QC300

电容调高器用户手册

V1.0	2020/12/14		LT			
V1.1	2021/11/23	3.3 V1.3	WQZ	2021/11/23		
V1.2	2022/3/1		LT	2022/3/1		
V1.3	2022/6/16		LT	2022/6/16		
V2.0	2022/7/20		ZCF	2022/7/27		
V2.0	2023/3/1		ZCF	2023/3/1		

V2.1

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QC300 ⑈ ℗

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QC300

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1.2

	QC300
	8 ˆ 24V/0V˜
	8 ˆ 24V/0V˜
	2 ˆ ˜
	(3Pin 5.08mm)
	24VDC±10
	200mA
DA №	16 β
	0.01mm
±	20000mm/s2(2G)

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	EtherCAT	
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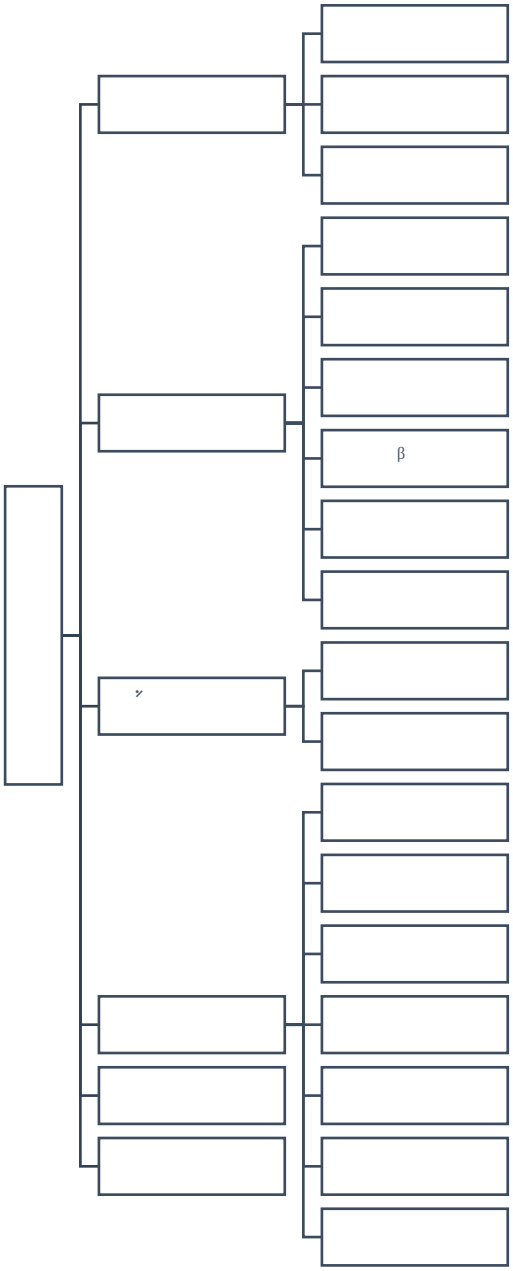
ENT	ENT	à
FOL		ѽ ´ ѽ Â
SHUT		ѽ ´ ѽ ,, Â
FAST		± ^ ~
SLOW		¥ ^ ~
+0.1	+	± 0.1mm
-0.1	-	¥ 0.1mm

MID		β β
ORG		
F1	F1	β Й ҕ ґ β ч ˆ Ь ~
F4	F4	

2.2



2.3 h

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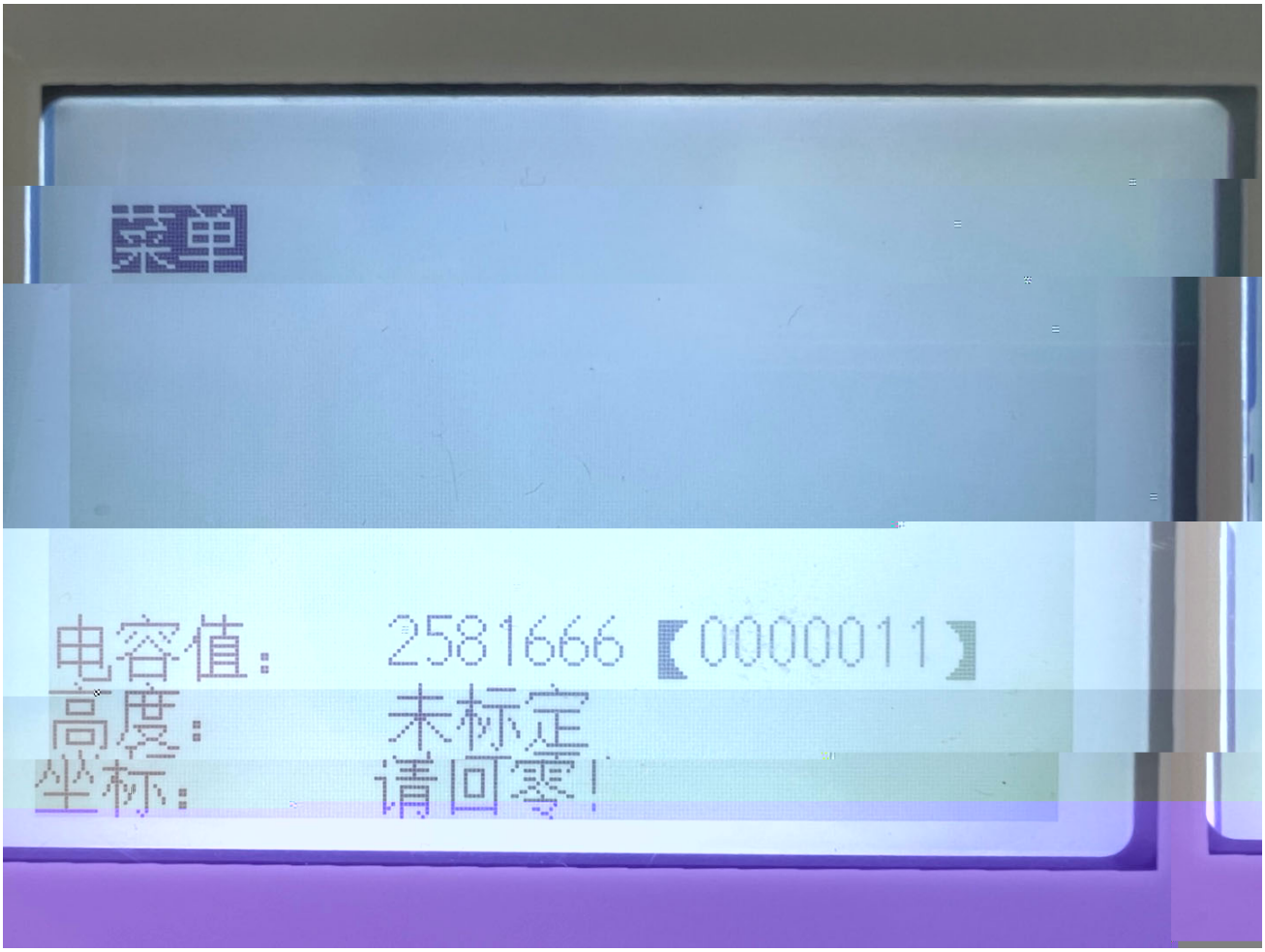

