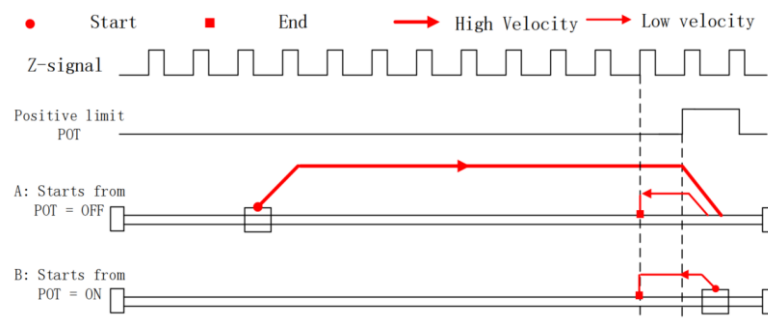


Without Z signal:

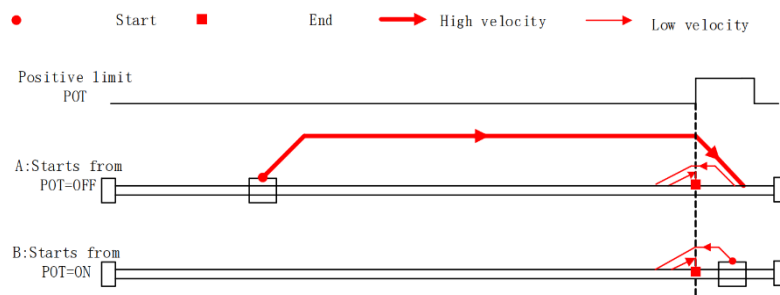


2.3.3.2 Positive limit homing

With Z signal

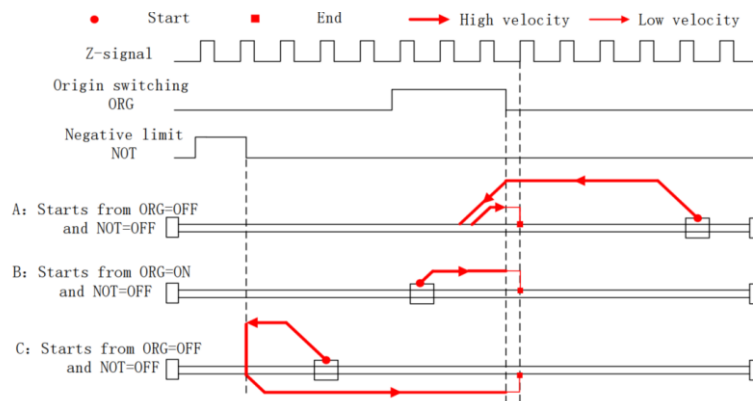


Without Z signal

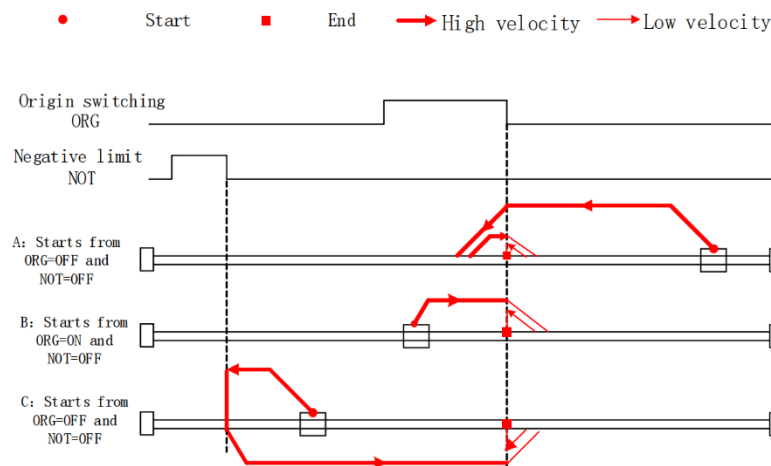


2.3.3.3 Origin homing

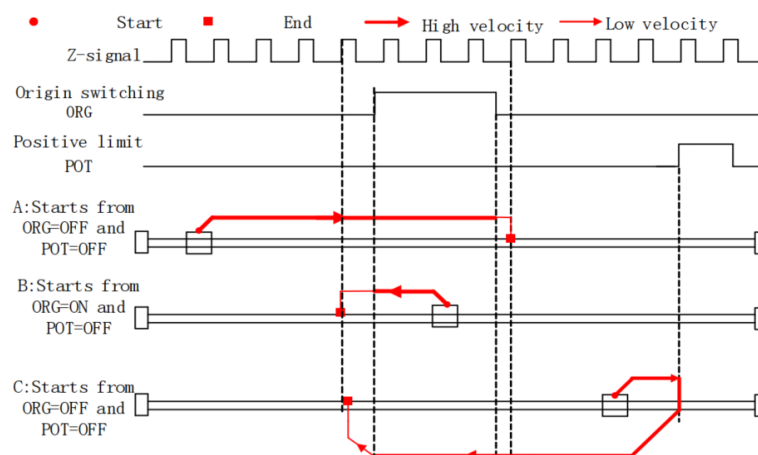
Negative direction with Z signal:



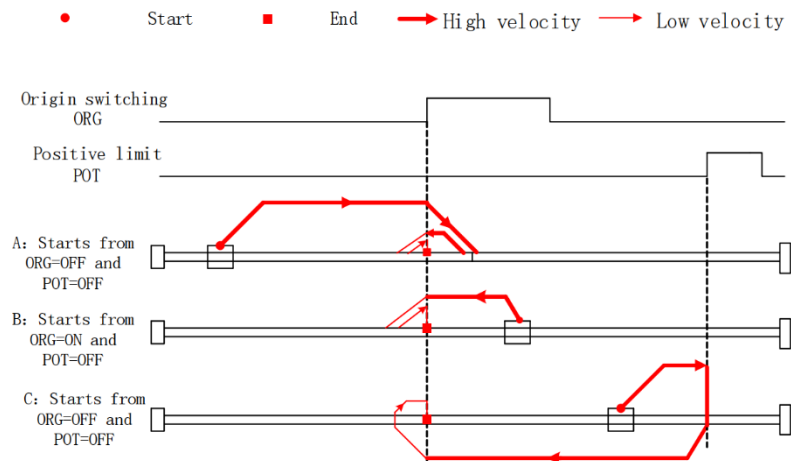
Negative direction without Z signal:



Positive direction with Z signal:

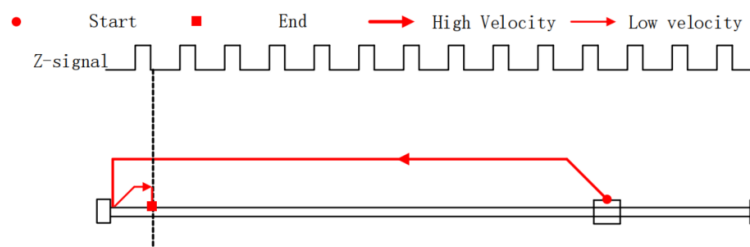


Positive direction without Z signal:

