HF680NLC

1.02

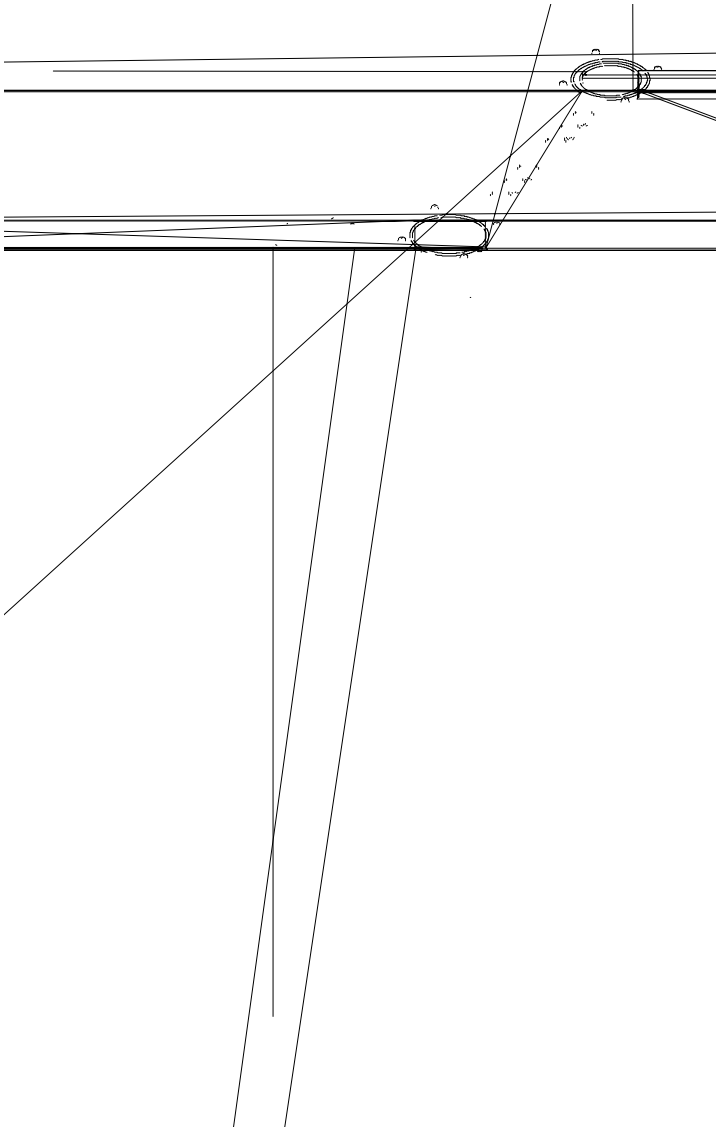
Wuhan Guide Technology Co.,Ltd.

HF680NLC

HF680NLC

1.
   1.1
   1.2
   1.3
2.
   2.1
   2.2
   2.3
   2.4
   2.5
   2.6
   2.7
   2.8
   2.9
   2.10
   2.11
3.
   3.1
   3.2
   3.3
   3.4
   3.5 DP
   3.6 PG
   3.7 PG
4.
   4.1
   4.2
   4.3
   4.4
   4.5
   4.6
   4.7
Ф
   4.8
   4.9 EMC
5.
   5.1
   5.2
   5.3
   5.4
6.
   6.1
   6.2
7.
   7.1 P2
   7.2 P3
   7.3 P4
   7.. " п

7.7 1



1.2

(1)

(2)

(3)

(4)

LVD	2014/35/EU	EN 61800-5-1
EMC	2014/30/EU	EN 61800-3

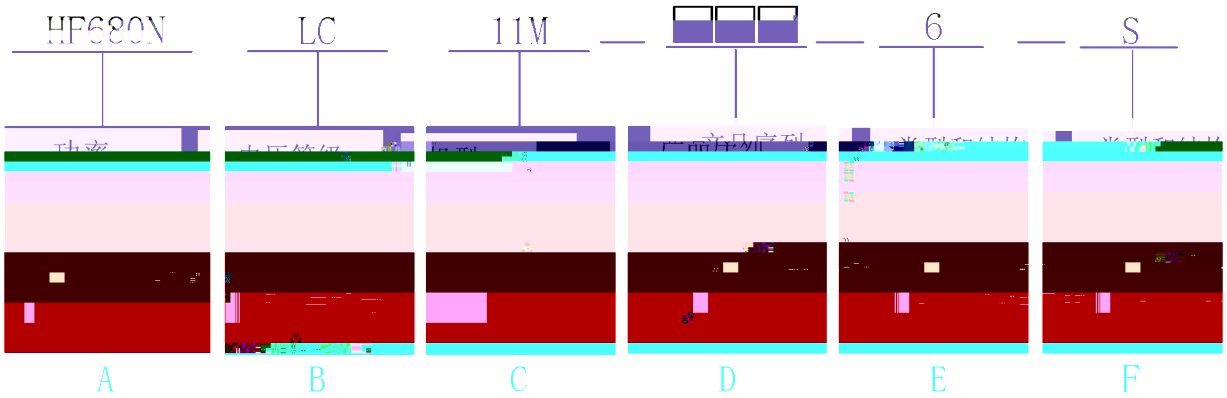
1.3

2.

2.1

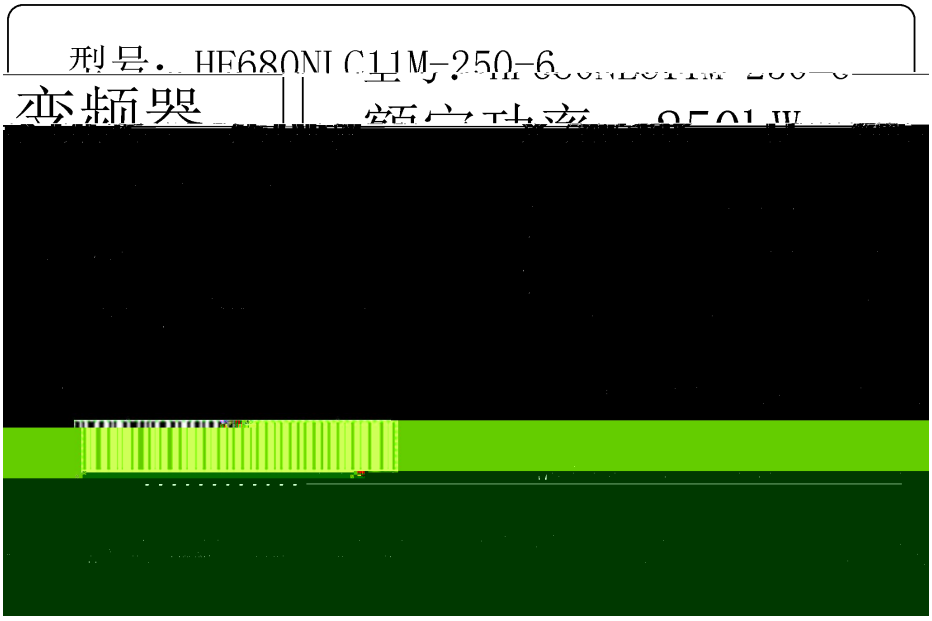
1.
2.
3.
4.

2.2



2-1

A	HF680N
B	LC
= t	



2-2

HF680NLC11M-250-6 HF680NLC 250kW

690V

AC

3PH

660V-690V 50/60Hz

0-690V 0-300Hz

2.3

2-3 HF680NLC

	[A]	[kW]	[A]	[kW]		
HF680NLC11M-200-6	220	200	180	160	W1	6
HF680NLC11M-250-6	290	250	220	200		
HF680NLC11M-280-6	320	280	290	250		
HF680NLC11M-315-6	355	315	320	280		

HF680NLC11M-355-6	390	355	355	315		
HF680NLC11M-400-6	420	400	390	355		
HF680NLC11M-450-6	472	450	420	400		
HF680NLC11M-500-6-S	545	500	472	450		
HF680NLC11M-560-6-S	610	560	545	500		
HF680NLC11M-630-6-S	675	630	610	560	W2	6
HF680NLC11M-710-6-S	760	710	675	630		
HF680NLC11M-800-6-S	810	800	760	710		
HF680NLC11M-500-6	545	500	472	450		
HF680NLC11M-560-6	610	560	545	500		
HF680NLC11M-630-6	675	630	610	560	W2	12
HF680NLC11M-710-6	760	710	675	630		
HF680NLC11M-800-6	810	800	760	710		
HF680NLC11M-900-6-S	910	900	810	800		
HF680NLC11M-1000-6-S	1025	1000	910	900	W3	6
HF680NLC11M-1120-6-S	1130	1120	1025	1000		
HF680NLC11M-1200-6-S	1280	1200	1130	1120		
HF680NLC11M-900-6	910	900	810	800		
HF680NLC11M-1000-6	1025	1000	910	900	W3	12
HF680NLC11M-1120-6	1130	1120	1025	1000		
HF680NLC11M-1200-6	1280	1200	1130	1120		
HF680NLC11C-1400-6	1520	1400	1280	1200	W2*2	12
HF680NLC11C-1600-6	1620	1600	1520	1400		