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2.4.1

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2.4.4

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2.4.5

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2.4.6

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2.4.7

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2.5

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2.5.1

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Ь β ך PWM ֆ -¨ Â

2. ՛ Й ֆ Ь h

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3. ֈ *՛ Ƶ ֈ Â

4. ֈ *՛ -¨ β ֆ β

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5. ֈ *՛ Ƶ ↕ ֆ ץ

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6. ֈ *՛ Ƶ Â

7. Z *՛ β Â

8. *՛ Ƶ Â

9. *՛ ך ץ IO -¨ Â

10. ՛ Ⓟ ՛ ך ץ

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11. ՛ Ƶ Й Â ׳ Й

״ Ⓟ à Ⓟ ׳

=25 Й =25 Ⓟ ׳ =60 Й

=30 Â

12. *՛ QC300 ״ ч - ״

ך ч 0 Ƶ

Ь Â ч 0 ״ Ь Â

β Ƶ β -¨ 24V Â ՛ 5mm

Й՛ ׳ - Й - ’

Ь 5mm Й՛ Й - Â Ƨ QC300 Й

PWM ֆ PWM ך ץ Â MID β

PWM Ƶ Â PWM ч

400Hz ֿ Â

13. AO1* AO1 Â

14. MID β * β MID ч Â

β MID ч MID 1 ѽ

Ƶ MID 0 Â

2.5.2

1. * ѽ Â β mm/s Â

2. * ѽ ϒ ѽ

Ķ ‖ Â β mm/s2

3. ѽ Â β mm/s Â

4. ѽ β mm/s^2 Â

2.5.3 *

1. ϒ ϒ Â ┐

h l’ ENT Ł ℗ Â

2. Â

3. Â

4. β Ƶ Z β Â

2.5.4 β *

1. β β^ ~ Ƶ

ч l’ Ł Â

2. Z Â

2.5.5

1. ‘ QC300 ^ ;‘;‘; ~ Â ‰ β

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QC300 ľ Ŀ Â

2. ‘ Â

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3. ‘ ‰

;‘;‘; -¨ QC300 ľ Ŀ Â **Ь ┐ ч**

0 Â

4. β ‘ β ‰ Ƶ Ь Â

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˭ ;‘;‘; 1 ↕ 1 ‰

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2.5.6

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Ƙ Z Â

3. ‘ ;‘;‘; Â

4. ‘ Ь

^ 375r/min/V 1 ˭ 375r/min 8V 3000r/min

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5. ‘ h -¨ Â Й

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		1	2

	26	
	B2	

6. ;‘;; β *‘ ;‘;; β Â
7. Й β *‘ Й β Â
8. *‘ Â

2.6 ‘

1. ‘ ↕ Â
2. IO ‘ Ƶ IO Ƶ Â

2.7

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1. ‘ Â
2. ‘ Ⓟ Â
3. ‘ QC300 Â
4. ‘

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‘ Ь ѽ Z ㄱ

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Ь ^ 20mV ;‘;; ~ Â

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7. ‘ ɾ U Â

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QC300 à à ┐ Ⓟ Â

┐ X Ⓟ Â X ↕ ¨ X Â

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QC300 ┐ 100 Â

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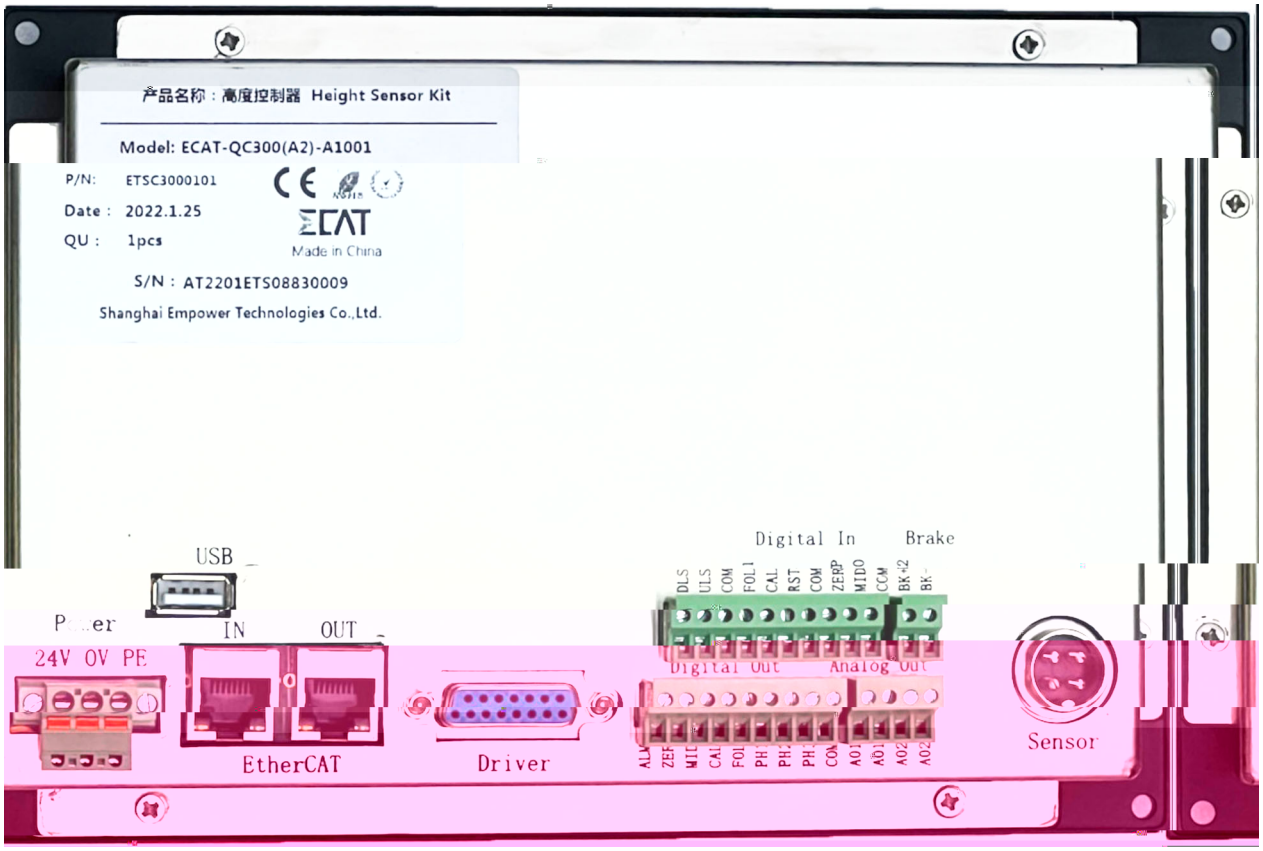
3.2