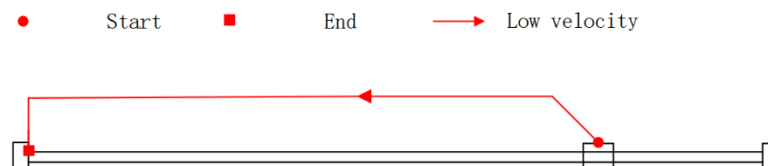


2.3.3.4 Torque homing

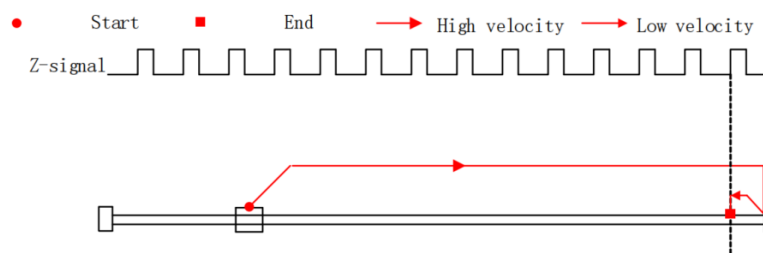
Negative direction with Z signal:



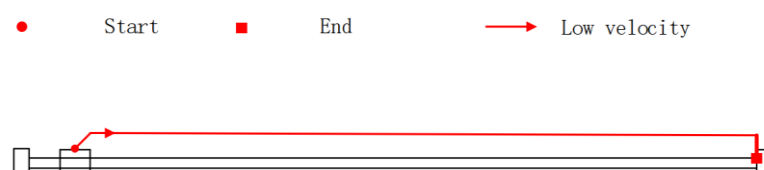
Negative direction without Z signal:



Positive direction with Z signal:



Positive direction without Z signal:



2.4 Control Parameter

2.4.1 Physical IO Signal Assignment

Common Signals

Enable Signal: SRV-ON
Positive Limit: POT or PL
Negative Limit: NOT or NP
PL and NL are only effective in PR mode
Origin Signal: ORG
Forward Jog: PJOG
Reverse Jog: NJOG

Physical I/O Trigger Methods

Trigger Command: CTRG
Return to Origin Trigger: HOME
Path Address 0: ADDR0
Path Address 1: ADDR1
Path Address 2: ADDR2
Path Address 3: ADDR3

Output Pins

Signal	Sign	Setting value	
		NO	NC
Invalid	—	00h	80h
Servo Alarm	ALARM	01h	81h
Servo Ready	SRDY	02h	82h
External break released	BRK-OFF	03h	83h
In Position	INP	04h	84h
At speed	AT-SPEED	05h	85h
Torque limited output	TLC	06h	86h
Zero speed clamping detection output	ZSP	07h	87h
Velocity consistency output	V-COIN	08h	88h
Servo enable active state output	SRV-ST	12h	92h
Positive limit active output	POT-OUT	15h	95h
Negative limit active output	NOT-OUT	16h	96h
Position command presence output	P-CMD	0Bh	8Bh
Velocity command presence output	V-CMD	0Fh	8Fh
Velocity limit signal	V-LIMIT	0Dh	8Dh
Position comparison output	CMP-OUT	14h	94h

Input Pin Assignment

Signal	Sign	Setting value	
		NO	NC
Invalid	—	00h	-

Positive limit switch	POT	01h	81h
Negative limit switch	NOT	02h	82h
Servo enabled	SRV-ON	03h	83h
Clear Alarm	A-CLR	04h	-
Control mode switching	C-MODE	05h	85h
Gain switching	GAIN	06h	86h
Clear deviation count	CL	07h	-
Command pulse prohibited	INH	08h	88h
Torque limit switching	TL-SEL	09h	89h
Command frequency divider/multiplier switching	DIV1	0Ch	8Ch
Internal command velocity 1	INTSPD1	0Eh	8Eh
Internal command velocity 2	INTSPD2	0Fh	8Fh
Internal command velocity 3	INTSPD3	10h	90h
Internal command velocity 4	INTSPD4	31h	B1h
Zero speed clamp	ZEROSPD	11h	91h
Velocity command sign	VC-SIGN	12h	92h
Velocity command sign 2	VC-SIGN2	4Ah	CAh
Torque command sign	TC-SIGN	13h	93h
Emergency stop	E-STOP	14h	94h
Inertia ratio switching input	J-SEL	15h	95h
Gantry disable	GTRY	17h	97h
Vibration reduction control switching input 1	VS-SEL1	0Ah	8Ah
Vibration reduction control switching input 2	VS-SEL2	0Bh	8Bh

PR Function Settings

Input				Output			
Signal	Label	Value		Signal	Label	Value	
		NO	NC			NO	NC
Trigger Command	CTRG	20h	A0h	Command Finish	CMD_OK	20h	A0h
Homing Signal	HOME	21h	A1h	Path Finish	PR_OK	21h	A1h
Force Stop	STP	22h	A2h	Homing Finish	HOME_OK	22h	A2h
Forward JOG	PJOG	23h	A3h	S Code 0	SD0	23h	A3h
Reverse JOG	NJOG	24h	A4h	S Code 1	SD1	24h	A4h
Positive Limit	PL	25h	A5h	S Code 2	SD2	25h	A5h
Negative Limit	NL	26h	A6h	S Code 3	SD3	26h	A6h
Origin Signal	ORG	27h	A7h	S Code 4	SD4	27h	A7h
Path Address 0	ADD0	28h	A8h	S Code 5	SD5	28h	A8h
Path Address 1	ADD1	29h	A9h	S Code 6	SD6	29h	A9h
Path Address 2	ADD2	2Ah	AAh	PR Warning	PRWAR	2Ah	AAh
Path Address 3	ADD3	2Bh	ABh	-			
Torque Switch	TL-SEL	09h	89h				

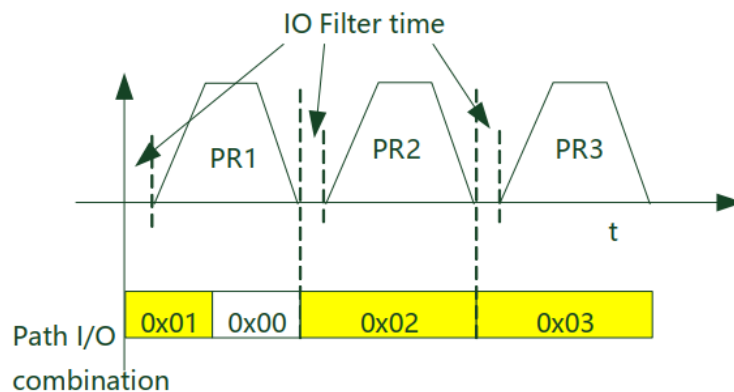
2.4.2 Physical IO trigger method

P08.26	Label	IO Trigger Mode			Valid mode(s)	PR		
	Range	0~65536	Unit	-	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x601A		
	Valid	Immediate						
Value	Description							
0	Disable I/O combination trigger mode. Uses I/O CTRG signal edge trigger.							
1	Enable I/O combination trigger. Valid when HOME-OK signal is valid.							
2	Enable I/O combination trigger. HOME-OK signal not required.							

There are two types of path motion triggers: edge trigger and combination trigger, determined by control parameter P08.26.

- Edge Trigger: The motion path is selected by the path combination, and then an edge event of the IO is triggered to initiate the motion once.
- Combination Trigger: This method does not use a trigger signal but directly uses the level combination of the IO to trigger the action. Path 0 is an invalid action. When the IO combination changes to a non-zero path, it triggers the path to run once after IO filtering.