1 150% 5 1
HF680NLC11M-1200-6 HF680NLC11M-1200-6-S 110%
5 1

2 180% 5 5
HF680NLC11M-1200-6 HF680NLC11M-1200-6-S 160%
5 5

3 HF680NLC11M-1200-6 HF680NLC11M-1200-6-S 1.5kHz

4 HF680NLC11M-500-6 HF680NLC11M-1200-6 2
2 12

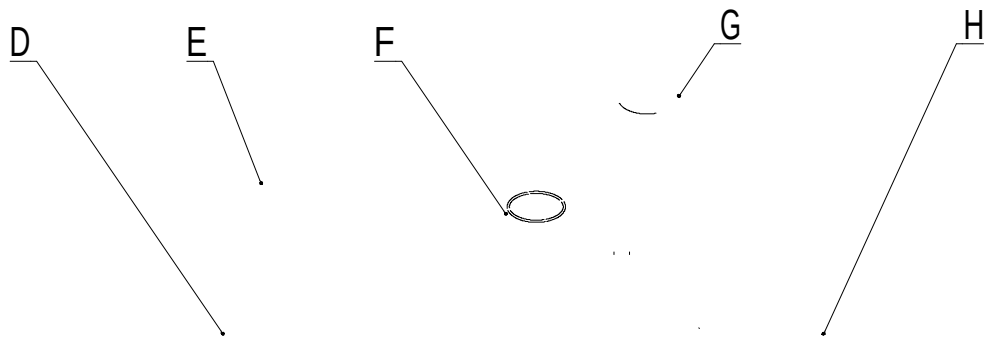
5 HF680NLC11M-500-6-S HF680NLC11M-1200-6-S 2
1 6

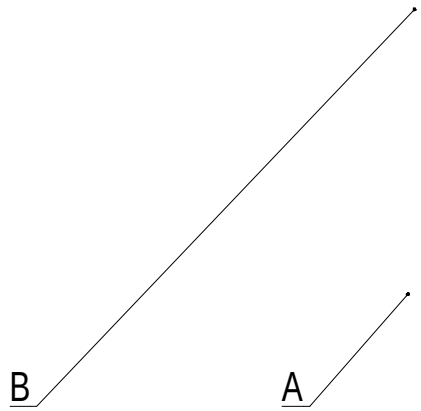
6 HF680NLC11C-1400-6 HF680NLC11C-1600-6 2
2 12

2.4

HF680NLC

HF680NLC11M-200-6 HF680NLC11M-450-6

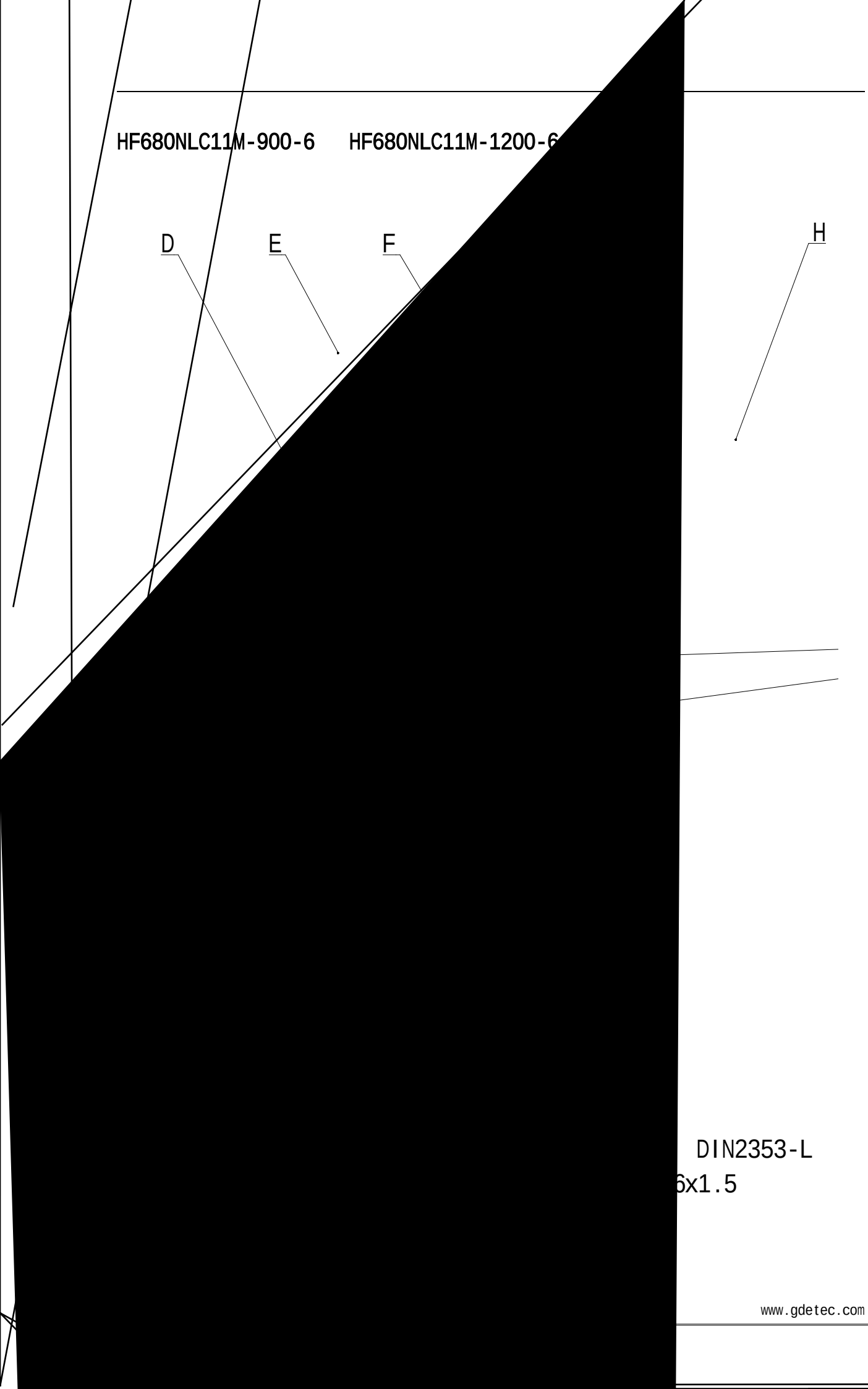




A- B- C- D-

E- F- 1 G- 2 H-

HF680NLC11M-900-6 HF680NLC11M-1200-6



DIN2353-L

6x1.5

2.5

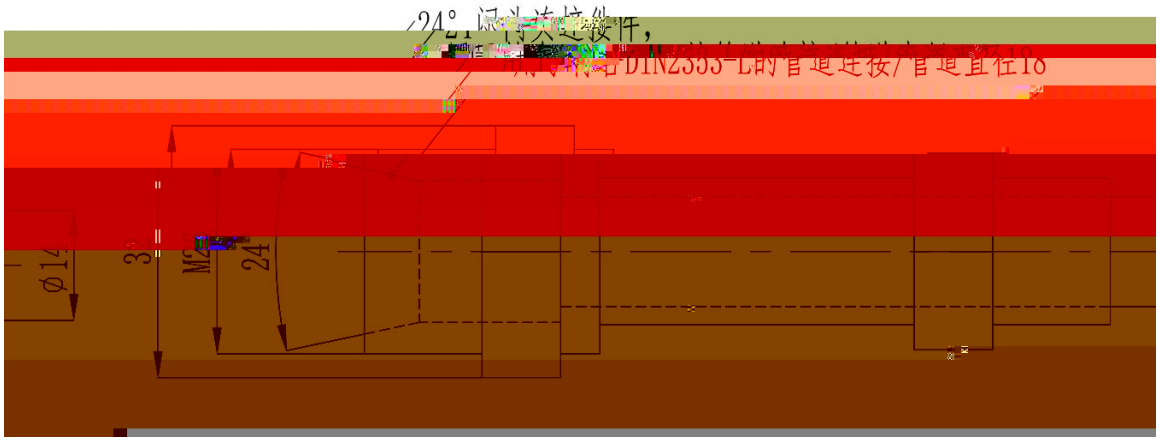
		(mm)					(mm)			8.8	kg
		H1	H2	W1	D1	D2	A	B			
W1	200	858	820	240	536	520	800	150	Φ13	M12	95
	250										
	280										
	315										
	355										
	400										
	450										
W2	500kW	1058	1020	240	536	520	1000	150	Φ13	M12	132
	560kW										
	630kW										
	710kW										
	800kW										
W3	900kW	1228	1190	260	626	610	1170	150	Φ13	M12	198
	1000kW										
	1120kW										
	1200kW										

2.6

		660V 690V
		50/60Hz
		-15% +10%
		0
		0 300Hz
		1kHz 10kHz
		0.01Hz x0.1%
		(VC) (SVC) V/F
	V/F	
		PG PG