3-2 QC300 Χ ˆ V2.0 ˜

3-3 Χ 9 Â

ˆ Power˜	24VDC
USB	U
(Driver)	Â
(Digital Out)	8 COM
(Digital In)	8 ὶ 2 COM1 6 COM2
(Sensor)	ˆ TTA˜ Â
EtherCAT	EtherCAT ι IN OUT Â
(Brake)	
(Analog Out)	

1	OUT_Servo_DA
2	Servo_OS
3	E1_A_P A
4	E1_B_P B
5	E1_C_P C
6	Servo_SON
7	Servo_CLR
8	VDD_24V
9	AGND
10	PGND
11	E1_A_N A
12	E1_B_N B
13	E1_C_N C
14	Servo_ALM
15	PGND

24V 0V

ALM		
ZERO		
MID	/PWM	PWM
CAL		
FOL		
NC1		
NC2		
NC3		

DLS		
ULS		
FOL		24V 0V

CAL		Â 0V1 ч 24V Â
RST	β	Â 0V1 ч 24V β Â
COMP		Â Ø ч 24V Â
ZERO		Â 0V1 ч 24V ѽ Â
MID	/	Â 0V1 ч 24V ѽ ѓ Â β ч ↕ Â

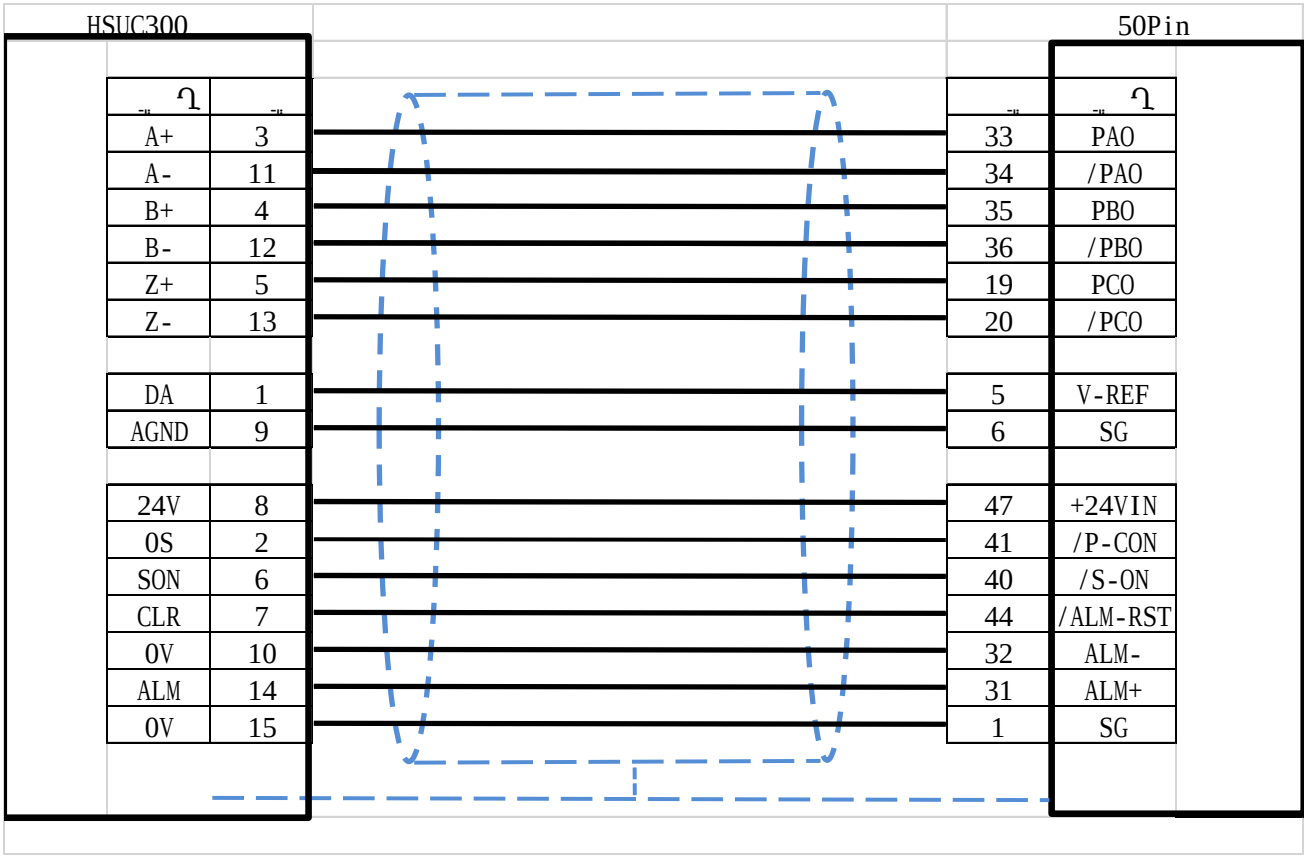
DLS ULS COM ì COM № Й

β COMx 24V Â

DLS	ULS	COM1	FOL	CAL	RST	COMP	ZERO	MID	COM2

3.3

3.3.1



-V Й

Pn000	00A0	β
Pn00B		0100

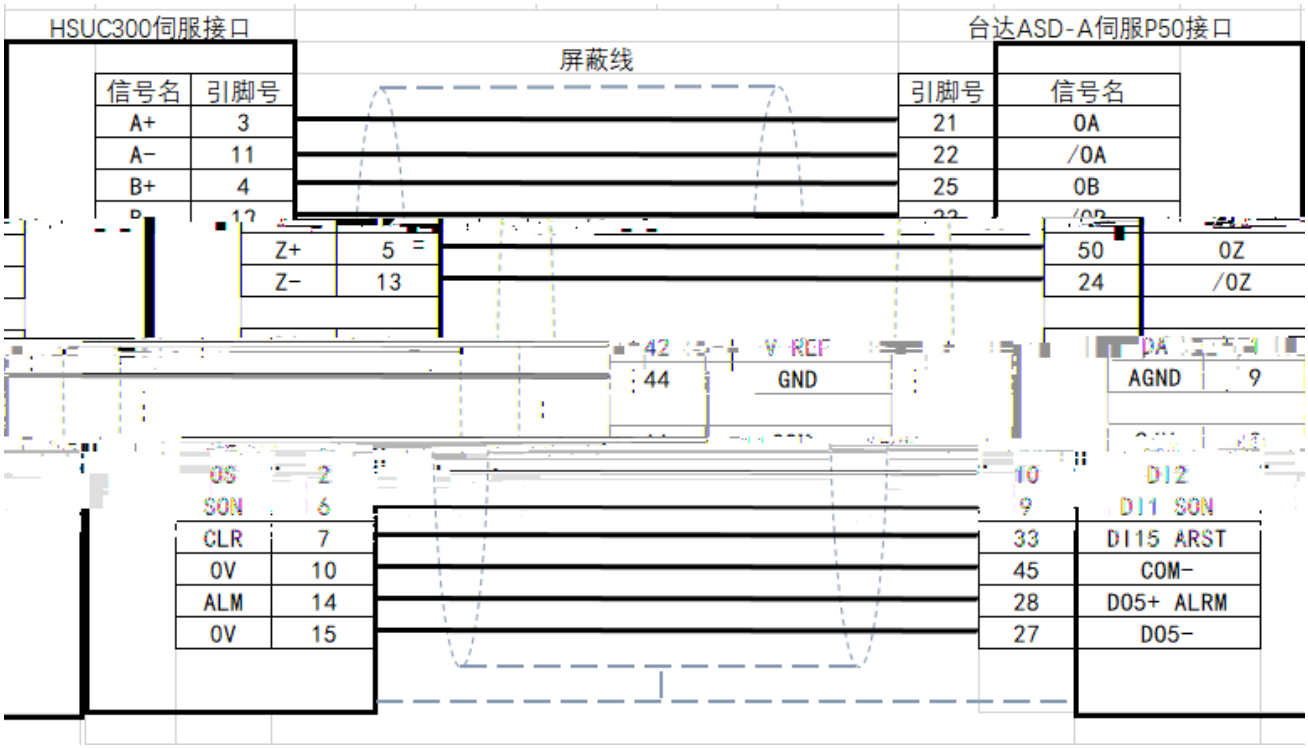
Pn212	2500	‖ QC300 ‖ 10000
Pn300	6.00	QC300 500r/min/V
Pn50A	8100	¬
Pn50B	6548	¬

3.3.2 Й

Й A5/A6 Й ‘

Pr001	1	ч
Pr002	3	ч
Pr012	0	ľ Ł ч 1

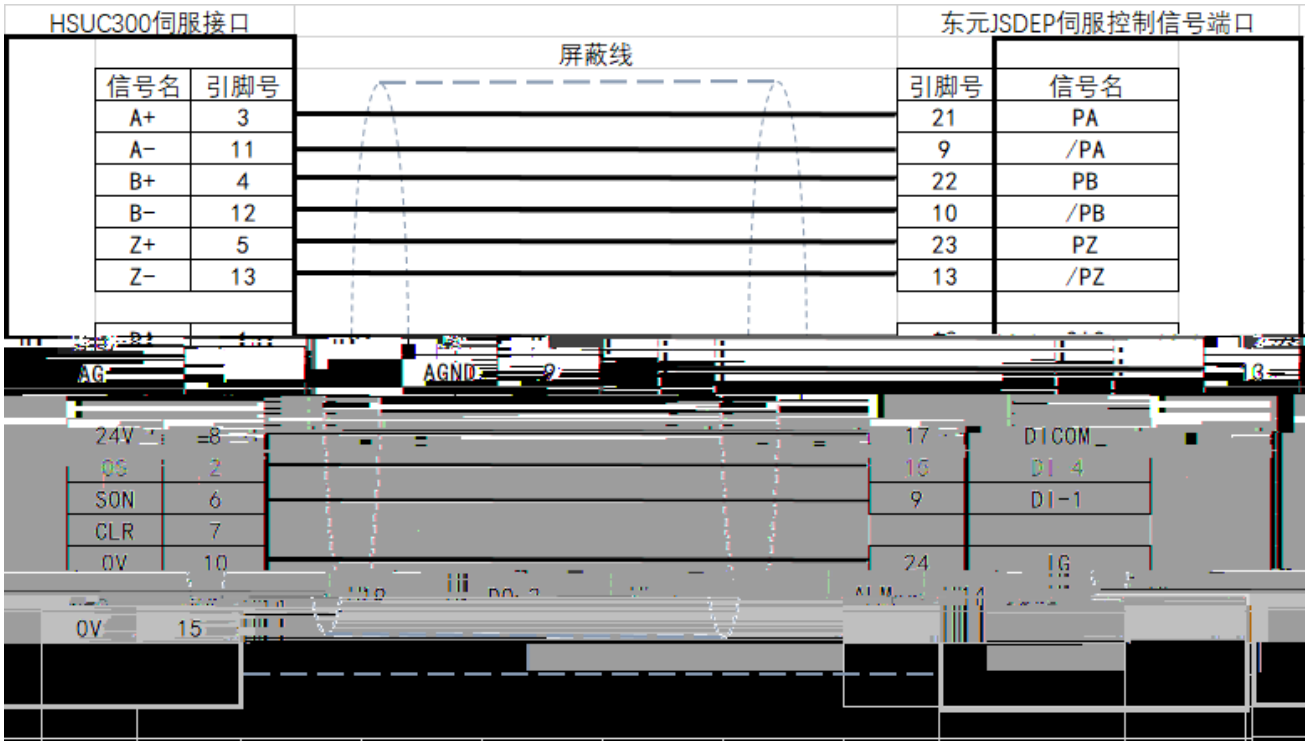
3.3.3 ╕



╕ ASD-A Й ‘

P1-01	0002	ч
P1-38	2000	β ч
P1-40	5000	500r/v/min
P2-10	101	DI1 ч SON ч
P2-11	105	DI2 ч CLAMP β ч
P2-12	114	Ъ ч
P2-13	115	Ъ ч
P2-14	102	DI5 ч ARST ’ ч
P2-22	007	DO5 ч ALRM ’ ч