The timing diagram is as follows:



Home-OK signal:

The home-OK signal must be linked via a physical DO output. **The 485 reads the DO signal status to confirm whether the home-OK signal has been executed.**

2.4.3 Physical IO trigger signal

P08.00	Label	PR Mode			Valid mode(s)	PR		
	Range	0x0~ 0xFFFF	Unit	-	Default	0x0		
	Byte length	16bit	Attribute	R/W	485 address	0x6000		
	Valid	Immediate						
It is recommended to modify PR control parameters using EDrive.								
Bit	Other		2		1		0	
Des- cription	Reserved		=1, homing upon power on =0, no homing upon power on		=1, software position limit valid =0, software position limit not valid		=0, CTRG rising edge trigger =1, double edges trig	

2.4.4 RS485 Trigger Method

2.4.4.1 Single trigger

Step 1: Use either debugging software or RS-485 communication to configure parameters for the preset path.

Step 2: Trigger the specified path action by writing a value to parameter P08.02.

P08.02	Label	Control register			Valid mode(s)	PR		
	Range	0x0~ 0xFFFF	Unit	-	Default	0x0		
	Byte length	16bit	Attribute	R/W	485 address	0x6002		
	Valid	Immediate						
Attributes of P08.02 functions are divided into Read/Write. P refers to positioning motion of N path. Please refer to the following table.								
Attributes	Address	Description						
Write	0x01P	N path positioning						
Write	0x020	Reset						
Write	0x021	Manually set currently position as 0 (Origin)						
Write	0x040	Emergency stop						
Read	0x000P	Positioning completed. Ready to receive new data						
Read	0x01P, 0x020, 0x040	Yet to respond to command						
Read	0x10P	Path motion undergoing						
Read	0x200	Command completed. Waiting for positioning						

2.4.4.2 Immediate trigger

When using RS-485 communication, you can write all parameters for PR0 path at once (P09.00 to P09.07) and initiate motion directly.

Note: Writing to P09.07 has the same effect as writing to P08.02 — it triggers the motion immediately, but only supports PR0.

Write message format:

No.	Data Code	Remark	Value
1	ID	Slave	1~127
2	FC	Function code	0x10
3	ADDR	Address	0x62
4	ADDR	Address	0x00
5~6	NUM1	Data count (word)	0x0008
7	NUM2	Data count (Byte)	0x10
8~9	P09.00	Mode	XXXX
10~11	P09.01	Position high bit	XXXX
12~13	P09.02	Position Low bit	XXXX
14~15	P09.03	Velocity	XXXX
16~17	P09.04	Acceleration	XXXX
18~19	P09.05	Deceleration	XXXX
20~21	P09.06	Pause time	XXXX
22~23	P09.07	Trigger control	0x0010
24	CRC	Checksum Lo	-
25		Checksum Hi	-

2.4.5 Control Parameter List

Parameter	Label	Description	485 Addr.
P08.00	PR Control Settings	PR control functions Bit 0: =0, CTRG rising edge trigger =1, double edges trigger Bit 1: =1, software position limit valid, =0, software position limit not valid Bit 2: =1, homing upon power on, =0, no homing upon power on Bit 3: =1, absolute value memory, =0, absolute value with no memory	0x6000
P08.01	Number of paths	16 paths	0x6001
P08.02	Control Operation	--	0x6002
P08.07	Positive software limit	Software positive limit (Only able to read low 16-bit using 485 communication)	0x6007
P08.09	Negative software limit	Software negative limit (Only able to read low 16-bit using 485 communication)	0x6009
P08.10	Homing mode	Homing method in PR mode Bit 0: Homing direction =0: Reverse =1: Forward Bit 1: Specific position after homing =0: No	0x600A

		=1: Yes Bit2~7: Homing mode =0: Position limit homing =1: Origin homing =3: Torque homing =8: Immediate homing	
P08.11	Zero position H	Zero position high bit (Only able to read low 16-bit using 485 communication)	0x600B
P08.12	Zero position L	Zero position low bit	0x600C
P08.14	Homing stop position	Home position offset (Only able to read low 16-bit using 485 communication)	0x600E
P08.15	High speed Homing	Set high homing velocity	0x600F
P08.16	Low speed Homing	Set low homing velocity	0x6010
P08.17	Homing acceleration	Set homing acceleration	0x6011
P08.18	Homing deceleration	Set homing deceleration	0x6012
P08.19	Torque homing time	Set homing torque holding time	0x6013
P08.20	Torque homing value	Set homing torque value	0x6014
P08.21	Homing overtravel	Set homing overtravel alarm threshold, set to 0 to deactivate the alarm	0x6015
P08.22	Limit emergency stop deceleration	Set position limit emergency stop deceleration	0x6016
P08.23	STOP emergency stop deceleration	Set STP emergency stop deceleration	0x6017
P08.26	I/O combination trigger mode	0: Disable I/O combination trigger mode. Uses I/O CTRG signal edge trigger. 1: Enable I/O combination trigger. Valid when HOME-OK signal is valid. 2: Enable I/O combination trigger. HOME-OK signal not required.	0x601A
P08.27	I/O combination filtering	Set I/O combination filter time	0x601B
P08.28	S code current output value	Display S-code output	0x601C
P08.29	PR Warning	=0: Reset new command automatically =0x100: Position limit error during homing =0x101: Emergency stop. Homing not completed =0x20N: Position limit error on Path N	0x601D
P08.39	JOG Speed	Set JOG speed	0x60270
P08.40	JOG Acceleration	Set JOG acceleration	0x6028
P08.41	JOG Deceleration	Set JOG deceleration	0x6029
P08.42	Command location H	Command position high bit (Only able to read low 16-bit using 485 communication)	0x602A
P08.43	Command location L	Command position low bit	0x602B
P08.45	Motor position	Motor position (Only able to read low 16-bit using 485 communication)	0x602D
P08.46	Input IO	Input status	0x602E
P08.47	Output IO	Output status	0x602F
P08.48- P08.63	S-code setting for path N	Path N S-code output settings	0x6030 ~ 0x603F

2.5 Other Parameters

2.5.1 Software Limit

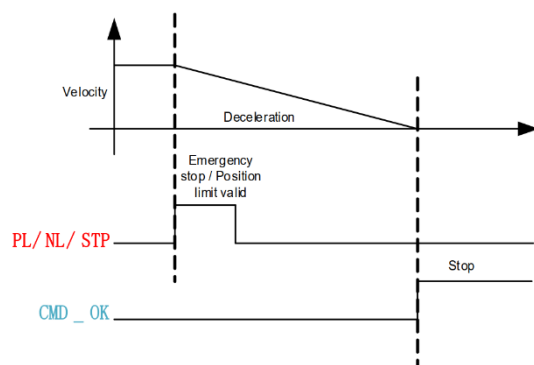
P08.00 Function		Description
Bit1:	0 - Soft limit valid 1 - Soft limit invalid	During the execution of the soft limit, the drive will stop when the position reaches the set soft limit, and reverse motion can be executed at this time. Positive Limit - unit: pulse, parameter: P08.07 (L) P08.08(H) Negative Limit - unit: pulse, parameter: P08.09 (L), P08.10(H) When communicating via 485, pay attention to the sign and the limit value is of DINT type.

2.5.2 Emergency Stop

For safety concerns, PR mode is designed to trigger emergency stop when position limit or emergency stop signal is valid. Please refer to the sequence diagram below.

Emergency Stop Deceleration upon Limit – P08.22, unit: ms/(m/s)

STOP deceleration – P08.23, unit: ms/(m/s)

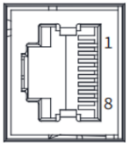
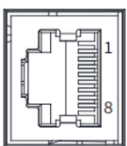


2.5.3 Homing After Power ON

P08.00 Function		Description
Bit2:	0 - Homing after power ON 1 - No Homing after power ON	The driver will automatically perform Homing after power cycle and servo ON. Note: Resetting the driver will not perform Homing after power cycle.