300Hz

0Hz/



2.7

	c/a/T (kW)	c/a/T (kW)
HF680NLC11M-200-6	4/0.2/4.2	

W1

2.8

(1) 200%

(2) 50% HF680NLC

(3) HF680NLC

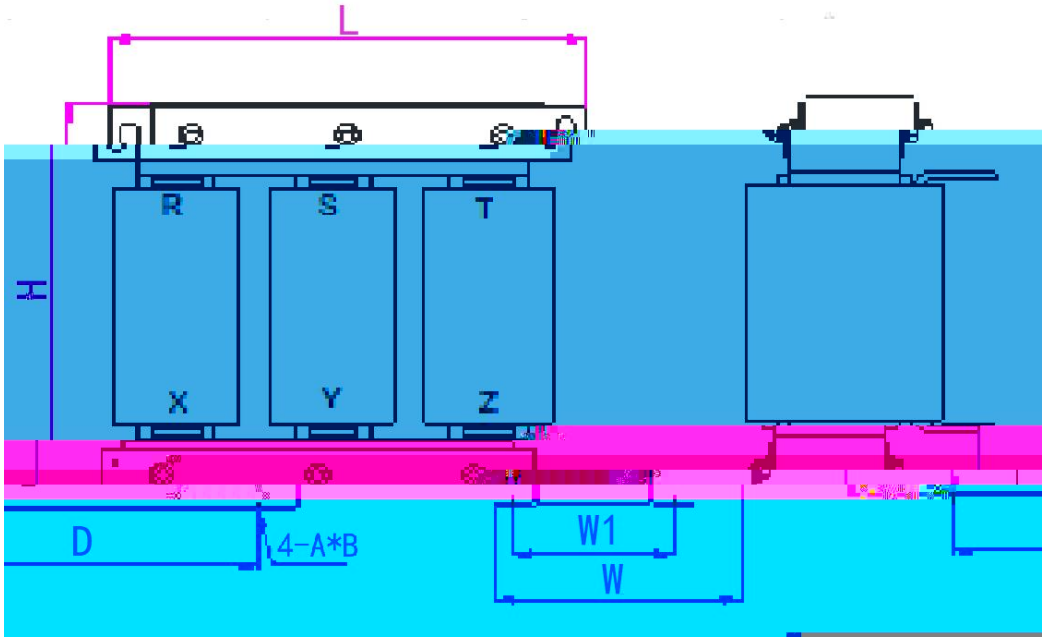
2.9

	● ● ● ● PID
	● / ● / ●
	● ● ●
	● / ● /

2.10

DP	GDHF-ADPX1	GDHF-ADPX1 DP HF680NLC11M	Profibus
PG	GDHF-APGX1	GDHF-APGX1 PG HF680NLC11M	
PN	GDHF-APNX1	GDHF-APNX1 HF680NLC11M	Profinet
STO	GDHF630N4STO01A	GDHF630N4STO01A	STO HF680NLC11M
	GDHF-AKZY1	GDHF-AKZY1	HF680NLC11M
2	GDHF-KL2	GDHF-KL2 2	HF680NLC11M 2
4	GDHF-KL4	GDHF-KL4 4	HF680NLC11M 4
	GDHF680N4FB01A1	GDHF680N4FB01A1	HF680NLC11M
	GDHF680N4FB02A1	GDHF680N4FB02A1 " -1	HF680NLC11M

2.11



HF680NLC11M-200-6	ACR-0250-0M11-0.7SC	1
HF680NLC11M-250-6	ACR-0290-096U-0.7SC	1
HF680NLC11M-280-6	ACR-0330-085U-0.7SC	1
HF680NLC11M-315-6	ACR-0330-085U-0.7SC	1
HF680NLC11M-355-6	ACR-0390-072U-0.7SC	1
HF680NLC11M-400-6	ACR-0490-057U-0.7SC	1
HF680NLC11M-450-6	ACR-0490-057U-0.7SC	1
HF680NLC11M-500-6	ACR-0290-096U-0.7SC	2
HF680NLC11M-560-6	ACR-0330-085U-0.7SC	2
HF680NLC11M-630-6	ACR-0330-085U-0.7SC	2
HF680NLC11M-710-6	ACR-0390-072U-0.7SC	2
HF680NLC11M-800-6	ACR-0490-057U-0.7SC	2

HF680NLC11M-900-6	ACR-0490-057U-0.7SC	2
HF680NLC11M-1000-6	ACR-0600-047U-0.7SC	2
HF680NLC11M-1120-6	ACR-0680-042U-0.7SC	2
HF680NLC11M-1200-6	ACR-0680-042U-0.7SC	2
HF680NLC11M-500-6-S	ACR-0600-047U-0.7SC	1
HF680NLC11M-560-6-S	ACR-0600-047U-0.7SC	1
HF680NLC11M-630-6-S	ACR-0680-042U-0.7SC	1
HF680NLC11M-710-6-S	ACR-0810-035U-0.7SC	1
HF680NLC11M-800-6-S	ACR-0810-035U-0.7SC	1
HF680NLC11M-900-6-S	ACR-1000-028U-0.7SA	1
HF680NLC11M-1000-6-S	ACR-1000-028U-0.7SA	1
HF680NLC11M-1120-6-S	ACR-1200-022U-0.7SA	1
HF680NLC11M-1200-6-S	ACR-1200-022U-0.7SA	1
HF680NLC11C-1400-6	ACR-0810-035U-0.7SC	2
HF680NLC11C-1600-6	ACR-0810-035U-0.7SC	2

	L	±5mm	W	H	D	W1	A*B
ACR-0250-0M11-0.7SC		290	220	260	214	122	11*18
ACR-0290-096U-0.7SC		290	260	280	214	132	11*18
ACR-0330-085U-0.7SC		290	230	310	214	122	11*18
ACR-0390-072U-0.7SC		320	245				

3.