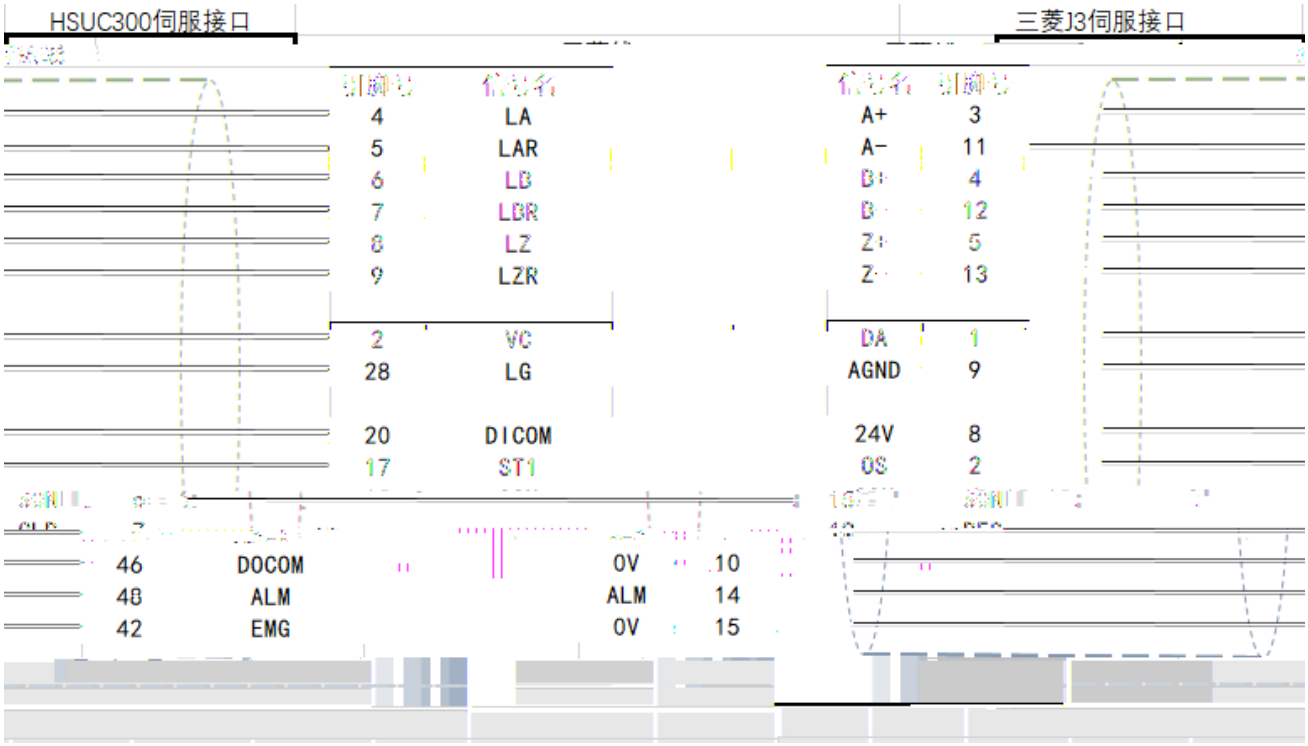
3.3.4 ķ



ķ JSDEP Й

Cn001	1	ч Â
Cn002.2	1	Âˆ ' Cn002 2 β ~
Cn005	2500	‖ QC300 ‖ 10000
Cn026	4	↕ 4 ╕ Â
Sn216	4000	QC300 ч 400