2.6 RS485 Parameters

2.6.1 RS485 Physical Connector

Connector	Diagram	Pin	Singal	Description
CN3/CN4	 	1	422+	422 Data+ (Gantry communication)
		2	422 -	422 Data- (Gantry communication)
		3	-	-
		4	485+	RS485 Data+
		5	485-	RS485 Data-
		6	5V	Reserved, 5V + (50mA)
		7	-	-
		8	GND	Ground
		Frame	PE	Shield Grounding

Note: The pin sequence from the top to the bottom of the driver is CN3 8-1, CN4 8-1.

2.6.2 RS485 Communication Parameter

P05.29	Label	RS485 Communication Mode			Valid mode(s)	P	S	T
	Range	0-31	Unit	-	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x053B		
	Valid	Restart						
Value		Bit		Checksum			Stop	
0		8		Even			2	
1		8		Odd			2	
2		8		Even			1	
3		8		Odd			1	
4		8		Null			1	
5		8		Null			2	

P05.30	Label	RS485 Communication Baud Rate			Valid mode(s)	P	S	T
	Range	0-13	Unit	-	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x053D		
	Valid	Restart						
Value	Baud rate			Value	Baud rate			
0	2400bps			4	38400bps			
1	4800bps			5	57600bps			
2	9600bps			6	115200bps			
3	19200bps							
Baud rate tolerance: 2400~38400bps±0.5%, 57600~115200bps±2%								

P05.31	Label	Rs485 Axis Address			Valid mode(s)	P	S	T
	Range	0-127	Unit	-	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x053F		
	Valid	Restart						
When controller is connected to multiple axis and controller needs to identify the axis, P05.31 can be used to set the axis ID/address. Please set to a max of 31 if the communication is between RS232 and RS485								

2.6.3 RS485 Address Mapping

For Class 8 parameters: $0x6000 + (\text{parameter number} - 800)$. For example, the communication address for parameter P08.06 is: $0x6000 + (806 - 800) = 0x6006$

For Class 9 parameters: $0x6200 + (\text{parameter number} - 900)$. For example, the communication address for parameter P09.06 is: $0x6200 + (906 - 900) = 0x6206$

2.6.4 Use RS485 to Save Parameters

To save PR parameters: 01 06 00 33 22 12 E1 68

To save all the parameters (not include PR parameters): 01 06 00 33 22 11 A1 69

P00.22	Label	Auxiliary function			Valid mode(s)	P	S	T
	Range	0x0~0xFFFF	Unit	-	Default	0		
	Byte length	16bit	Attribute	R/W	485 address	0x0033		
	Valid	Immediate						
Parameter		Auxiliary function						
0x1111		Reset current alarm						
0x1122		Reset record alarm						
0x2211		Save parameter to EEPROM (not including PR)						
0x2212		Save PR parameters						
0x2222		Initialize parameter (not including motor parameters)						
0x2233		All parameters restore to default						
0x3322		Analog 2 self-learning zero point						
0x3333		Analog 3 self-learning zero point						
0x4001		JOG_P（once every 50ms）						
0x4002		JOG_N（once every 50ms）						
0x4411		Encoder auto correction to zero						
0x6666		Software reset						
Only for RS485 communication, please write corresponding parameters into Pr0.25. Do not use JOG P and JOG N in PR mode.								

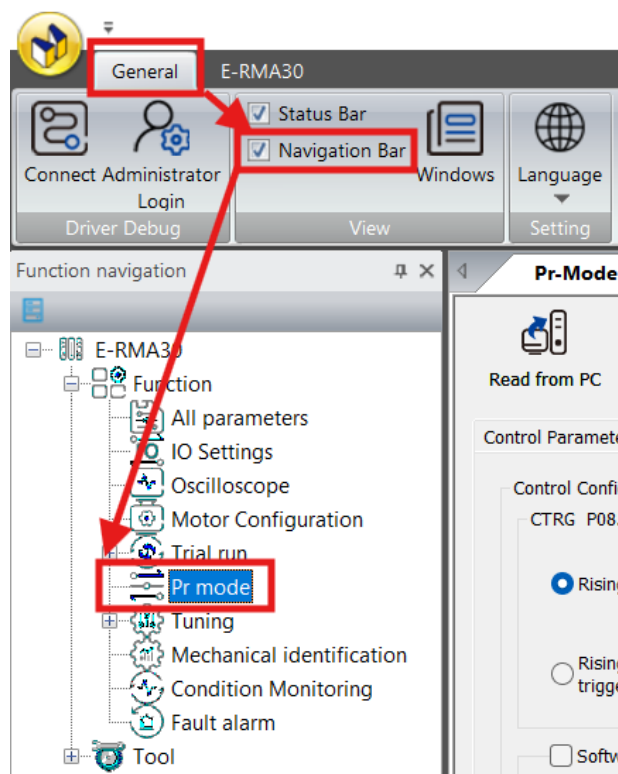
2.6.5 Address of Current Driver Alarm

Current driver alarm register, 0x0B03

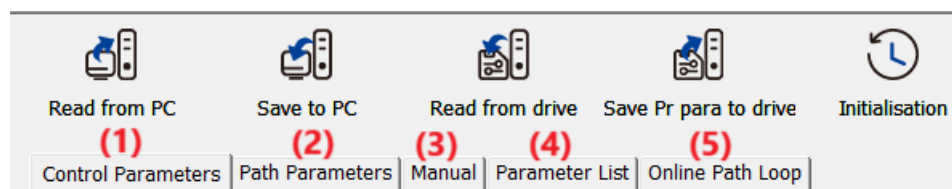
PAB.03	Label	Current alarm			Valid mode(s)	P	S	T
	Range	-	Unit	-	Default	-		
	Byte length	16bit	Attribute	R	485 address	0x0033		
Display current driver alarm.								

3 EDrive Software Manual Debugging

User can go to 'General' tab, tick 'Navigation Bar' and double click 'Pr mode' to open the setting page.



1. PR parameters can be set including trigger settings, software position limit, homing, emergency stop, etc. in the 'Control Parameters' tab.
2. All class 9 parameters for 0-15 paths can be found under 'Path Parameters' tab once connected to a servo drive that supports PR mode.
3. Manual control of servo drive in PR mode can be done in 'Manual' tab.
4. All PR mode and control parameters can be found in 'Parameter List' tab for convenience of tuning.
5. Can run PR mode in a loop in 'Online Path Loop' tab.



3.1 Control Parameters

Set Control Parameters: Such as trigger method, homing motion, emergency stop speed, etc. The operation interface is shown below:

Note: After setting Control Parameters, need to click 'Save Pr para to drive' to implement.

3.2 Path Parameter

Set Path Parameters: Such as path motion configuration, path motion parameters (S_code), etc. The path parameter setting interface is shown below:

The entire interface is divided into three areas:

Function Area: Includes uploading path parameters, issuing them, backing them up to the computer, saving parameters, etc.

Parameter Setting Area: Sets the operating mode, motion parameters, and output S_code for 16 segments of motion paths.

Positioning Mode Identification Analysis Area: Explains the meaning of the path operating mode identification.