1. / “ ” / 2. 3. - R S T - U V W - P1 P N 4. 12 5.
△
1. 2. 3. 40

3.1

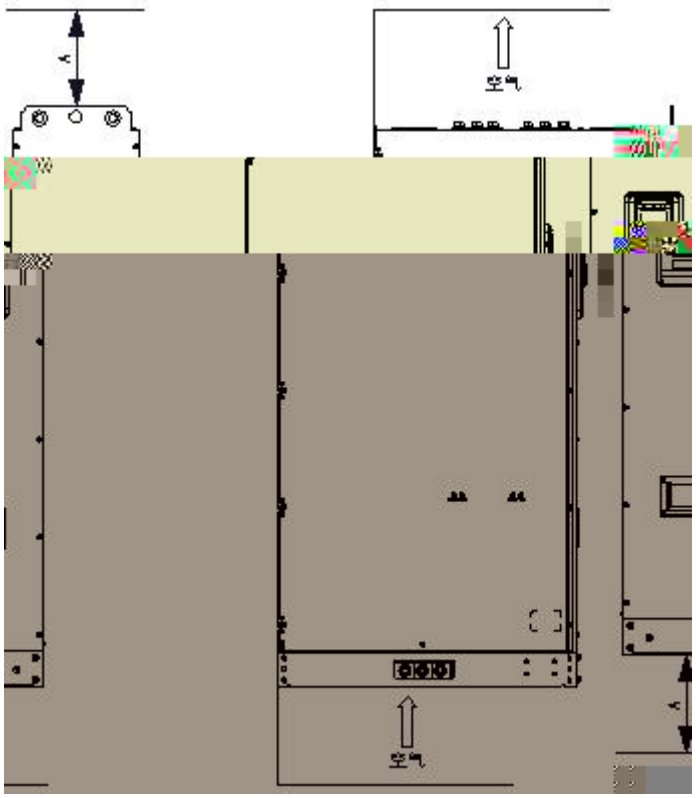
-
- -20 +60
- 0% 95%
-
-
-

1 5

3.2

-
- -10 +50 +50 +60 1
  2%
- 95%RH
-
-
-
-
-
-
- 1000 1000 100 1%
  3000

3.3

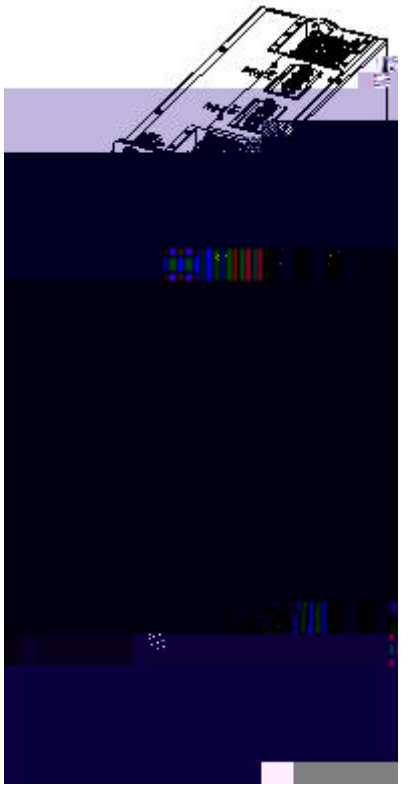


	A ≥ 200mm

3.4

1 1 M4

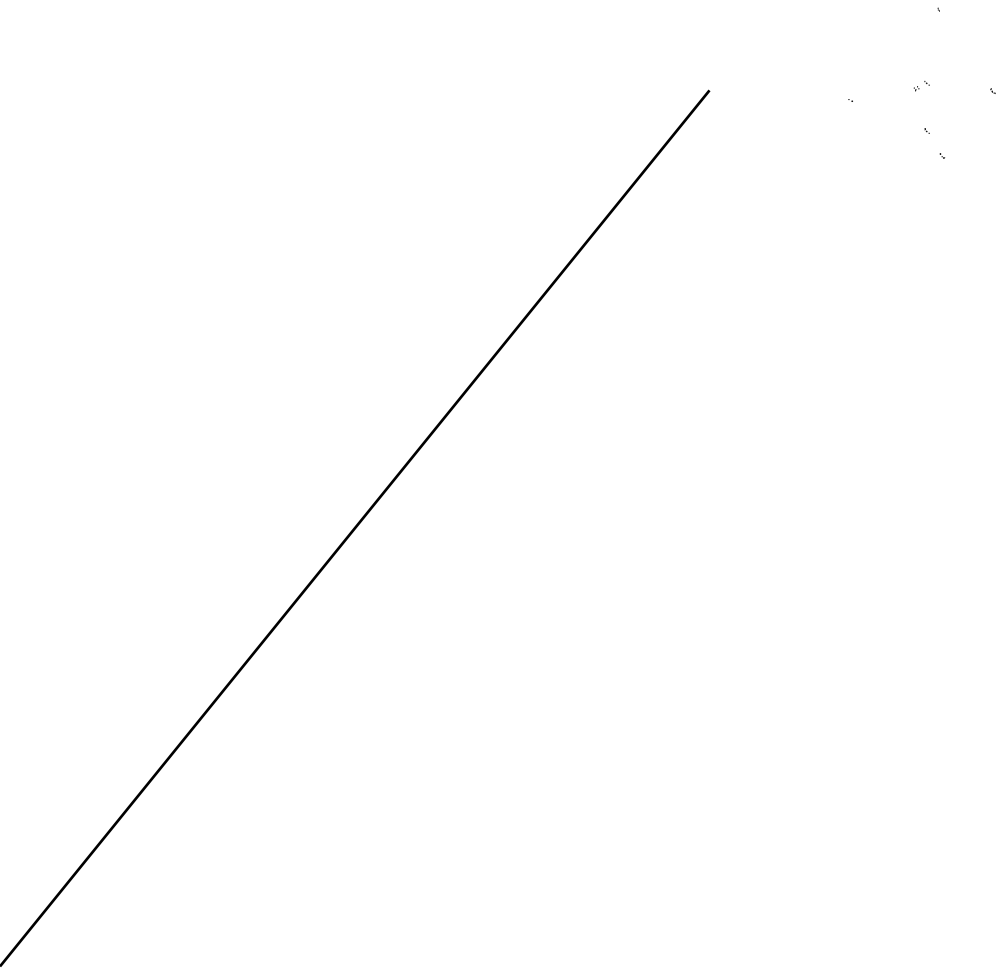
2 2



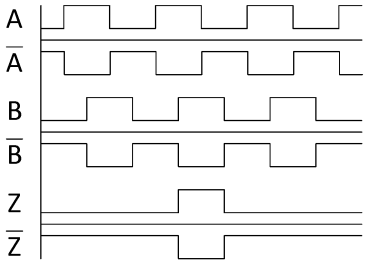
3-1

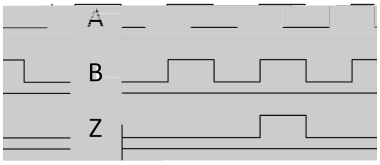
3.5 DP

3.6 PG



1 2





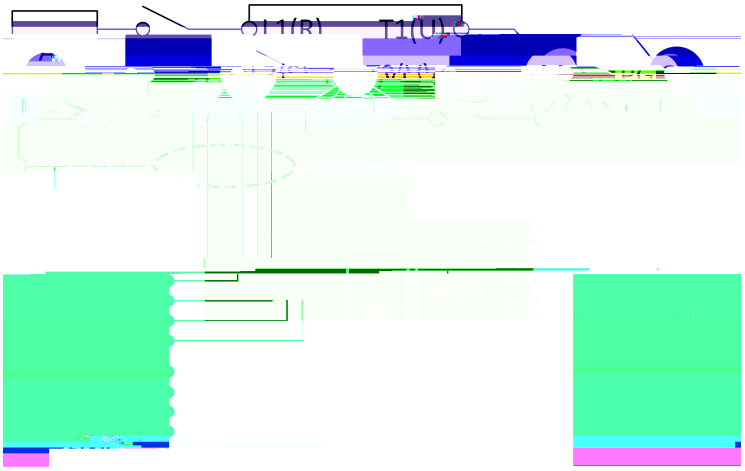
A

B

Z N 0

GDHF-APGX1

3.7.2



PG

PG

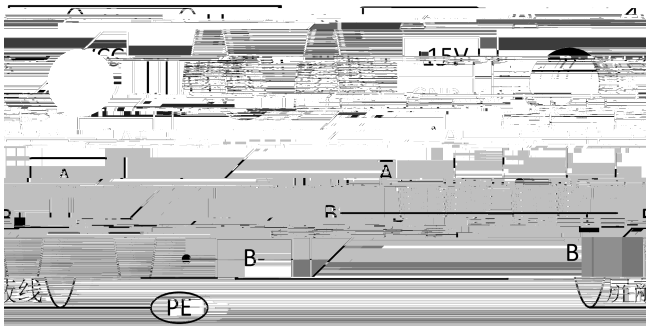
PE

3.7.3

PG

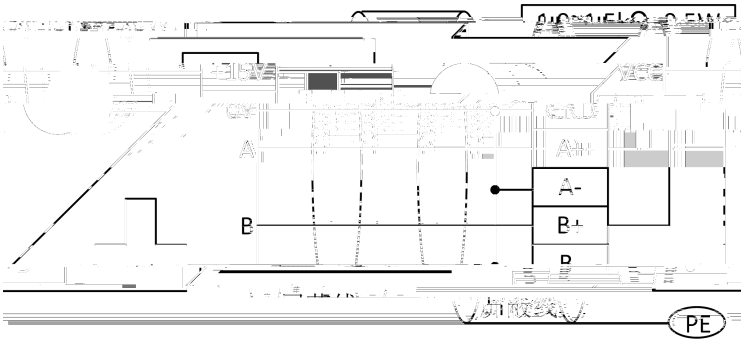
Ø

3.7.3.1



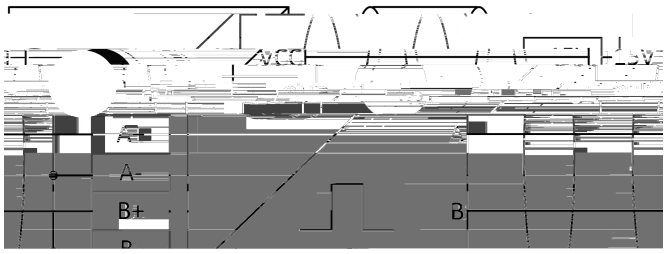
	HLE45-600L-3F.AC
	RVI78N-10CALA31N-1024
	EC120P45-P6PR-1024

3.7.3.2



	HLE45-1024L-30C.AC
	EB38A6-C4PR-1024

3.7.3.3



	HLE45-600L-3R.AC
	EB50A8-N4PR-1024

3.7.3.4

4.

