

1、 Set the servo drive control mode:

Parameter		Meaning	Effective
Pn000	n.□□C□	Internal position mode, control the positions of the device through the program table	Restart

2、 The coordinate mode and maximum program table value (Pn630) for program table control (internal position mode)

Parameter		Meaning	Effective
Pn630.0	n.□□□0	Set coordinates in linear coordinate mode	Restart
	n.□□□1	Set the coordinates in the rotation coordinate mode. Set the movement method in the shortest path. (Servo turret)	
	n.□□□2	Set the coordinates in the rotation coordinate mode. Always set the movement method to forward rotation.	
	n.□□□3	Set the coordinates in the rotation coordinate mode. Always set the movement method to reverse.	
Pn630.1	n.□□X□	Automatically allocate the length of the program table (Note: the parameter change is only valid in the rotary coordinate mode)	

In the rotary coordinate mode, if Pn630.1 is set to be greater than zero, the servo will automatically allocate the position of the program table. This value indicates the largest program step (tool number) supported. The program step is increased in sequence from 0, and the number cannot be skipped.

3、 Set electrical gear ratio parameters (Pn20E and Pn210)

Pn20E	Electronic gear ratio (numerator)				Position
	Setting range	Setting Unit	Factory setting	Effective	Category
	1~1073741824	1	1	Restart	Setup
Pn210	Electronic gear ratio (denominator)				Speed Position Torque
	Setting range	Setting Unit	Factory setting	Effective	Category
	1~1073741824	1	1	Restart	Setup