Read from PC
 Save to PC
 Read from drive
 Save Pr para to drive
 Initialisation

Function Area

Control Parameters
Path Parameters
Manual
Parameter List
Online Path Loop

Path ID	Positioning	Position(P)	Velocity(mm/s)	Acceleration(ms...)	Deceleration(m...	Pause Time(...)	S-C...
0	00000H:._END	0	60	100	100	0	0x0
1	00000H:._END	0	60	100	100	0	0x0
2	00000H:._END	0	60	100	100	0	0x0
3	00000H:._END	0	60	100	100	0	0x0
4	00000H:._END	0	60	100	100	0	0x0
5	00000H:._END	0	60	100	100	0	0x0
6	00000H:._END	0	60	100	100	0	0x0
7	00000H:._END	0	60	100	100	0	0x0
8	00000H:._END	0	60	100	100	0	0x0
9	00000H:._END	0	60	100	100	0	0x0
10	00000H:._END	0	60	100	100	0	0x0
11	00000H:._END	0	60	100	100	0	0x0
12	00000H:._END	0	60	100	100	0	0x0
13	00000H:._END	0	60	100	100	0	0x0
14	00000H:._END	0	60	100	100	0	0x0
15	00000H:._END	0	60	100	100	0	0x0

Positioning Mode Identification Analysis Area

Symbol description of positioning mode: Interrupt function (.: interrupt) (!: No Interrupt) + Position type (P: Position mode) (V: Velocity mode) (HOME: Homing mode) (CAP: Relative reference) + Absolute/relative (ABS: absolute command) (INC: Relative command) (REL: Relative to the motor) (CAP: Relative reference) + Jump Function (SJ: Positioning jump) (CJ: Continuous jump) (END: Stop)

For the 'Positioning' setting in the Parameter Setting Area, user can set the positioning mode for each path.

Positioning Mode

Path ID: 0

(1) Pr Type: No motion ▼

(2) Pr Cmd: Absolute ▼ ☐ Interruption proh

☒ Jump to Path **(3)** Jump to Path 0 ▼ ☐ Overlap

- (1) Pr type: No motion, Positioning, Velocity mode, Homing, Emergency stop.
- (2) Pr Cmd: Absolute, Relative Command, Relative to motor, Relative Reference Value.
Enable/Disable Multi-path interrupted motion.
- (3) Jump to Path: Enable/Disable and select which path to jump.
Enable/Disable Overlap.

Configuration example:

Path ID	Positioning	Position(P)	Velocity(mm/s)	Acceleration(ms...	Deceleration(m...	Pause Time(...)	S-C...
0	04191H:!,P,REL,SJ 1	50000	500	100	100	1000	0x0
1	04221H:._,P,ABS,CJ 2	0	100	1000	1000	1000	0x0
2	00041H:._,P,INC,END	-50000	1000	50	50	0	0x0
3	00000H:._,END	0	0	0	0	0	0x0

Path 0: No Interruption. Relative Command Positioning motion. Jump to Path 1 after completion. No overlap. Distance: 50,000 counts. Speed: 500 mm/s. Acc & Dec: 100 ms. Pause Time: 1s.

Path 1: Can be Interrupted. Absolute Positioning motion. Jump to Path 2 after completion. Overlap. Distance: 0 position. Speed: 100 mm/s. Acc & Dec: 1,000 ms. Pause Time: 1s (Not Applicable as Overlap).

Path 2: Can be Interrupted. Relative Command Positioning motion. End motion after completion. No overlap. Distance: -50,000 counts. Speed: 1,000 mm/s. Acc & Dec: 50 ms. Pause Time: 0.

3.3 Manual Debugging

Debugging PR Settings: Includes homing, modifying path trigger motion parameters, input/output, etc. The debugging interface is shown below:

The screenshot displays the 'Manual' tab of a debugging interface. It is divided into three main sections:

- Motion Operation (1):** Contains input fields for P09.00 PR0 mode (dropdown), P09.02 PR0 position (pulse) (50000), P09.03 PR0 speed (mm/s) (60), P09.04 PR0 acceleration (100), P09.05 PR0 deceleration (100), and P09.06 PR0 pause time (ms) (1000). A 'Start' button is on the right.
- Homing (2):** Contains input fields for P08.43 Command location (0), P08.45 Motor position (pulse) (0), P08.46 Input IO (0000 0000), and P08.47 Output IO (0000 0000). It also features a 'Refresh' button, an 'Auto Refresh' checkbox (checked), and 'Homing' and 'Emergency Stop' buttons.
- Trigger Pr-Mode (3):** A grid of 16 buttons numbered 0 to 15. Button 3 is currently selected with a blue border.

The debugging interface is divided into three areas:

- (1) Path 0 parameter setting area. Click the start button to run directly.
- (2) Homing and Emergency Stop trigger buttons with IO and Position refresh display area.
- (3) 16 Path Motion manual trigger area.

3.3.1 Motion Parameters

Includes settings for absolute/relative motion type, position, speed, and acceleration/deceleration.

Once configured, the motor will begin motion upon trigger.

Note: The parameters on this page are identical to PR0 parameters. Modifying parameters here will also update PR0 settings.

3.3.2 Monitoring Parameters

Command Location: The target position sent from the driver to the motor.

Motor Position: The actual position feedback from the motor encoder.

Input IO: Displays the status of DI (Digital Input) signals.

Output IO: Displays the status of DO (Digital Output) signals.

Refresh: Updates the display of command position, motor position, input IO, and output IO to the latest status.

Auto Refresh: Continuously updates the above statuses in real time.

Note: Refresh cycle is approximately 1 second.

3.3.3 Manually Trigger Homing

Homing must be executed while the servo is enabled.

“Homing”: Executes the homing action based on previously configured homing parameters.

“Manual Homing”: Sets the current position as the value of P08.12. When executed, the driver will trigger the HOME-OK signal.

Note: Manual Homing is equivalent to assigning the current position as the origin.

3.3.4 Manually Trigger PR Path

Click the corresponding number button to trigger the motion path defined in PR mode.

3.3.5 Emergency Stop

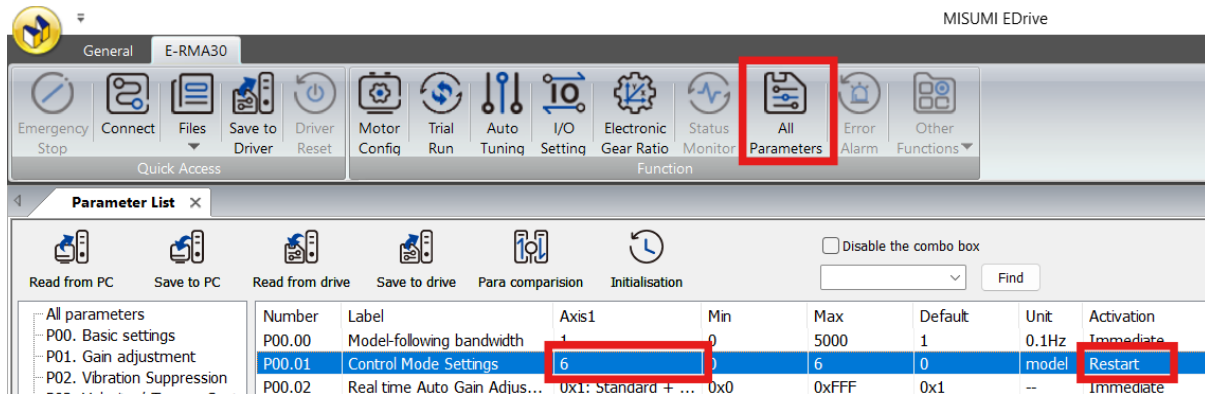
Immediately stops the currently executing motion.