4.1

1

2 12

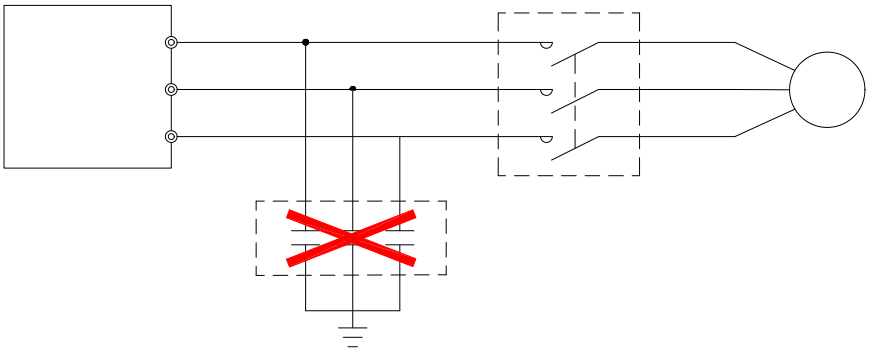
3 U V W

4

5

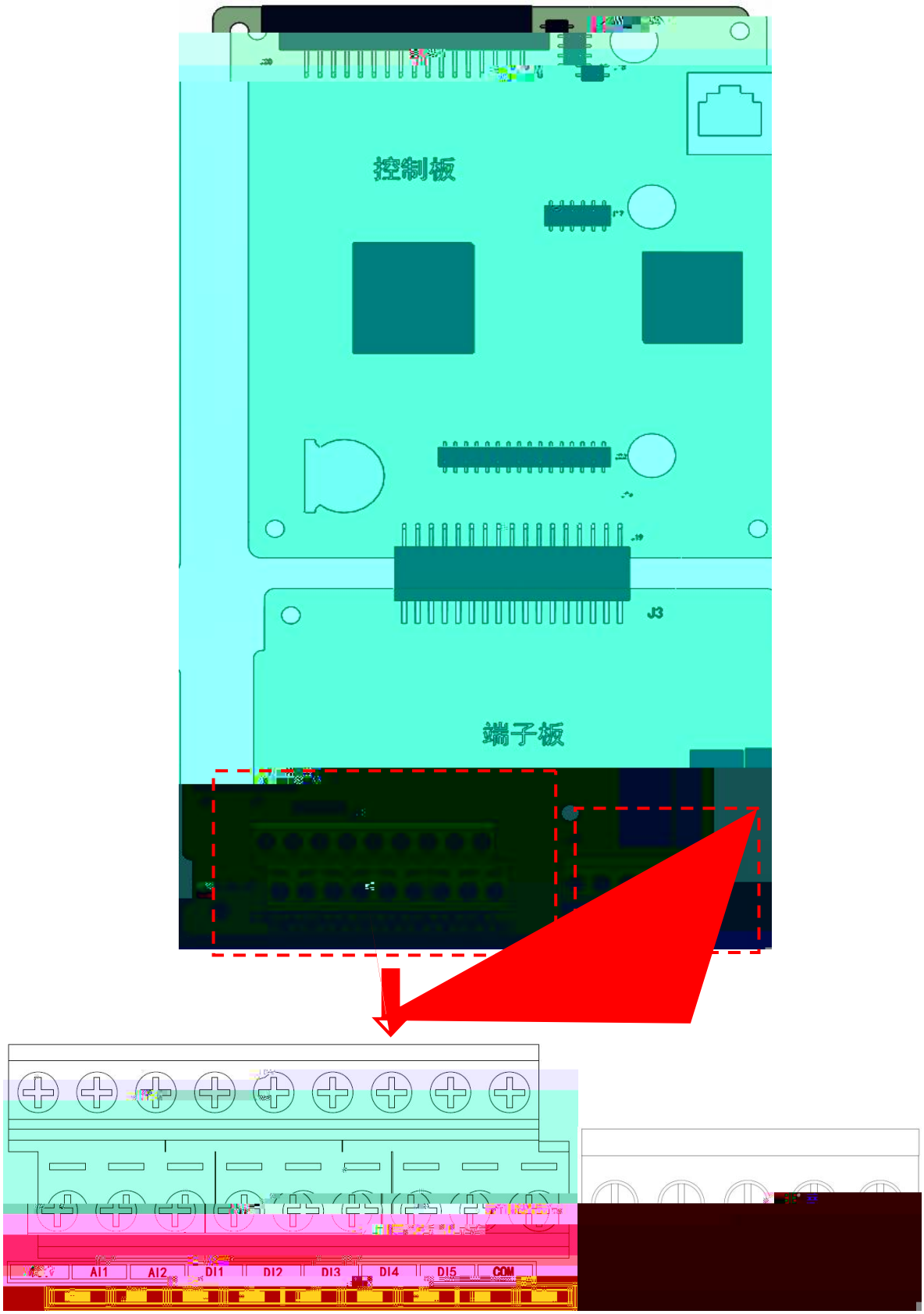
6

7 U V W 4-1



P +	
N -	
R S T	
U V W	
	

4.3



1

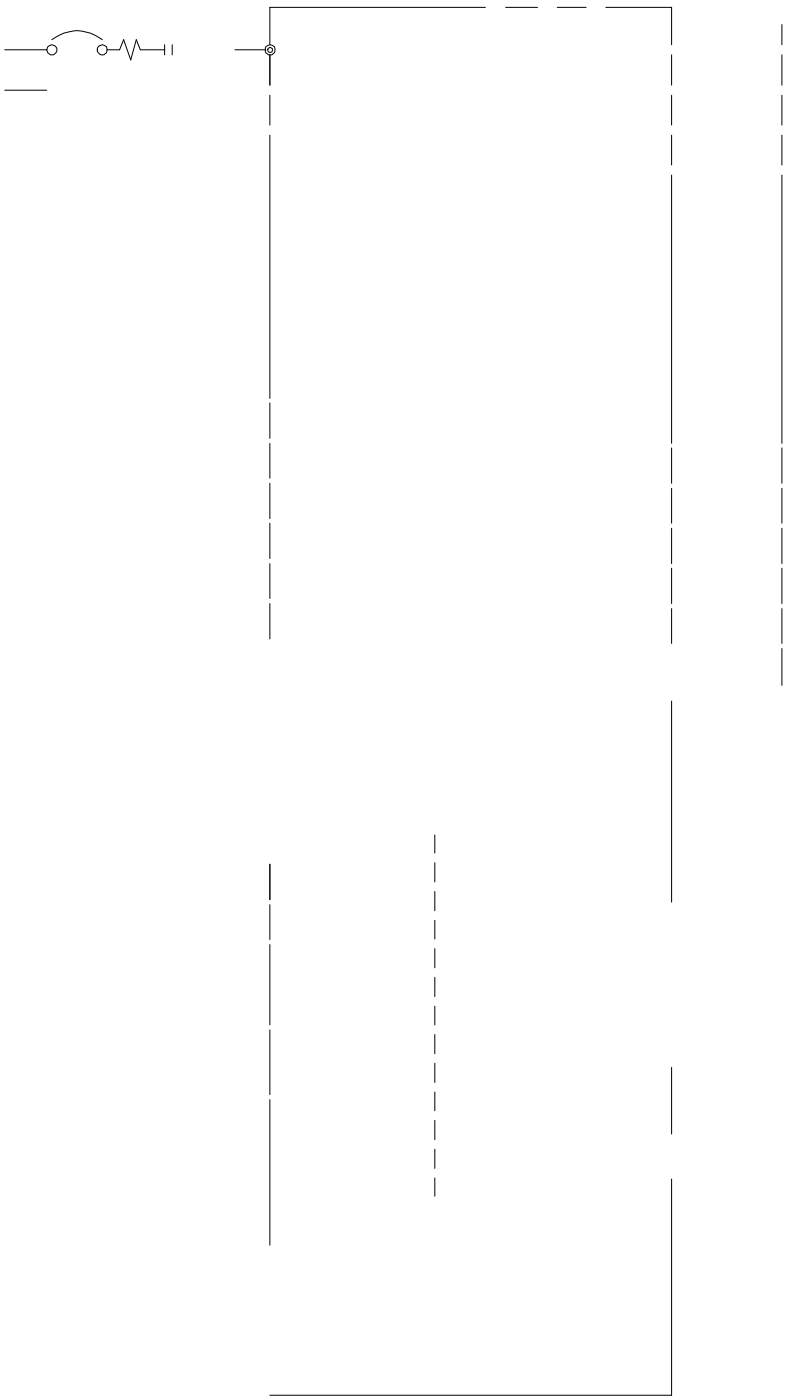
	1	2	3	4	5	6	7	8
	+10V	GND	AI1+	AI1-	AI2+	AI2-	AO1	COM
	9	10	11	12	11			

6	AI2-		2								
			1					0/4	20mA	J9	I
7	AO1										
		a		0	10V	J9			V	b	
8	COM		1								
			2					0/4	20mA	J10	I
9	AO2										
		a		0	10V	J10			V	b	
10	COM		2								
11	DI1			1							
12	DI2			2							
13	DI3			3							
14	DI4			4							
15	DI COM										
16	DI5			5							
17	DI6			6							
18	DI7			7							
19	DI										
	CO										

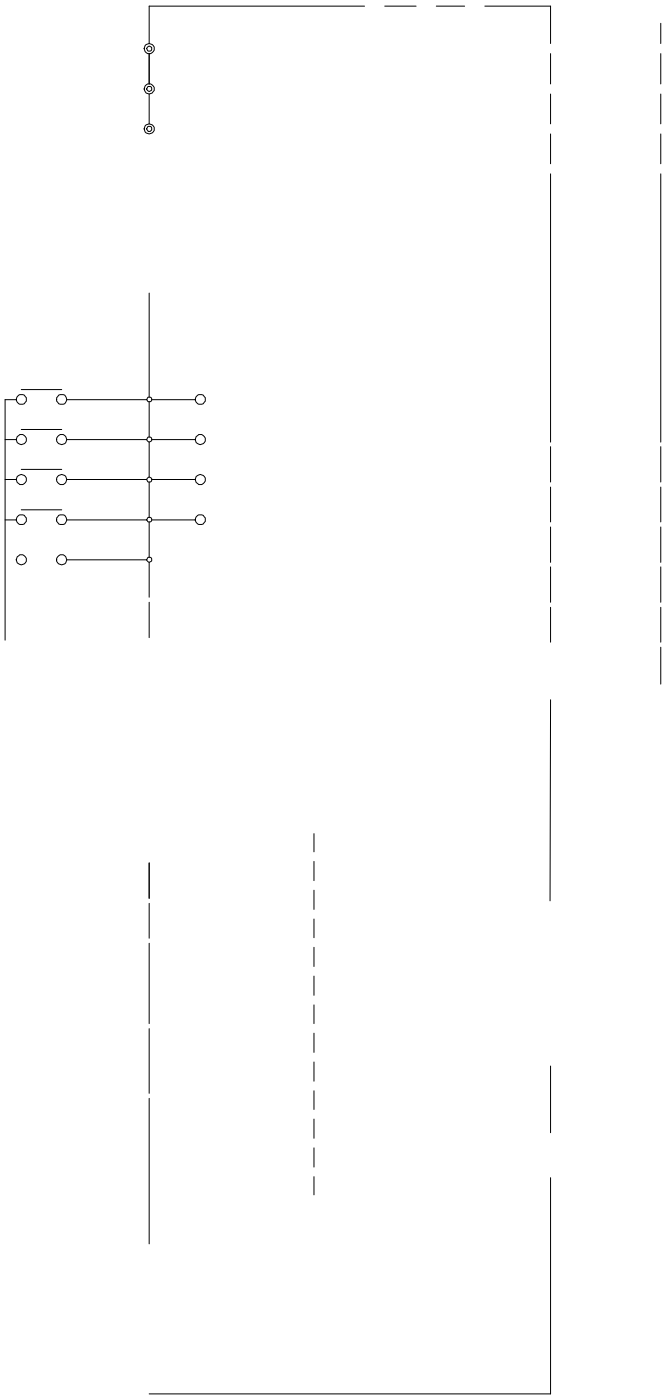
27	D04A	4
28	D04C	4
29	D04B	4
30	D05A	5
31	D05C	5