4、 Set the input and output port distribution parameters of the servo turret

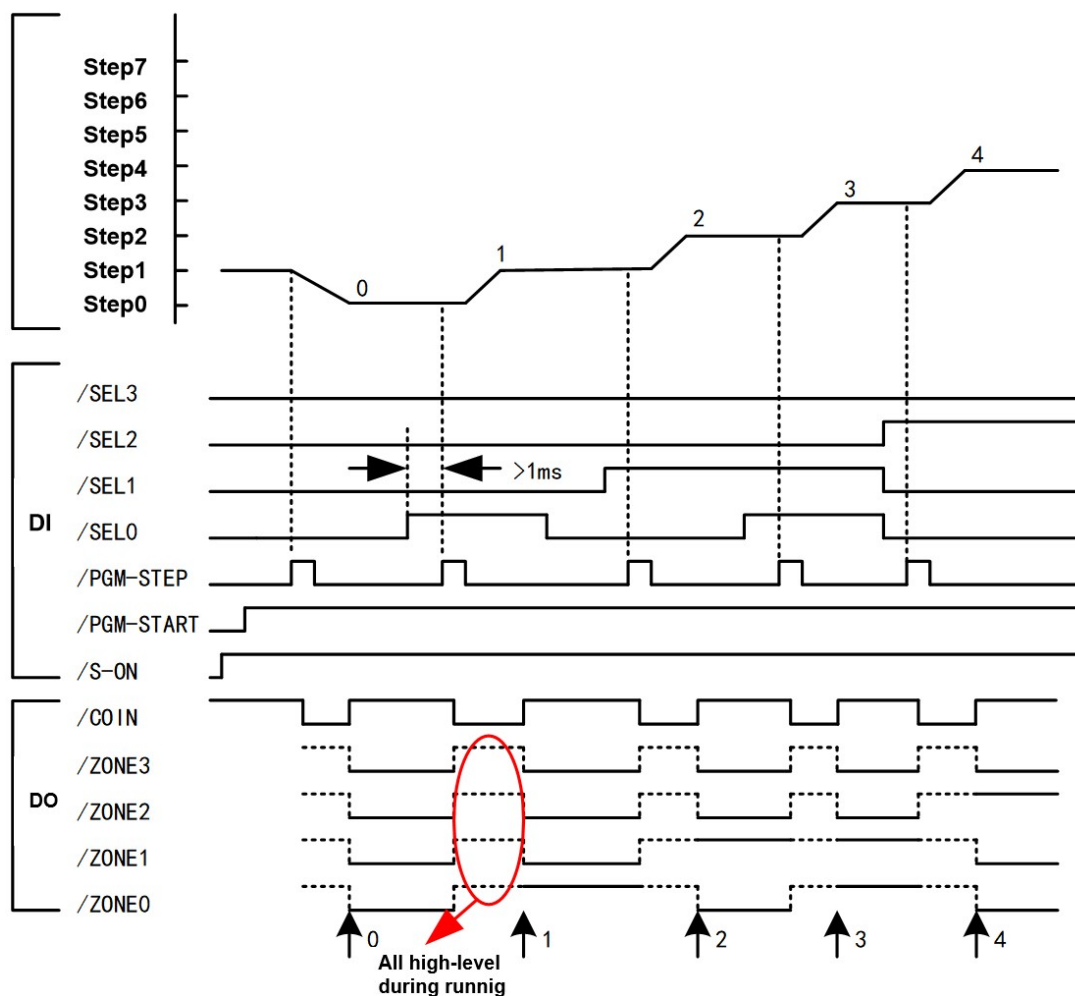
■New added input signal

Input signals	Meaning	Parameters
/HOME-START	Home start input, the rising edge is valid, used to set the coordinate origin (No.0 tool) position	Pn640 = n. x□□□
/PGM-START	Program table Start/Stop input	Pn640 = n.□□□x
/PGM-STEP	Program table change step input, the rising edge is valid (sample input port/SEL0-3 at the rising edge)	Pn640 = n.□□x□
/SEL0	Step selection input 0	Pn641 = n.□□□x
/SEL1	Step selection input 1	Pn641 = n.□□x□
/SEL2	Step selection input 2	Pn641 = n.□x□□
/SEL3	Step selection input 3	Pn641 = n.x□□□

The DI/DO ports in this example are allocated as follows:

	DI(Pins)	Allocated functions
DI	IN0 (CN1-14)	Servo ON /SON
	IN1 (CN1-15)	Program table Start-stop /PGM-START
	IN2 (CN1-16)	Program table change step /PGM-STEP
	IN3 (CN1-17)	Home start /HOME-START
	IN4 (CN1-39)	Step selection input 0 /SEL0
	IN5 (CN1-40)	Step selection input 1 /SEL1
	IN6 (CN1-41)	Step selection input 2 /SEL2
	IN7 (CN1-42)	Step selection input 3 /SEL3

## Program step (timing diagram of tool number selection)



## 5、 Program step related parameters

Name	Range	Unit	Program steps (save after power-off, take effect after restart)							
			Step 00	Step 01	Step 02	Step 03	Step 04	Step 05	Step 06	Step 07
Mode selection	0x0000~0x0001	—	Pn700	Pn708	Pn710	Pn718	Pn720	Pn728	Pn730	Pn738
Target position	-1073741823~1073741823	1 command pulse	Pn701	Pn709	Pn711	Pn719	Pn721	Pn729	Pn731	Pn739
Positioning speed	1~65535	100 command pulse/s	Pn703	Pn70B	Pn713	Pn71B	Pn723	Pn72B	Pn733	Pn73B
Change step condition	0x0000~0x0005	—	Pn704	Pn70C	Pn714	Pn71C	Pn724	Pn72C	Pn734	Pn73C
Waiting time	0~65535	1ms	Pn705	Pn70D	Pn715	Pn71D	Pn725	Pn72D	Pn735	Pn73D
Number of executions	1~65535	—	Pn706	Pn70E	Pn716	Pn71E	Pn726	Pn72E	Pn736	Pn73E
Next step No.	-1~15	—	Pn707	Pn70F	Pn717	Pn71F	Pn727	Pn72F	Pn737	Pn73F

Name	Range	Unit	Program steps (save after power-off, take effect after restart)							
			Step 08	Step 09	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15
Mode selection	0x0000~0x0001	—	Pn740	Pn748	Pn750	Pn758	Pn760	Pn768	Pn770	Pn778
Target position	-1073741823~1073741823	1 command pulse	Pn741	Pn749	Pn751	Pn759	Pn761	Pn769	Pn771	Pn779
Positioning speed	1~65535	100 command pulse/s	Pn743	Pn74B	Pn753	Pn75B	Pn763	Pn76B	Pn773	Pn77B
Change step condition	0x0000~0x0005	—	Pn744	Pn74C	Pn754	Pn75C	Pn764	Pn76C	Pn774	Pn77C
Waiting time	0~65535	1ms	Pn745	Pn74D	Pn755	Pn75D	Pn765	Pn76D	Pn775	Pn77D
Number of executions	1~65535	—	Pn746	Pn74E	Pn756	Pn75E	Pn766	Pn76E	Pn776	Pn77E
Next step No.	-1~15		Pn747	Pn74F	Pn757	Pn75F	Pn767	Pn76F	Pn777	Pn77F