4. Physical I/O Control Example

4.1 Enable the PR Mode

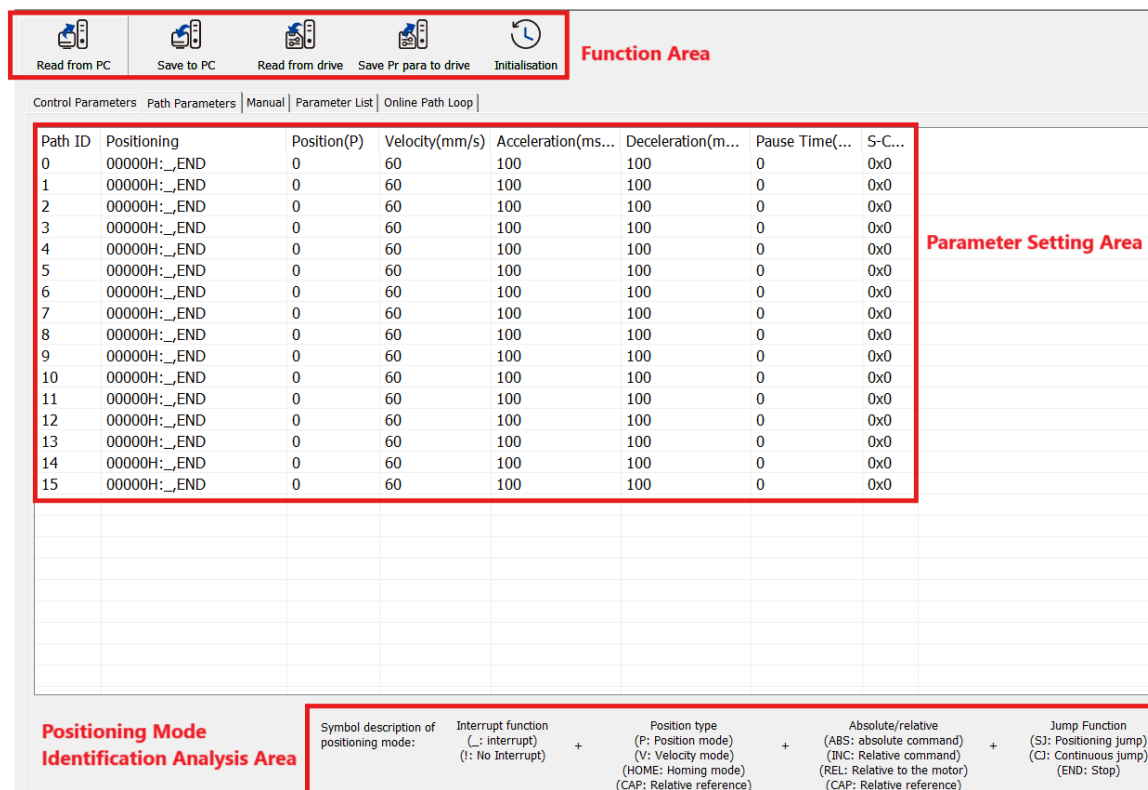
Set up servo drive parameter P00.01 = 6.

Note: Need to save to driver and reset driver to active the setting.



4.2 Path Parameters Setting

Path parameter settings page is shown as below. The PR0 parameters are mapped to P09.00 ~ P09.06. After modifying the parameters, click “Download and Save PR Parameters” to apply the changes. For detailed functionality of path parameters, refer to “2.2 PR Path Parameters”.



4.3 Homing Parameters Setting

PR Mode – Control Parameters Page is shown as below. For homing parameter explanations, refer to “2.3 Homing”.

The screenshot displays the 'Control Parameters' page in PR Mode. The 'Homing Config' section is highlighted with a red box. It contains the following parameters:

- P08.10 Homing mode:** Includes radio buttons for 'Homing Direction (Negative)' and 'Homing Direction (Positive)', a 'Homing Method' dropdown menu, and checkboxes for 'Moves to specified location after Homing (Pulse)' (linked to P08.14) and 'Z-signal Homing'.
- P08.12 Zero position (pulse):** A text input field.
- P08.15 High speed Homing (mm/s):** A text input field.
- P08.16 Low speed Homing (mm/s):** A text input field.
- P08.17 Homing acceleration (ms/(m/s)):** A text input field.
- P08.18 Homing deceleration (ms/(m/s)):** A text input field.

Other visible sections include 'Control Config' with 'CTRG P08.00' and various trigger options, and 'E-stop Config' with 'P08.22 Limit emergency stop' and 'P08.23 STOP emergency stop'.

4.4 Control Parameters

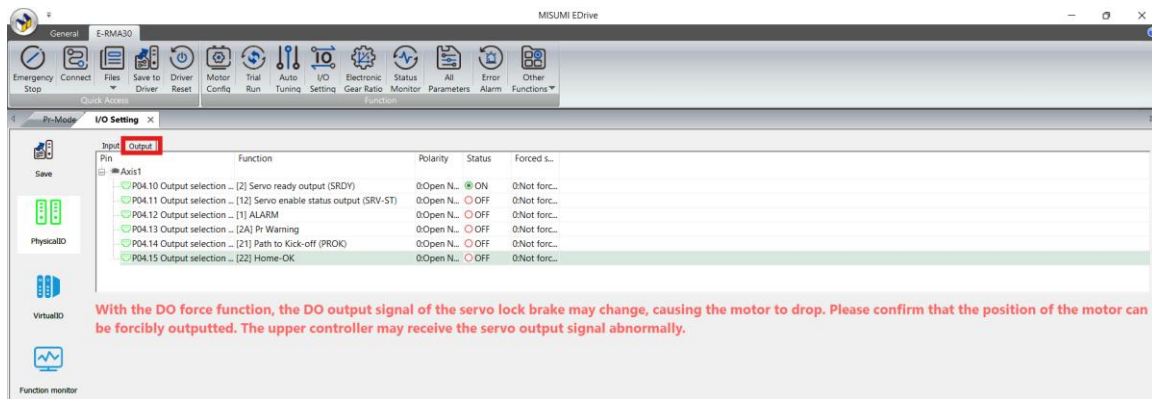
4.4.1 Physical I/O Signal Assignment

Configure DI (Digital Input) and DO (Digital Output) signals based on actual requirements. Refer to “2.4.1 Physical I/O Signal Assignment” for available functions.

The screenshot shows the 'I/O Setting' window in the MISUMI EDrive software. The 'Input' tab is selected, and a table lists the digital input assignments for Axis 1.

Input	Function	Polarity	Status	Forced s...
P04.00	Input selection DI. [25] Positive limit - PR only (PL)	0Open N...	0 OFF	0Not forc...
P04.01	Input selection DI. [26] Negative limit - PR only (NL)	0Open N...	0 OFF	0Not forc...
P04.02	Input selection DI. [27] Origin input - PR only (ORG)	0Open N...	0 OFF	0Not forc...
P04.03	Input selection DI. [22] Emergency stop trigger - PR only (STP)	0Open N...	0 OFF	0Not forc...
P04.04	Input selection DI. [4] Alarm Clear (A-CLR)	0Open N...	0 OFF	0Not forc...
P04.05	Input selection DI. [6] Servo On input*1 (SRV-ON)	0Open N...	0 OFF	0Not forc...
P04.06	Input selection DI. [28] Path 0 - PR only (ADD0)	0Open N...	0 OFF	0Not forc...
P04.07	Input selection DI. [29] Path 1 - PR only (ADD1)	0Open N...	0 OFF	0Not forc...
P04.08	Input selection DI. [2A] Path 2 - PR only (ADD2)	0Open N...	0 OFF	0Not forc...
P04.09	Input selection DI. [20] Path trigger - PR only (CTRG)	0Open N...	0 OFF	0Not forc...