4.4

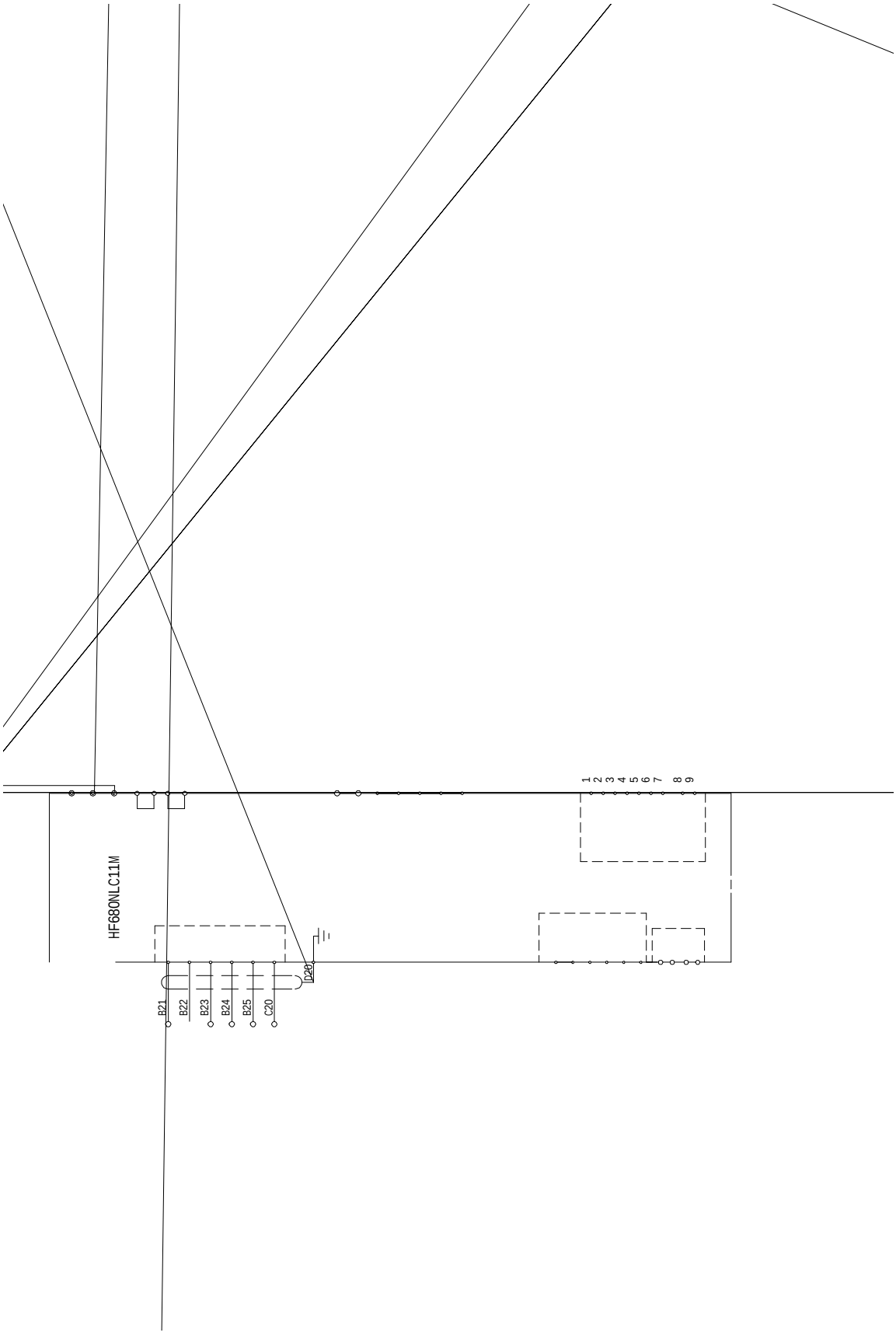
6



12

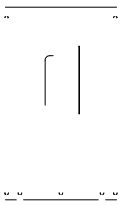


4.5



4.6

W2
6



12

4.7

	A	/ mm² CEFR 40%	A (AC-3)
HF680NLC11M-200-6	264	95	240
HF680NLC11M-250-6	348	120	320
HF680NLC11M-280-6	384	150	350
HF680NLC11M-315-6	426	2*70	390
HF680NLC11M-355-6	468	2*95	430
HF680NLC11M-400-6	504	2*95	460
HF680NLC11M-450-6	566	2*95	520
HF680NLC11M-500-6	654	2*120	600
HF680NLC11M-560-6	732	2*150	670
HF680NLC11M-630-6	810	4*70	750
HF680NLC11M-710-6	912	4*70	840
HF680NLC11M-800-6	972	4*95	890
HF680NLC11M-900-6	1092		

HF680NLC11M-800-6-S	2*590	4*95	2*460
HF680NLC11M-900-6-S	2*550	4*95	2*520
HF680NLC11M-1000-6-S	2*620	4*120	2*600
HF680NLC11M-1120-6-S	2*680	4*150	2*670
HF680NLC11M-1200-6-S	2*770	4*150	2*710
HF680NLC11C-1400-6	1824	8*70	1680
HF680NLC11C-1600-6	1944	8*95	1790

4.8

	(KW)		
HF680NLC11M-200-6	200	250A	0.055 mH
HF680NLC11M-250-6	250	290A	0.048 mH
HF680NLC11M-280-6	280	330A	0.042 mH
HF680NLC11M-315-6	315	390A	0.036 mH
HF680NLC11M-355-6	355	390A	0.036 mH
HF680NLC11M-400-6	400	490A	0.028 mH
HF680NLC11M-450-6	450	490A	0.028 mH
HF680NLC11M-500-6 HF680NLC11M-500-6-S	500	600A	0.023 mH
HF680NLC11M-560-6 HF680NLC11M-560-6-S	560	600A	0.023 mH
HF680NLC11M-630-6 HF680NLC11M-630-6-S	630	810A	0.017 mH

HF680NLC11M-710-6 HF680NLC11M-710-6-S	710	810A	0.017 mH
HF680NLC11M-800-6 HF680NLC11M-800-6-S	800	810A	0.017 mH
HF680NLC11M-900-6 HF680NLC11M-900-6-S	900	1025A	0.013 mH
HF680NLC11M-1000-6 HF680NLC11M-1000-6-S	1000	1025A	

EMC

EMC EMC

2 EMC

~

20cm

20cm

90

c

EMC

d

100m

e

5.