3.3.5 MR-J30A

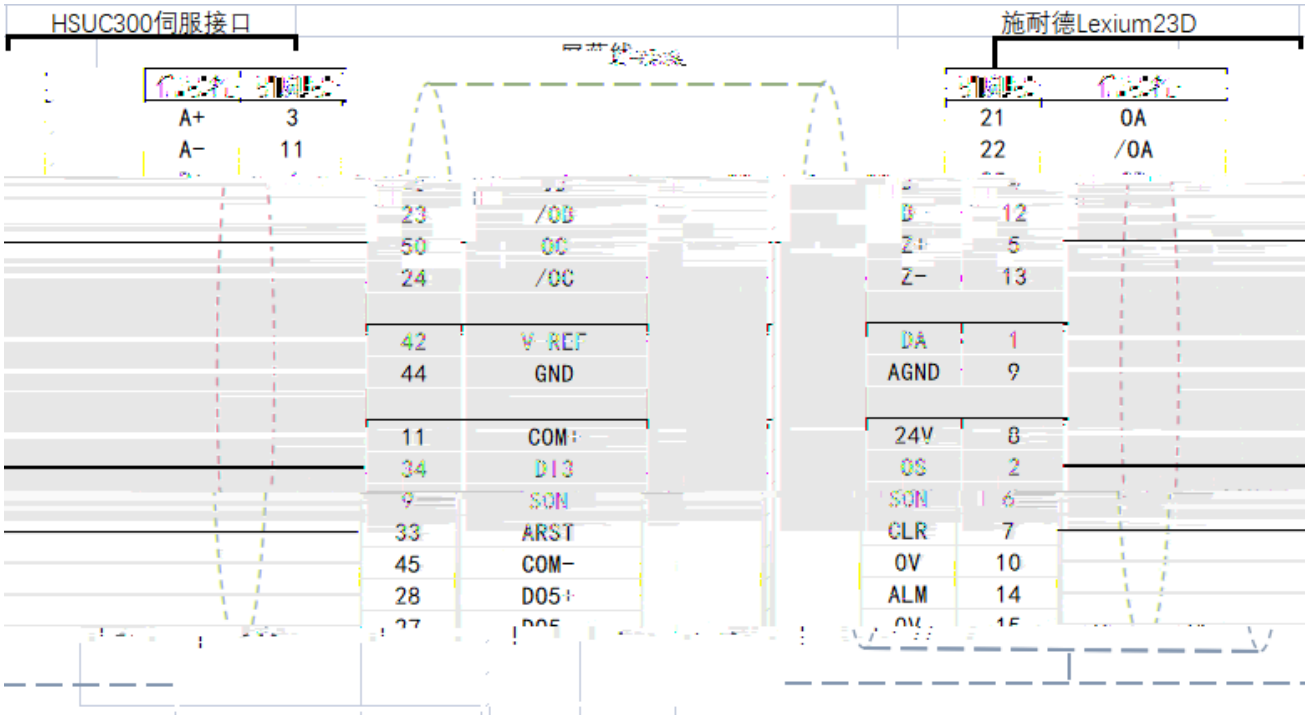


MR-J30A

ST2	
ST1	0S
SP2	
SP3	
EMG	DOCOM

PA01	2	- Â
PA15	10000	‖ x4
PC12	5000	500r/v/min
PC17	0	Þ 0 ˇ ˆ ST1 β ˇ ~

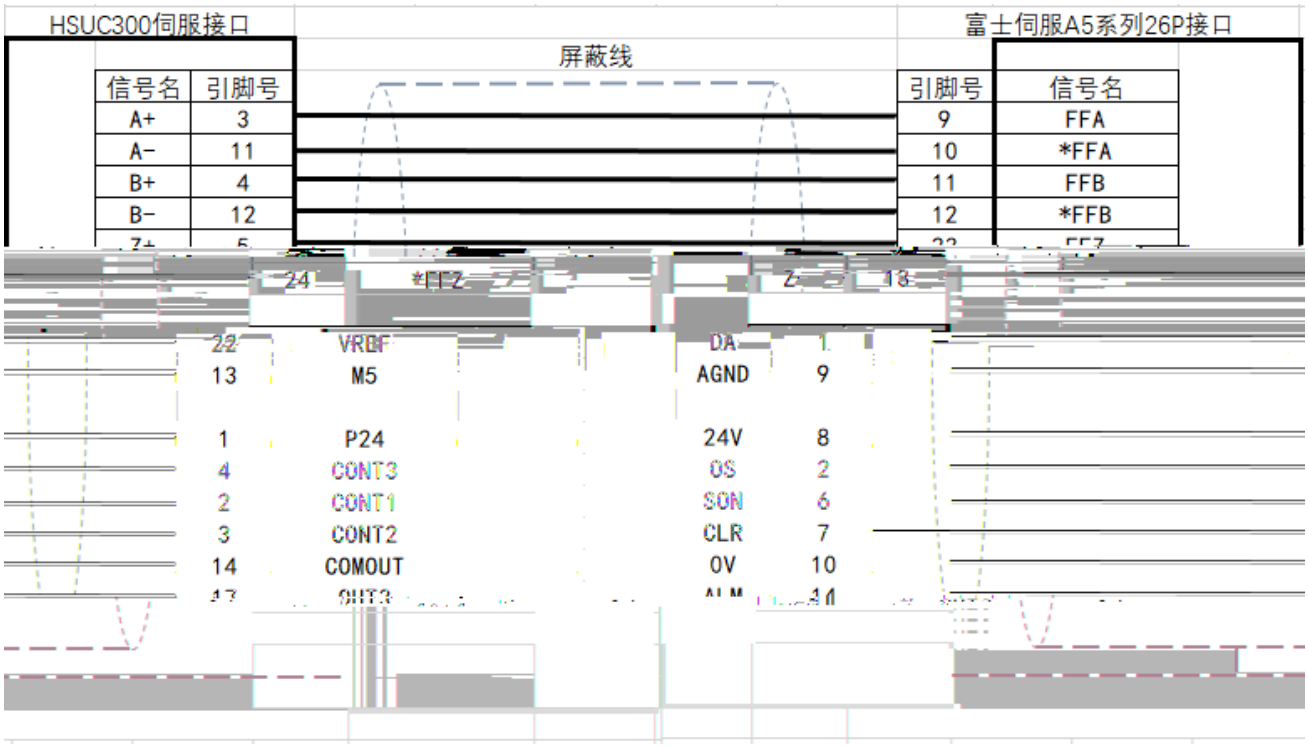
3.3.6 Lexium23D



Lexium23D Й ‘

P2-10	101	IN1 ч SON˝
P2-11	0	Ь IN2
P2-13~P2-17	0	Ь IN4~IN8
P1-38	400	40.0RPM β
P1-01	2	Ќ ч
P1-40	5000	;‘; 500r/v/min
P1-46	2500	;‘; ‖ 10000

3.3.7 ALPHA5



ALPHA5 Й `

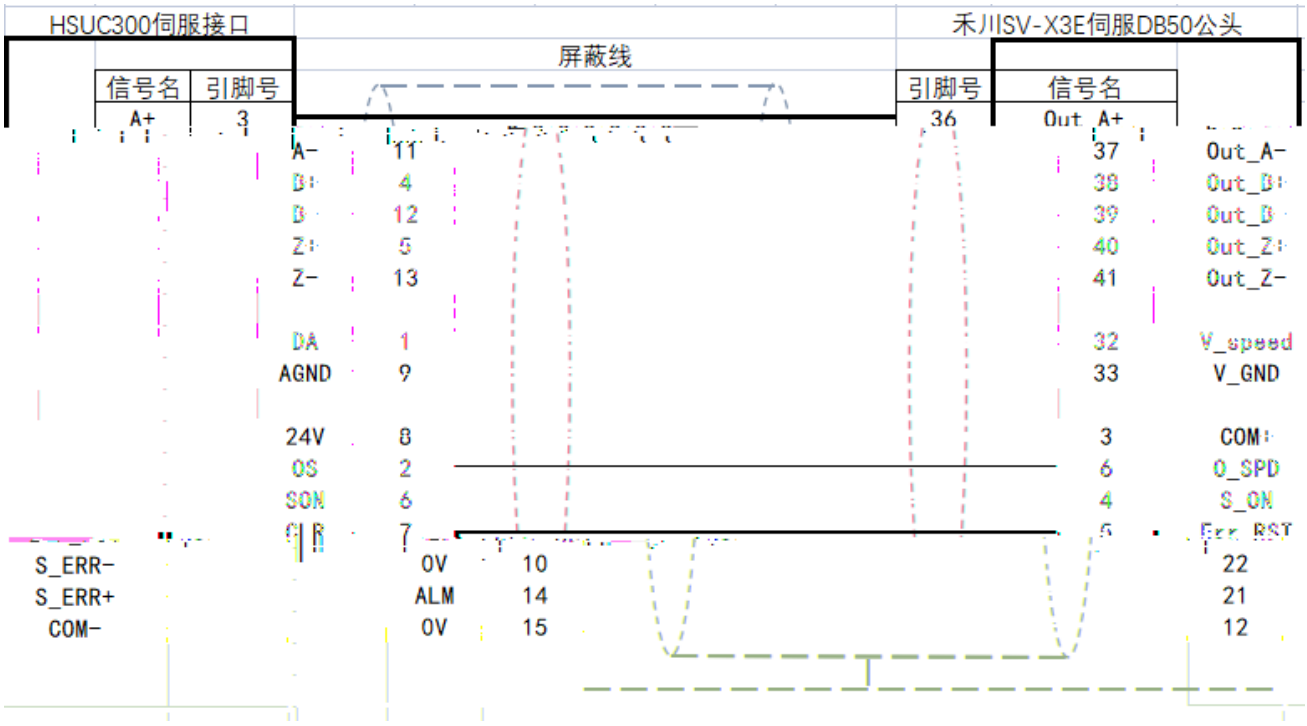
PA-101	01	
PA-108	2500	‖ 10000
PA-115	17	↕
PA-303	02	ɒ
PA-331	6.0	500r/v/min

3.3.8 IS620P

IS620P Й ‘

H02-00	0	ч
H03-10	1	DI5ˇ ‘
H03-11	0	DI5 ‘ γ
H03-12	12	DI16ˇ ‘ β ˇ
H03-13	0	DI16 ‘ γ
H03-80	5000	ɒ 500r/v/min
H06-00	1	h ɒ A ‘ AI1
H06-02	0	ɒ ‘ h ɒ A
H06-15	5000	β

3.3.9 SV-X3E



SV-X3E Й ‘

P00.01	1	ч
P00.03	17	↨
P03.00	1	Ɒ SPR^ AI1˜
P03.19	1	β ˇ
P04.03	12	DI3ˇ ќ ч β
P05.01	-1000	-10V
P05.02	1000	10V
P05.14	5000	Ɒ 500r/v/min