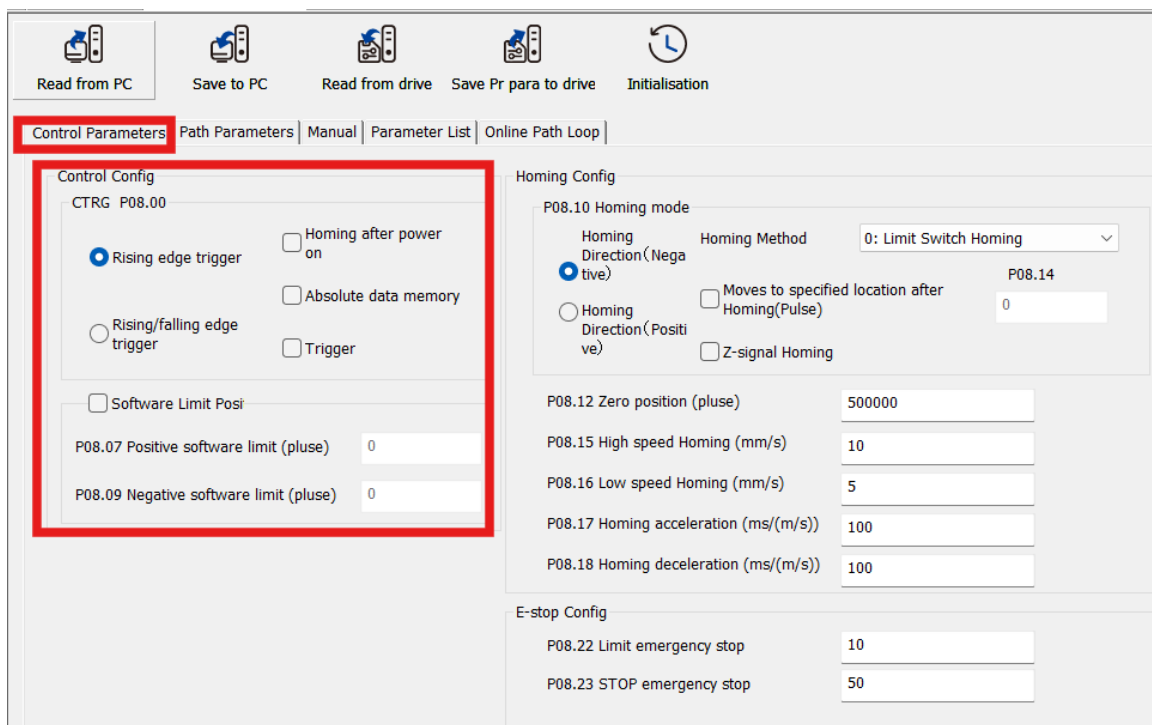
A warning message at the bottom states: "With the DI force function, the servo may generate continuous rotation action. Please confirm the safety of human body and the safety of running parts and accessories to avoid running collision!"



4.4.2 Physical I/O Trigger

In this case, CTRG is triggered by a rising edge signal on a physical DI input. CTRG must be assigned to a physical DI signal.

Set P08.26 = 0 to enable CTRG trigger mode. Use the interface shown below to select rising edge trigger.



4.5 Other Parameters Setting

For settings such as software limits, emergency stop, absolute position, and other signals, refer to “2.5 Other Parameters”.

4.6 Software Debugging

For debugging paths via software, refer to “3 EDrive Software Manual Debugging”.

4.7 Motion Triggering

Trigger Path 2 motion to move to the commanded position.

Path ID	Positioning	Position(P)	Velocity(mm/s)	Acceleration(ms...	Deceleration(m...	Pause Time(...	S-C...
0	00101H:_,P,ABS,END	10000	500	50	50	1000	0x0
1	00001H:_,P,ABS,END	20000	500	500	500	1000	0x0
2	00301H:_,P,ABS,END	30000	100	100	100	1500	0x0
3	00001H:_,P,ABS,END	0	10	500	500	500	0x0
4	00003H:_,HOME	0	60	100	100	0	0x0

The screenshot displays the EDrive software interface. The left window, titled 'Pr-Mode', shows various control parameters for motion operation, including P09.00 PR0 mode, P09.02 PR0 position (pulse), P09.03 PR0 speed (mm/s), P09.04 PR0 acceleration, P09.05 PR0 deceleration, and P09.06 PR0 pause time (ms). It also includes homing parameters (P08.43 Command location, P08.45 Motor position (pulse), P08.46 Input ID, P08.47 Output ID) and a trigger Pr-Mode section with buttons for 0 through 15. The right window, titled 'I/O Setting', shows a table of input and output pins for Axis 1. The table includes columns for Pin, Function, Polarity, Status, and Forced s... The status of various pins is shown as ON or OFF. A red warning message is visible at the bottom right of the I/O Setting window: 'With the DI force function, the servo may generate continuous rotation action. Please confirm the safety of human body and the safety of running parts and accessories to avoid running collision!'.

Once motion is complete, the PROK signal will be output to indicate path completion.

Input	Output	Pin	Function	Polarity	Status	Forced s...
		Axis1				
		P04.10 Output selection ...	[2] Servo ready output (SRDY)	0:Open N...	ON	0:Not forc...
		P04.11 Output selection ...	[12] Servo enable status output (SRV-ST)	0:Open N...	ON	0:Not forc...
		P04.12 Output selection ...	[1] ALARM	0:Open N...	OFF	0:Not forc...
		P04.13 Output selection ...	[2A] Pr Warning	0:Open N...	OFF	0:Not forc...
		P04.14 Output selection ...	[21] Path to Kick-off (PROK)	0:Open N...	ON	0:Not forc...
		P04.15 Output selection ...	[22] Home-OK	0:Open N...	OFF	0:Not forc...

5 RS485 Control Example

5.1 Enable PR Mode

Please refer to “4.1 Enable PR Mode”.

5.2 Path Parameter Setting

5.2.1 Set with EDrive Software

Please refer to “2.2 PR Path Parameters” and “4.2 Path Parameter Settings”.

5.2.2 Set with RS485

Please refer to “5.7 RS485 Examples”.

5.3 Homing Parameters Setting

Please refer to “2.3 Homing” and “4.3 Homing Parameters Setting”.

5.4 Physical I/O Signal Assignment

Please refer to “4.4.1 Physical I/O Signal Assignment”.

5.5 Other Parameters Setting

Please refer to “2.5 Other Parameter” and “4.5 Other Parameters Setting”.

5.6 EDrive Software Debugging

Please refer to “3 EDrive Software Manual Debugging”.

5.7 RS485 Examples

5.7.1 Motor Servo ON

Step 1: Assign the Enable Signal to a DI output pin.

Step 2: Enable the driver via physical DI wiring or by modifying the parameter to normally closed.