Name	Range	Unit	Program steps (Not save after power-off, take effect immediately)							
			Step 00	Step 01	Step 02	Step 03	Step 04	Step 05	Step 06	Step 07
Mode selection	0x0000~0x0001	—	Pn800	Pn808	Pn810	Pn818	Pn820	Pn828	Pn830	Pn838
Target position	-1073741823~1073741823	1 command pulse	Pn801	Pn809	Pn811	Pn819	Pn821	Pn829	Pn831	Pn839
Positioning speed	1~65535	100 command pulse/s	Pn803	Pn80B	Pn813	Pn81B	Pn823	Pn82B	Pn833	Pn83B
Change step condition	0x0000~0x0005	—	Pn804	Pn80C	Pn814	Pn81C	Pn824	Pn82C	Pn834	Pn83C
Waiting time	0~65535	1ms	Pn805	Pn80D	Pn815	Pn81D	Pn825	Pn82D	Pn835	Pn83D
Number of executions	1~65535	—	Pn806	Pn80E	Pn816	Pn81E	Pn826	Pn82E	Pn836	Pn83E
Next step No.	-1~15		Pn807	Pn80F	Pn817	Pn81F	Pn827	Pn82F	Pn837	Pn83F

Name	Range	Unit	Program steps (Not save after power-off, take effect immediately)							
			Step 08	Step 09	Step 10	Step 11	Step 12	Step 13	Step 14	Step 15
Mode selection	0x0000~0x0001	—	Pn840	Pn848	Pn850	Pn858	Pn860	Pn868	Pn870	Pn878
Target position	-1073741823~1073741823	1 command pulse	Pn841	Pn849	Pn851	Pn859	Pn861	Pn869	Pn871	Pn879
Positioning speed	1~65535	100 command pulse/s	Pn843	Pn84B	Pn853	Pn85B	Pn863	Pn86B	Pn873	Pn87B
Change step condition	0x0000~0x0005	—	Pn844	Pn84C	Pn854	Pn85C	Pn864	Pn86C	Pn874	Pn87C
Waiting time	0~65535	1ms	Pn845	Pn84D	Pn855	Pn85D	Pn865	Pn86D	Pn875	Pn87D
Number of executions	1~65535	—	Pn846	Pn84E	Pn856	Pn85E	Pn866	Pn86E	Pn876	Pn87E
Next step No.	-1~15		Pn847	Pn84F	Pn857	Pn85F	Pn867	Pn86F	Pn877	Pn87F

Positioning mode selection parameter Pn700:  
Pn700, bit0(Hex0)=0, Absolute position; Pn700, bit0(Hex0)=1, Relative position.  
Bit1-3 is reserved

更改参数

Pn700 程序步0模式选择

Hex0 相对/绝对位置选择

1:相对位置  
0:绝对位置  
1:相对位置

0:保留参数

Hex2 保留参数

0:保留参数

Hex3 保留参数

0:保留参数

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应用 退出

Change step condition parameter Pn704:

Bit0=0, Step end when the positioning completion output signal (/COIN) turns ON

Bit0=1, Step end when entering the positioning approach range (/NEAR)

Bit0=2, Step end when the position command transmission ends (/DEN)

Bit0=3, After positioning completion output signal (/COIN) turns ON, n[ms]delay

Bit0=4, After positioning approach range output signal (/NEAR) turns ON, n[ms]delay

Bit0=5, After position command transmission ends output signal (/DEN) turns ON, n[ms]delay

Bit1-3 is reserved

更改参数

Pn704 程序步0结束条件

Hex0 换步条件

0:定位完成输出(/COIN)信号变为ON(闭合)时结束  
0:定位完成输出(/COIN)信号变为ON(闭合)时结束  
1:进入定位接近(/NEAR)范围时结束  
2:位置指令传输结束(DEN)时结束  
3:定位完成输出(/COIN)信号变为ON(闭合)后n [ms]待机  
4:定位接近(/NEAR)输出信号变为ON(闭合)后n [ms]待机  
5:位置指令传输完成(DEN)后n [ms]待机。