5.1

HF680NLC11M

F1 LOCAL/REMOTE F2 RUN STOP

5.2

خم

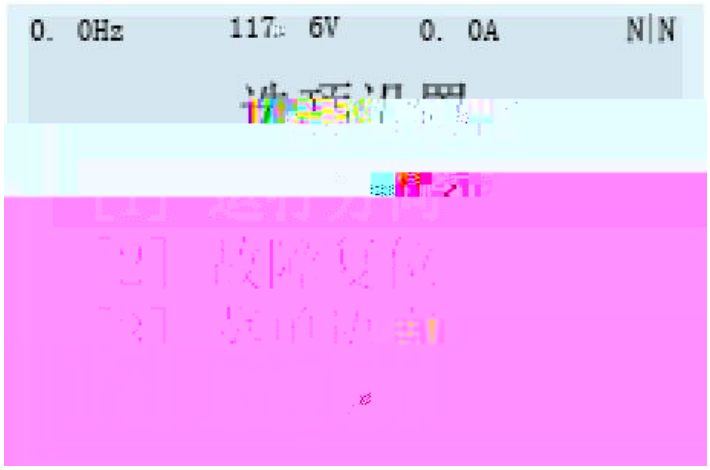
4

ENTER F1/F2

5.4

1	Option Set	
2	Parameter Setting	/
3	Reference Set	
4	Function Setting	

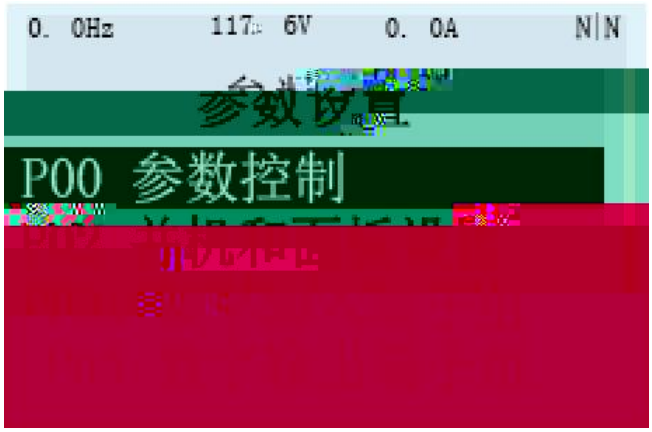
5	Fault Record	
6	Security	



1	Choose Direction	
2	Reset Error	
3	Menu Language	
4	Monitor Setting	
5	LCD Contrast	
6	Time Setting	
7	Version	

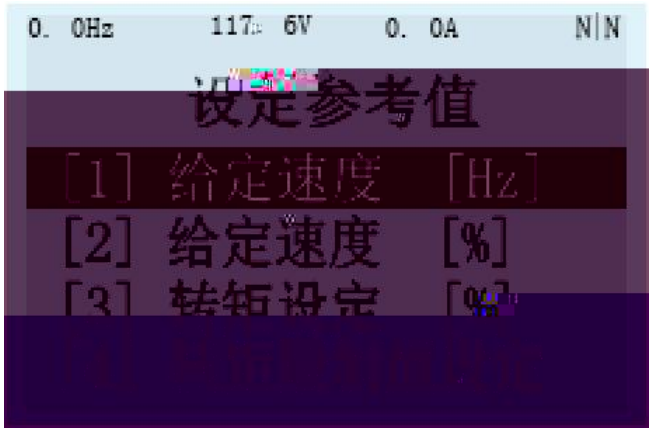
8	OLD COM	

5.4.2



Parameter Setting

5.4.3

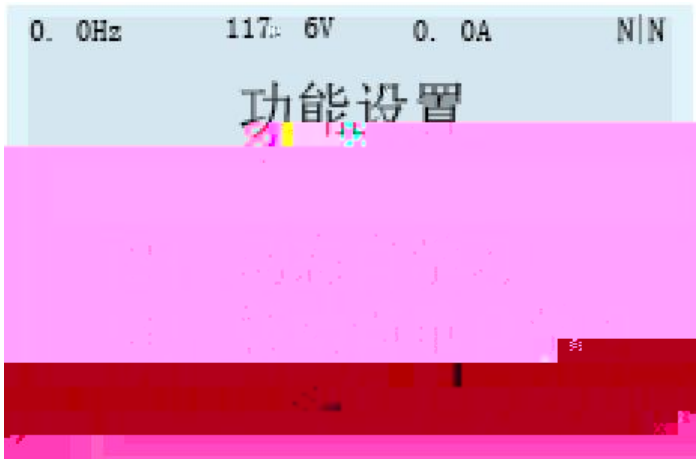


Reference Set

Reference Set	Speed	[Hz]	Hz
		[%]	%
	Torque	[%]	%

	Torque limiter	[%]	%
	1	[%]	1
	2	[%]	2

5.4.4

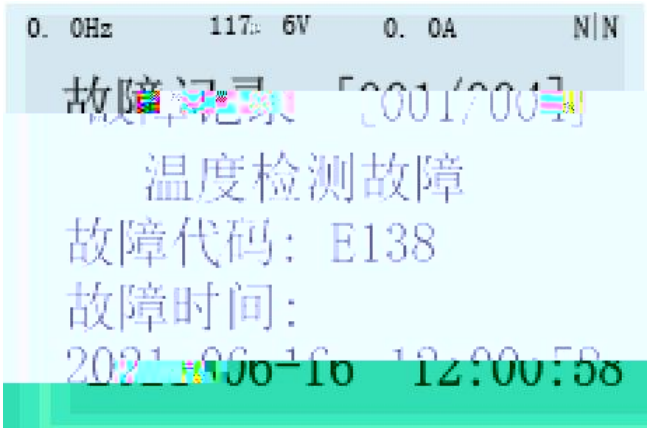


Function Setting

1	MotoTuning I	
2	MotoTuning II	
3	MotoTuning III	
4	DC-Link Tuning (AFE)	AFE
5	Shortcut Paras Setting	

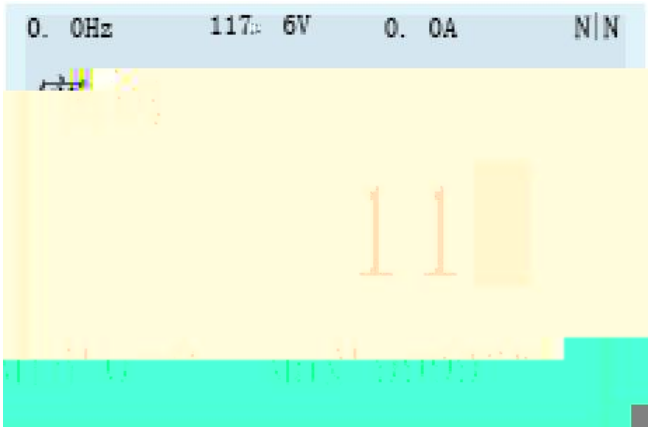
▼ ▲ “Enter”

5.4.5



Fault Record

5.4.6



Access Permissions

6.

6.1

/

V/F P16.11=0 V/F

P16.11=2 P16.11=1

6.2

6.2.1

1

AC660~690V 50/60Hz

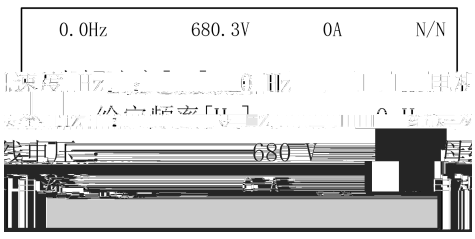
2 U,V,W

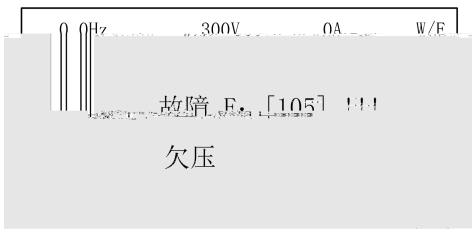
3

4 PG PG

5

6.2.2





“

” “ ”

4

50%

M

1

2 LOCAL/REMOTE LOCAL LOCAL

3 RUN RUN

5Hz

4

5 4 50Hz

6 STOP

6.2.8

1

2

3

4

5

6 STOP

1

2

1

2

7.

7.1 P2

[0]
P2.0 [1] 0 2 0
[2]

18	1	2
19	2	3
20	3	4
21	FUNC 21	
22		
23		
24 31	FUNC 24 FUNC 31	
32		AFE
33 48	FUNC 33 FUNC 48	
49	PROFIBUS 1	PROFIBUS 1
50	PROFIBUS 2	PROFIBUS 2
51	PROFIBUS 3	PROFIBUS 3
52	PROFIBUS 4	PROFIBUS 4
53	PROFIBUS 5	PROFIBUS 5
54 56	FUNC 54 FUNC 56	
57	1	
58	2	
59	3	
60	4	
61	1	1
62	2	2
63	3	3
64	4	4

7.4 P5

P5.0	AI1	[0] [1]0 +10V [2]-10 +10V [3]0 20mA AI1	0 3	1	
P5.1	AI1		0.0 1000.0 [ms]	25.0 [ms]	
P5.2	AI1	AI1	-10.00 10.00 [V]	0.000 [V]	8.4
P5.3	AI1	AI1	-20.00 20.00 [mA]	0.000 [mA]	8.4
P5.4	AI1	AI1	-10.00 10.00 [V]	0.000	

P5.19	AI2	AI2	0.0 1000.0 [ms]	25.0 [ms]	
P5.20	AI2	AI2	-10.00 10.00 [V]	0.000 [V]	
P5.21	AI2	AI2	-20.00 20.00 [mA]	0.000 [mA]	
P5.22	AI2	AI2	-10.00 10.00 [V]	0.000 [V]	
P5.23	AI2	AI2	0.00 20.00 [mA]	0.000 [mA]	
P5.24	AI2	AI2	-300.0 300.0 [%]	0.0 [%]	
P5.25	AI2	AI2	-10.00 10.00 [V]	10.000 [V]	
P5.26	AI2	AI2	0.00 20.00 [mA]	20.000 [mA]	
P5.27	AI2	AI2	-300.0 300.0 [%]	100.0 [%]	

7.5 P6

P6.0	AO1	7-1	0 14	2	
P6.1	1		0 1000	0	8.5
P6.2	AO1	AO1	-300.0 300.0 [%]	0.0 [%]	8.5
P6.3	AO1	AO1	-300.0 300.0 [%]	100.0 [%]	8.5
P6.4	AO1 [mA V]	AO1	0.0 100.0 [%]	0.0 [%]	8.5
P6.5	AO1 [mA V]	AO1	0.0 100.0 [%]	100.0 [%]	8.5
P6.6	AO1	AO1	-100.00 100.00 [%]	0.00 [%]	
P6.7	AO1	AO1 (P6.0 [13])	0.0 100.0 [%]	0.0 [%]	
P6.8	AO1	AO1	0.0 1000.0 [ms]	10.0 [ms]	
P6.14	AO2	7-1	0 14	4	
P6.15	2		0 1000	0	
P6.16	AO2	AO2	-300.0 300.0 [%]	0.0 [%]	
P6.17	AO2	AO2	-300.0 300.0 [%]	100.0 [%]	
P6.18	AO2 [mA V]	AO2	0.0 100.0 [%]	0.0 [%]	
P6.19	AO2 [mA V]	AO2	0.0 100.0 [%]	100.0 [%]	
P6.20	AO2	AO2	-100.00 100.00 [%]	0.00 [%]	

P6.21	AO2	AO2 (P6.14 [13])	0.0 100.0 [%]	0.0 [%]	
P6.22	AO2	AO1	0.0 1000.0 [ms]	10.0 [ms]	

7-1

0		
1		
2		
3		
4		
5		
6		
7		
8	(%)	( )
9		
10		
11	(%)	(150)
12	DP	Profibus
13		P6.7 P6.21
14		

7.6 P7

P7.0	[1]	1	0.0 300.0 [%]	180.0 [%]	8.6
P7.1	[2]	2	0.0 300.0 [%]	180.0 [%]	8.6
P7.2	[3]	3	0.0 300.0 [%]	180.0 [%]	8.6
P7.3	[4]	4	0.0 300.0 [%]	180.0 [%]	8.6
P7.4	[1]	1	0.0 300.0 [%]	235.0 [%]	8.6
P7.5	[2]	2	0.0 300.0 [%]	235.0 [%]	8.6
P7.6	[3]	3	0.0 300.0 [%]	235.0 [%]	8.6
P7.7	[4]	4	0.0 300.0 [%]	235.0 [%]	8.6
P7.8	[1]	1	0.0 100.0 [%]	20.0 [%]	8.6
P7.9	[2]	2	0.0 100.0 [%]	20.0 [%]	8.6
P7.10	[3]	3	0.0 100.0 [%]	20.0 [%]	8.6
P7.11	[4]	4	0.0 100.0 [%]	20.0 [%]	8.6
P7.12			800 1250 [V]	1200 [V]	8.6

P7.13			400 750 [V]	550 [V]	8.6
P7.14			60.0 100.0 [ ]	87.5 [ ]	8.6
P7.15			50.0 100.0 [ ]	80.0 [ ]	8.6
P7.19	[1]	1	100.0 720.0 [%]	120.0 [%]	8.6
P7.20	[2]	2	100.0 720.0 [%]	120.0 [%]	8.6
P7.21	[3]	3	100.0 720.0 [%]	120.0 [%]	8.6
P7.22	[4]	4	100.0 720.0 [%]	120.0 [%]	8.6
P7.23	1 M1	1	0.00 3.00 [s]	0.50 [s]	8.6
P7.24	1 M2	2	0.00 3.00 [s]	0.50 [s]	8.6
P7.25	1 M3	3	0.00 3.00 [s]	0.50 [s]	8.6
P7.26	1 M4	4	0.00 3.00 [s]	0.50 [s]	8.6
P7.27	1	1	0.00 3.00 [s]	2.00 [s]	
P7.28	2	2	0.00 3.00 [s]	2.00 [s]	
P7.29	3	3	0.00 3.00 [s]	2.00 [s]	