3.4 QC300

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QC300

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5.1

EtherCAT

C300xml									
				XML					
	0x1600	DO 1	BOOL	1	0~1		RW	0x7000.01	1
		DO 2	BOOL	2	0~1		RW	0x7000.02	2
		DO 3	BOOL	3	0~1		RW	0x7000.03	3
		DO 4	BOOL	4	0~1		RW	0x7000.04	4
		DO 5	BOOL	5	0~1		RW	0x7000.05	5
		DO 6	BOOL	6	0~1		RW	0x7000.06	6
		DO 7	BOOL	7	0~1		RW	0x7000.07	7
		DO 8	BOOL	8	0~1		RW	0x7000.08	8
		DO 9	BOOL	9	0~1		RW	0x7000.09	9
		DO 10	BOOL	10	0~1		RW	0x7000.10	10
		DO 11	BOOL	11	0~1		RW	0x7000.11	11
		DO 12	BOOL	12	0~1		RW	0x7000.12	12
		DO 13	BOOL	13	0~1		RW	0x7000.13	13
		DO 14	BOOL	14	0~1		RW	0x7000.14	14
		DO 15	BOOL	15	0~1		RW	0x7000.15	15
		DO 16	BOOL	16	0~1		RW	0x7000.16	16
	0x1601	AO 1	INT	1	0~32767		RW	0x7002.01	0-10V
		AO 2	INT	2	0~32767		RW	0x7002.02	0-10V
		AO 3	INT	3	0~32767		RW	0x7002.03	0-10V
		AO 4	INT	4	0~32767		RW	0x7002.04	0-10V
	0x1602	Zero Position	UINT	1			RW	0x8000.00	C300 X
		Ref Height	UINT	2	0~20		RW	0x8001.00	
		Follow Controlword	UINT	3	0~65535		RW	0x8002.00	
		rsv	DINT	4			RW	0x8003.00	
		rsv	DINT	5			RW	0x8004.00	
		rsv	DINT	6			RW	0x8005.00	
		rsv	DINT	7			RW	0x8006.00	
		rsv	INT	8			RW	0x8007.00	
		rsv	DINT	9			RW	0x8008.00	
		rsv	DINT	10			RW	0x8009.00	
		rsv	UINT	11			RW	0x800A.00	
		rsv	UINT	12			RW	0x800B.00	
		rsv	DINT	13			RW	0x800C.00	
	0x1A00	DI 1	BOOL	1	0~1		RO	0x7001.01	1( )
		DI 2	BOOL	2	0~1		RO	0x7001.02	2( )
		DI 3	BOOL	3	0~1		RO	0x7001.03	3( )
		DI 4	BOOL	4	0~1		RO	0x7001.04	4( )
		DI 5	BOOL	5	0~1		RO	0x7001.05	5( )
		DI 6	BOOL	6	0~1		RO	0x7001.06	6( )
		DI 7	BOOL	7	0~1		RO	0x7001.07	7( )
		DI 8	BOOL	8	0~1		RO	0x7001.08	8( )
		DI 9	BOOL	9	0~1		RO	0x7001.09	9( )
		DI 10	BOOL	10	0~1		RO	0x7001.10	10( )
		DI 11	BOOL	11	0~1		RO	0x7001.11	11( )
		DI 12	BOOL	12	0~1		RO	0x7001.12	12( )
		DI 13	BOOL	13	0~1		RO	0x7001.13	13( )
		DI 14	BOOL	14	0~1		RO	0x7001.14	14( )
		DI 15	BOOL	15	0~1		RO	0x7001.15	15( )
		DI 16	BOOL	16	0~1		RO	0x7001.16	16( )
		DI 17	BOOL	17	0~1		RO	0x7001.17	17( )
		DI 18	BOOL	18	0~1		RO	0x7001.18	18( )
		DI 19	BOOL	19	0~1		RO	0x7001.19	19( )
		DI 20	BOOL	20	0~1		RO	0x7001.20	20( )
		DI 21	BOOL	21	0~1		RO	0x7001.21	21( )
		DI 22	BOOL	22	0~1		RO	0x7001.22	22( )
		DI 23	BOOL	23	0~1		RO	0x7001.23	23( )
		DI 24	BOOL	24	0~1		RO	0x7001.24	24( )
	0x1A01	Real Capacity	DINT	1			RO	0x8100.00	
		Real Height	DINT	2			RO	0x8101.00	
		Statusword	UINT	3			RO	0x8102.00	
		Z Position	DINT	4			RO	0x8103.00	Z
		Touch Ordination	DINT	5			RO	0x8104.00	
	0x1A03	Position Actual Value	DINT	1			RO	0x6064.00	Z (X)
		Velocity Actual Value	DINT	2			RO	0x606C.00	Z (X)
		Statusword	UINT	3			RO	0x6041.00	Z (X)
		Modes Of Operation Display	SINT	4			RO	0x6061.00	Z (X)

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						X	
2000: 01	Cal Range		32	0.01mm		√	rw
2000: 02	Cal Speed		32	0.01mm /s		√	rw
2000: 03	Touch Cap Dif		32	1		√	rw
2000: 04	Cap Type		16		0:2D 1:3D	√	rw
2000: 05	Touch Cap		32	1		√	ro
2000: 06	Cal Points		16	1		√	ro
2001: 01	Port Position		32	0.01mm		√	rw
2001: 02	Z Travel	Z	32	0.01mm			rw
2001: 03	Mid Position		32	0.01mm			rw
2001: 04	Pid KP1	PID 1	32	0.01		√	rw
2001: 05	Pid KP2	PID 2	32	0.01		√	rw
2001: 06	Pid KI	PID	32	0.01		√	rw
2001: 07	Pid KD	PID	32	0.01		√	rw
2001: 08	Pid Filter1	PID 1	32	0.01		√	rw
2001:	Pid Filter2	PID	32	0.01		√	rw

09		2					
2001:10	Pid Amp1	PID 1	32	1		√	rw
2001:11	Pid Amp2	PID 2	32	1		√	rw
2001:12	Dry Speed		32	0.01mm/s			rw
2001:13	Dry Acc		32	0.01mm/s2			rw
2001:14	Fol Speed		32	0.01mm/s		√	rw
2001:15	Fol Acc		32	0.01mm/s2		√	rw
2001:16	Fol Offset		32	0.01mm		√	rw
2001:17	Fol Offset Delay		32	ms		√	rw
2001:18	Touch Delay		32	ms		√	rw
2002:01	Pulse Circle		32	1		√	rw
2002:02	Pitch		16	0.01mm		√	rw
2002:03	Max Rpm		16	r/min		√	rw
2002:04	Vel Gain		16	r/min/V		√	rw
2002:05	Up Lmt Logic		16				rw
2002:06	Down Lmt Logic		16				rw
2002:07	Gen Input Logic		16				rw
2002:08	Servo Type		16		0: 1:	√	rw
8000:00	Zero Position		32	Pulse		√	rw
8001:00	Ref Hight		32	0.01mm		√	rw
8002:00	FollowControlword		16			√	rw
8100:00	Real Capacity		32			√	ro
8101:	Real Height		32	0.01mm		√	ro