Hex2 保留参数

0:保留参数

Hex3 保留参数

0:保留参数

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应用 退出

<input type="checkbox"/> Pn630	程序表模式选择		0000~01F3	0000H
Hex0	程序步模式坐标设置和移动方法	-	-	0:在直线型中设定坐标
Hex1	自动分配程序步（旋转坐标下有效）	-	-	0:关闭自动分配程序步
Hex2	保留参数	-	-	0:保留参数
Hex3	保留参数	-	-	0:保留参数
<input type="checkbox"/> Pn631	直线加速参数	10000指令单位/...	1~65535	100
<input type="checkbox"/> Pn632	直线减速参数	10000指令单位/...	1~65535	100
<input type="checkbox"/> Pn633	回零模式选择		0000~000F	0000H
Hex0	回零方法	-	-	0:将当前位置设置成零点
Hex1	保留参数	-	-	0:保留参数
Hex2	保留参数	-	-	0:保留参数
Hex3	保留参数	-	-	0:保留参数
<input type="checkbox"/> Pn634	找参考开关速度	100指令单位/s	1~65535	200
<input type="checkbox"/> Pn635	离开参考开关速度	100指令单位/s	1~65535	100
<input type="checkbox"/> Pn636	ZONE信号范围	1指令单位	1~65535	100
<input type="checkbox"/> Pn640	输入信号选择7		0000~9999	8888H
Hex0	程序步启动输入(/PGM-START)信号...	-	-	8:将信号一直固定为“无效”。
Hex1	程序步换步输入(/PGM-STEP)信号...	-	-	8:将信号一直固定为“无效”。
Hex2	保留	-	-	8:将信号一直固定为“无效”。
Hex3	回零启动输入(/Home-START)信号...	-	-	8:将信号一直固定为“无效”。
<input type="checkbox"/> Pn641	输入信号选择8		0000~9999	8888H
Hex0	程序步选择输入0(/SEL0)信号的分配	-	-	8:将信号一直固定为“无效”。
Hex1	程序步选择输入1(/SEL1)信号的分配	-	-	8:将信号一直固定为“无效”。
Hex2	程序步选择输入2(/SEL2)信号的分配	-	-	8:将信号一直固定为“无效”。
Hex3	程序步选择输入3(/SEL3)信号的分配	-	-	8:将信号一直固定为“无效”。

更改参数

Pn633 回零模式选择

Hex0 回零方法

0:将当前位置设置成零点

0:将当前位置设置成零点

1:负方向寻Not上升沿后,再正方向找Index

2:正方向寻Pot上升沿后,再反方向找Index

3:正方向寻Dec上升沿后,再反方向找Index

4:正方向寻Dec上升沿后,再正方向找Index

5:负方向寻Dec下降沿后,再正方向找Index

6:负方向寻Dec上升沿后,再负方向找Index

7:正方向寻Dec上升沿后,再负方向找Index,遇Pot反向

8:正方向寻Dec上升沿后,再正方向找Index,遇Pot反向

9:正方向寻Dec下降沿后,再反方向找Index,遇Pot反向

A:正方向寻Dec下降沿后,再正方向找Index,遇Pot反向

B:负方向寻Dec上升沿后,再正方向找Index,遇Not反向

C:负方向寻Dec上升沿后,再负方向找Index,遇Not反向

D:负方向寻Dec下降沿后,再正方向找Index,遇Not反向

E:负方向寻Dec下降沿后,再负方向找Index,遇Not反向

F:保留

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应用 退出

Examples of MODBUS communication internal position control related settings:

1、 Set the following parameters:

PA000 = n.00C0 Set control Mode

PA50A = n.8801 Set DI allocation: forward rotation prohibition is invalid; S-ON is allocated to IN0

PA50B = n.8888 Set DI allocation: reverse rotation prohibition is invalid;

PA640 = n.2819 Set DI allocation: The home start/stop is allocated to the IN2 input port; the step change start is allocated to the IN1 input port; The program step operation is always valid;

PA641 = n.6543 Set DI allocation: : program step selection SEL3-0 assigned to IN5-3 input port

PA633 = n.0001 Set the homing method

2、 Restart servo

3、 When using MODBUS to modify the program step parameters, it is recommended to modify the Pn800 area, and it will take effect immediately without saving after power off.

4、 Modify the value of 0x1517-0x1518 address through MODBUS, and realize the signal validity by inverting the input port

0x1517:bit3-0 = 0 means not to reverse IN0; = 1 means to reverse IN0

0x1517:bit7-4 = 0 means not to reverse IN1; = 1 means to reverse IN1

0x1517:bit11-8 = 0 means not to reverse IN2; = 1 means to reverse IN2

0x1517:bit15-12 = 0 means not to reverse IN3; = 1 means to reverse IN3

0x1518:bit3-0 = 0 means not to reverse IN4; = 1 means to reverse IN4

0x1518:bit7-4 = 0 means not to reverse IN5; = 1 means to reverse IN5

0x1518:bit11-8 = 0 means not to reverse IN6; = 1 means to reverse IN6

0x1518:bit15-12 = 0 means not to reverse IN7; = 1 means to reverse IN7