Example using DI-6 pin:

Set to Normally Open (Servo OFF): 01 06 04 0B 00 03 B9 39

Set to Normally Closed (Servo ON): 01 06 04 0B 00 83 B8 99

5.7.2 PR0 Absolute Motion

PR0 Path Setup:

Absolute Position

Command: 01 06 62 00 00 01 57 B2

Travel Distance: 200000 pulses

Command 1: 01 06 62 01 00 03 87 B3

Command 2: 01 06 62 02 0D 40 32 D2

Speed: 600 mm/s

Command: 01 06 62 03 02 58 66 E6

Acceleration: 50 ms/(1000 mm/s)

Command: 01 06 62 04 00 32 56 66

Deceleration: 50 ms/(1000 mm/s)

Command: 01 06 62 05 00 32 07 A6

Trigger PR0 Motion

Command: 01 06 60 02 00 10 37 C6

No.	485 communication data frame	Description
1	01 06 62 00 00 01 57 B2	Set PR0 mode as absolute position
2	01 06 62 01 00 03 87 B3	Set PR0 position high bit
3	01 06 62 02 0D 40 32 D2	Set PR0 position low bit
4	01 06 62 03 02 58 66 E6	Set PR0 velocity
5	01 06 62 04 00 32 56 66	Set PR0 acceleration
6	01 06 62 05 00 32 07 A6	Set PR0 deceleration
7	01 06 60 02 00 10 37 C6	Trigger PR0 motion
8	01 06 60 02 00 40 37 FA	Send Emergency stop datagram when required

5.7.2 PR0 Relevant Motion

Set PR0 to travel relative distance = 10000 (10000 pulse/rev).

No.	485 communication data frame	Description
1	01 06 62 00 00 41 56 42	Set PR0 mode as relative position
2	01 06 62 01 00 00 C7 B2	Set PR0 position high bit
3	01 06 62 02 27 10 2D 8E	Set PR0 position low bit
4	01 06 62 03 02 58 66 E6	Set PR0 velocity
5	01 06 62 04 00 32 56 66	Set PR0 acceleration
6	01 06 62 05 00 32 07 A6	Set PR0 deceleration
7	01 06 60 02 00 10 37 C6	Trigger PR0 motion
8	01 06 60 02 00 40 37 FA	Send Emergency stop datagram when required

5.7.3 PR0 Velocity Motion

Set PR0 as velocity mode with velocity = 600mm/s

No.	485 communication data frame	Description
1	01 06 62 00 00 02 17 B3	Set PR0 as velocity mode
2	01 06 62 03 02 58 66 E8	Set PR0 velocity
3	01 06 62 04 00 32 56 66	Set PR0 acceleration
4	01 06 62 05 00 32 07 A6	Set PR0 deceleration
5	01 06 60 02 00 10 37 C6	Trigger PR0 motion
6	01 06 60 02 00 40 37 FA	Send Emergency stop datagram when required

5.7.4 PR1 Absolute Motion

No.	485 communication data frame	Description
1	01 06 62 08 00 01 D6 70	Set PR0 mode as absolute position
2	01 06 62 09 FF FC 07 C1	Set PR0 position high bit
3	01 06 62 0A F2 C0 F3 40	Set PR0 position low bit
4	01 06 62 0B 02 58 E7 2A	Set PR0 velocity
5	01 06 62 0C 00 32 D7 A4	Set PR0 acceleration
6	01 06 62 0D 00 32 86 64	Set PR0 deceleration
7	01 06 60 02 00 11 F6 06	Trigger PR0 motion
8	01 06 60 02 00 40 37 FA	Send Emergency stop datagram when required

5.7.5 JOG motion

Assign PJOG and NJOG functions to DI terminals and control their motion by modifying the normally open/closed status, similar to the enable signal method.

Step 1: Assign PJOG / NJOG functions to DI terminals.

Input	Output			
Pin	Function	Polarity	Status	Forced s...
Axis1				
P04.00 Input selection DI...	[25] Positive limit - PR only (PL)	0:Open N...	OFF	0:Not forc...
P04.01 Input selection DI...	[26] Negative limit - PR only (NL)	0:Open N...	OFF	0:Not forc...
P04.02 Input selection DI...	[27] Origin input--PR only (ORG)	0:Open N...	OFF	0:Not forc...
P04.03 Input selection DI...	[22] Emergency stop trigger--PR only (STP)	0:Open N...	OFF	0:Not forc...
P04.04 Input selection DI5 [4]	Alarm Clear (A-CLR)	0:Open N...	OFF	0:Not forc...
P04.05 Input selection DI6 [3]	Servo On input*1 (SRV-ON)	0:Open N...	OFF	0:Not forc...
P04.06 Input selection DI7 [23]	Positive jog -- PR only (PJOG)	0:Open N...	OFF	0:Not forc...
P04.07 Input selection DI8 [24]	Reverse JOG -- PR only (NJOG)	0:Open N...	OFF	0:Not forc...
P04.08 Input selection DI9 [2A]	Path 2--PR only (ADD2)	0:Open N...	OFF	0:Not forc...
P04.09 Input selection DI...	[20] Path trigger -- PR only (CTRG)	0:Open N...	OFF	0:Not forc...

Step 2: Modify the open/closed status using Modbus commands. With above setting as example.

PJOG Normally Open (Stop PJOG)

Command: 01 06 04 0D 00 23 58 E0

PJOG Normally Closed (Start PJOG)

Command: 01 06 04 0D 00 A3 59 40

Parameter table corresponding to DI pin:

CN1 PIN	Signal	Parameter	CN1 PIN	Signal	Parameter
8	DI1	P04.00	29	DI6	P04.05
9	DI2	P04.01	30	DI7	P04.06
26	DI3	P04.02	31	DI8	P04.07
27	DI4	P04.03	32	DI9	P04.08
28	DI5	P04.04	33	DI10	P04.09

DI input signal can be assigned functions:

Signal	Sign	Setting value	
		NO	NC
Invalid	—	0	-
Positive limit switch	POT	1	81
Negative limit switch	NOT	2	82
Servo enabled	SRV-ON	3	83
Clear Alarm	A-CLR	4	-
Control mode switching	C-MODE	5	85
Gain switching	GAIN	6	86
Clear deviation count	CL	7	-
Command pulse prohibited	INH	8	88
Torque limit switching	TL-SEL	9	89
Command frequency divider/multiplier switching	DIV1	C	8C
Internal command velocity 1	INTSPD1	E	8E
Internal command velocity 2	INTSPD2	F	8F
Internal command velocity 3	INTSPD3	10	90
Zero speed clamp	ZEROSPD	11	91
Velocity command sign	VC-SIGN	12	92
Velocity command sign 2	VC-SIGN2	4A	CA
Torque command sign	TC-SIGN	13	93
Emergency stop	E-STOP	14	94
Inertia ratio switching input	J-SEL	15	95
Gantry disable	GTRY	17	97

Inputs related to PR mode:

Signal	Sign	Setting value	
		NO	NC
Trigger command	CTRG	20	A0
Home	HOME	21	A1
Forced stop	STP	22	A2
Positive JOG	PJOG	23	A3
Negative JOG	NJOG	24	A4
Positive limit	PL	25	A5
Negative limit	NL	26	A6
Origin	ORG	27	A7
Path address 0	ADD0	28	A8
Path address 1	ADD1	29	A9
Path address 2	ADD2	2A	AA
Path address 3	ADD3	2B	AB

5.7.6 Homing

No.	485 communication data frame	Description
1	01 06 60 0A 00 00 B7 C8	Homing Method
2	01 06 60 0F 00 64 A6 22	High speed for homing
3	01 06 60 10 00 1E 16 07	Low speed for homing
4	01 06 62 05 00 32 07 A6	Set PR0 deceleration
5	01 06 60 02 00 20 37 D2	Trigger Homing process
6	01 06 60 02 00 40 37 FA	Send Emergency stop datagram when required