00							
8102: 00	FollowStatusword		16			√	ro
8103: 00	Z Position	Z	32	0.01mm		√	ro
6040: 00	Axis Controlword		16			√	rw
6041: 00	Axis Statusword		16			√	ro
6060: 00	Axis Mode of Operation		16				rw
6061: 00	Axis Mode of Operation Display		16				ro
6064: 00	Position Actual Value		32			√	ro
606C: 00	Velocity Actual Value		32			√	ro
607A: 00	Axis Target Position		32				rw
60FF: 00	Axis Target Vlocity		32			√	rw

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D8 ч C300 β ч X Â

D9 ч ч X

D11 β 1 Â

D12 à D13 β Й β Â

D14 ч Â

D15 ч Â

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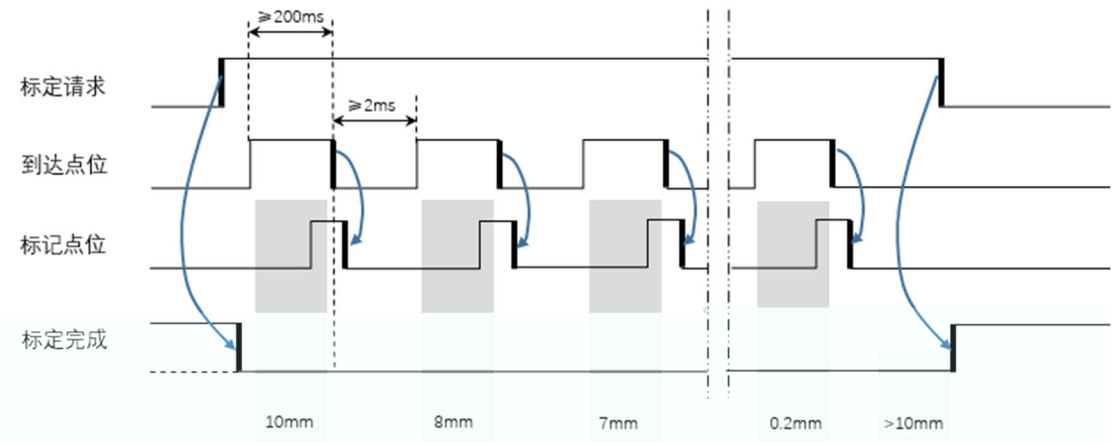
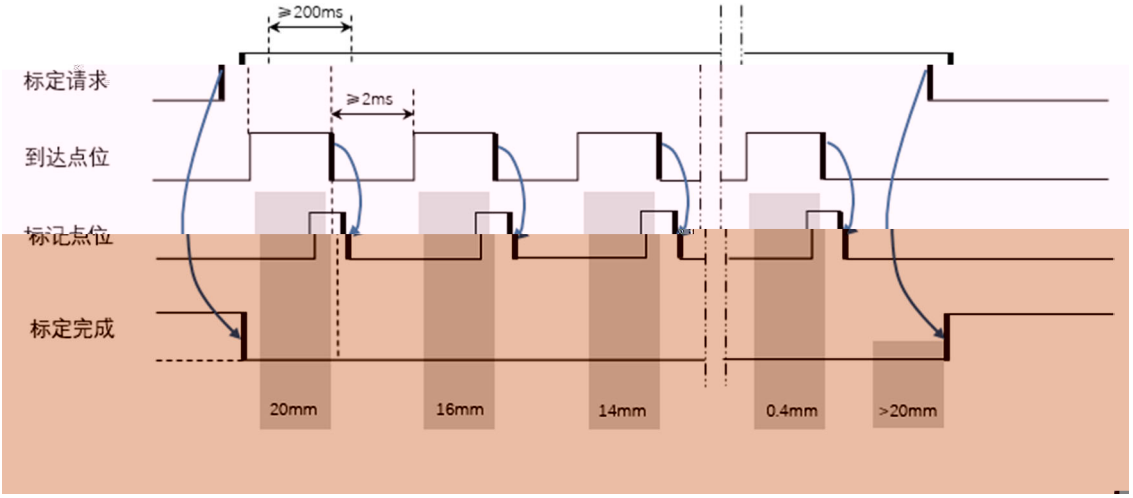


20 ‘



5.3

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						X	
2000:01	Cal Range		32	0.01mm		√	rw
2000:02	Cal Speed		32	0.01mm/s		√	rw
2000:03	Touch Cap Dif		32	1		√	rw
2000:04	Cap Type		16		0:2D 1:3D	√	rw
2000:05	Touch Cap		32	1		√	ro
2000:06	Cal Points		16	1		√	ro
2001:01	Port Position		32	0.01mm		√	rw
2001:02	Z Travel	Z	32	0.01mm			rw
2001:03	Mid Position		32	0.01mm			rw

2001:04	Pid KP1	PID 1	32	0.01		√	rw
2001:05	Pid KP2	PID 2	32	0.01		√	rw
2001:06	Pid KI	PID	32	0.01		√	rw
2001:07	Pid KD	PID	32	0.01		√	rw
2001:08	Pid Filter1	PID 1	32	0.01		√	rw
2001:09	Pid Filter2	PID 2	32	0.01		√	rw
2001:10	Pid Amp1	PID 1	32	1		√	rw
2001:11	Pid Amp2	PID 2	32	1		√	rw
2001:12	Dry Speed		32	0.01mm/s			rw
2001:13	Dry Acc		32	0.01mm/s2			rw
2001:14	Fol Speed		32	0.01mm/s		√	rw
2001:15	Fol Acc		32	0.01mm/s2		√	rw
2001:16	Fol Offset		32	0.01mm		√	rw
2001:17	Fol Offset Delay		32	ms		√	rw
2001:18	Touch Delay		32	ms		√	rw
2002:01	Pulse Circle		32	1		√	rw
2002:02	Pitch		16	0.01mm		√	rw
2002:03	Max Rpm		16	r/min		√	rw
2002:04	Vel Gain		16	r/min/V		√	rw
2002:05	Up Lmt Logic		16				rw
2002:06	Down Lmt Logic		16				rw

2002:07	Gen Input Logic		16				rw
2002:08	Servo Type		16		0: 1:	√	rw
8000:00	Zero Position		32	Pulse		√	rw
8001:00	Ref Hight		32	0.01mm		√	rw
8002:00	FollowControlword		16			√	rw
8100:00	Real Capacity		32			√	ro
8101:00	Real Height		32	0.01mm		√	ro
8102:00	FollowStatusword		16			√	ro
8103:00	Z Position	Z	32	0.01mm		√	ro
6040:00	Axis Controlword		16			√	rw
6041:00	Axis Statusword		16			√	ro
6060:00	Axis Mode of Operation		16				rw
6061:00	Axis Mode of Operation Display		16				ro
6064:00	Position Actual Value		32			√	ro
606C:00	Velocity Actual Value		32			√	ro
607A:00	Axis Target Position		32				rw
60FF:00	Axis Target Vlocity		32			√	rw

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