P7.30	4		4	0.00 3.00 [s]	2.00 [s]	
P7.31				0.0 100.0 [%]	25.0 [%]	
P7.32				0.00 5.00 [s]	1 [s]	
P7.33				0.0 1000.0 [s]	360.0 [s]	
P7.47				0.0 300.0 [%]	100.0 [%]	8.6
P7.48	1		1 >=1200Kw 1 = 110%	0.0 300.0 [%]	150.0 [%] <1200Kw 110.0[%] >=1200Kw	8.6
P7.49	1		1	0.00 60.00 [s]	60.00 [s]	8.6
P7.50	2		2 >=1200Kw 2 = 141%	0.0 300.0 [%]	200.0[%] <1200Kw 141.0[%] >=1200Kw	8.6
P7.51	2		2 >=1200Kw 2 = 1.00s	0.00 5.00 [s]	5.00[s] <1200Kw 1.00[s] >=1200Kw	8.6
P7.55		[0] [1]		0 1	0	
P7.56				0.0 200.0 [%]	120.0 [%]	
P7.57				0.0 12.0 [s]	5 [s]	
P7.59		[0] [1]		0 1	1	
P7.60				0.10 3.00 [s]	0.30 [s]	

P7.64		[0] [1]	0 1	0	8.6
P7.65			-25 100 [V]	0 [V]	8.6
P7.66			-25 100 [V]	0 [V]	8.6
P7.69		[0] [1]	0 1	0	8.6
P7.70			-25 100 [V]	0 [V]	8.6
P7.73		[0] [1]	0 1	0	
P7.74			400 750 [V]	550 [V]	
P7.75			0.0 1000.0 [%]	100.0 [%]	
P7.76			0.00 300.00 [s]	1.00 [s]	
P7.77			0.0 200.0 [%]	15.0 [%]	
P7.94		[0] [1]	0 1	1	
P7.95		AFE	0.0 3000.0 [s]	15.0 [s]	
P7.96			0.00 300.00 [s]	0.00 [s]	

7.7 1 P8

P8.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P8.1					
P8.2					
P8.3		[0] [1]	0 1	0	8.7
P8.6			0.00 300.00 [s]	0.00 [s]	8.7
P8.7			0.00 300.00 [s]	0.00 [s]	8.7
P8.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P8.11					
P8.13		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	8.7
P8.14			0.1 10.0	1.0	8.7
P8.15	1		0.0 300.0 [%]	100.0 [%]	8.7
P8.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	8.7
P8.17	2		0.0 300.0 [%]	200.0 [%]	8.7

P8.18	2	P8.15	P8.17	0.0 [s]	300.0	4.00 [s]	.00

7.8 2 P9

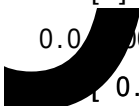
P9.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P9.1					
P9.2					
P9.3		[0] [1]	0 1	0	8.7
P9.6			0.00 300.00 [s]	0.00 [s]	8.7
P9.7			0.00 300.00 [s]	0.00 [s]	8.7
P9.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P9.11					
P9.13		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	8.7
P9.14			0.1 10.0	1.0	8.7
P9.15	1		0.0 300.0 [%]	100.0 [%]	8.7
P9.16	1	P9.15	0.0 300.0 [s]	3.00 [s]	8.7
P9.17	2		0.0 300.0 [%]	200.0 [%]	8.7

7.9 3 P10

P10.0		[0] [1] [2]DP [3]MODBUS [4]	0	4	0
P10.1					
P10.2					
P10.3		[0] [1]	0	1	0
P10.6			0.00 [s]	300.00	0.00 [s]
P10.7			0.00 [s]	300.00	0.00 [s]

63

P10.18	2	P10.15	P10.17	0.0	300.0 [s]	4.00 [s]	8.7
P10.19	3			0.0	0.0		



P10.37	2	P10.34 P10.36	0.0 300.0 [s]	4.00 [s]	8.7
P10.38	3		0.0 300.0 [%]	240.0 [%]	8.7
P10.39	3	P10.36 P10.38	0.0 300.0 [s]	7.00 [s]	8.7
P10.40	4		0.0 300.0 [%]	300.0 [%]	8.7
P10.41	4	P10.38 P10.40	0.0 300.0 [s]	10.00 [s]	8.7
P10.42	5		0.0 300.0 [%]	300.0 [%]	8.7
P10.43	5	P10.40 P10.42	0.0 300.0 [s]	10.00 [s]	8.7
P10.44	6		0.0 300.0 [%]	300.0 [%]	8.7
P10.45	6	P10.42 P10.44	0.0 300.0 [s]	10.00 [s]	8.7
P10.46	7		0.0 300.0 [%]	300.0 [%]	8.7
P10.47	7	P10.44 P10.46	0.0 300.0 [s]	10.00 [s]	8.7
P10.48	8		0.0 300.0 [%]	300.0 [%]	8.7
P10.49	8	P10.46 P10.48	0.0 300.0 [s]	10.00 [s]	8.7
P10.54			0.0 300.0 [%]	0.0 [%]	
P10.55		[0] [1]	0 1	0	
P10.56			0.00 300.00 [s]	3.00 [s]	
P10.57		[0] [1]	0 1	1	
P10.58			0.00 300.00 [s]	1.50 [s]	

7.10 4 P11

P11.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P11.1					
P11.2					
P11.3		[0] [1]	0 1	0	8.7
P11.6			0.00 300.00 [s]	0.00 [s]	8.7
P11.7			0.00 300.00 [s]	0.00 [s]	8.7
P11.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P11.11					
P11.13		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	8.7
P11.14			0.1 10.0	1.0	8.7
P11.15	1		0.0 300.0 [%]	100.0 [%]	8.7
P11.16	1	P11.15	0.0 300.0 [s]	3.00 [s]	8.7
P11.17	2		0.0 300.0 [%]	200.0 [%]	8.7

P11.37	2	P11.34 P11.36	0.0 300.0 [s]	4.00 [s]	8.7
P11.38	3		0.0 300.0 [%]	240.0 [%]	8.7
P11.39	3	P11.36 P11.38	0.0 300.0 [s]	7.00 [s]	8.7
P11.40	4		0.0 300.0 [%]	300.0 [%]	8.7
P11.41	4	P11.38 P11.40	0.0 300.0 [s]	10.00 [s]	8.7
P11.42	5		0.0 300.0 [%]	300.0 [%]	8.7
P11.43	5	P11.40 P11.42	0.0 300.0 [s]	10.00 [s]	8.7
P11.44	6		0.0 300.0 [%]	300.0 [%]	8.7
P11.45	6	P11.42 P11.44	0.0 300.0 [s]	10.00 [s]	8.7
P11.46	7		0.0 300.0 [%]	300.0 [%]	8.7
P11.47	7	P11.44 P11.46	0.0 300.0 [s]	10.00 [s]	8.7
P11.48	8		0.0 300.0 [%]	300.0 [%]	8.7
P11.49	8	P11.46 P11.48	0.0 300.0 [s]	10.00 [s]	8.7
P11.54			0.0 300.0 [%]	0.0 [%]	
P11.55		[0] [1]	0 1	0	
P11.56			0.00 300.00 [s]	3.00 [s]	
P11.57		[0] [1]	0 1	1	
P11.58			0.00 300.00 [s]	1.50 [s]	

7.11 1 P12

P12.0		[0] [1]	0	1	1	8.8
P12.1		[0][%] [1][Hz] [2][rpm]	0	2	1	
P12.2	1		0.0	3000.0	10.0	
P12.3	2		0.0	3000.0	20.0	
P12.4						

P12.27			0.00 2.00 [s]	0.00 [s]	8.8
P12.28			0.00 2.00 [s]	0.07 [s]	8.8
P12.29			0.00 2.00 [s]	0.07 [s]	8.8
P12.32			0.0 20.0 [%]	0.0 [%]	8.8
P12.33			0.0 20.0 [%]	0.0 [%]	8.8
P12.34			0.00 2.00 [s]	0.00 [s]	8.8
P12.35			0.00 2.00 [s]	0.00 [s]	8.8
P12.36			0.00 2.00 [s]	0.50 [s]	8.8
P12.37			0.00 2.00 [s]	0.50 [s]	8.8

7.12 2 P13

P13.0		[0] [1]	0 1	1	8.8
P13.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P13.2	1		0.0 3000.0	10.0	
P13.3	2		0.0 3000.0	20.0	
P13.4	3		0.0 3000.0	35.0	
P13.5	4		0.0 3000.0	50.0	
P13.6	5		0.0 3000.0	50.0	
P13.7	6		0.0 3000.0	50.0	
P13.8	7		0.0 3000.0	50.0	
P13.9	8		0.0 3000.0	50.0	
P13.10	9		0.0 3000.0	50.0	

P13.11	10		0.0 3000.0	50.0	
P13.12	11		0.0 3000.0	50.0	
P13.13	12		0.0 3000.0	50.0	
P13.14	13		0.0 3000.0	50.0	
P13.15	14		0.0 3000.0	50.0	
P13.16	15		0.0 3000.0	50.0	
P13.17	16		0.0 3000.0	50.0	
P13.22			0.0 20.0 [%]	2.0 [%]	8.8
P13.23			0.0 20.0 [%]	0.0 [%]	8.8
P13.24			0.0 200.0 [%]	30.0 [%]	8.8
P13.25			0.0 200.0 [%]	20.0 [%]	8.8
P13.26			0.00 2.00 [s]	0.00 [s]	8.8
P13.27			0.00 2.00 [s]	0.00 [s]	8.8
P13.28			0.00 2.00 [s]	0.07 [s]	8.8
P13.29			0.00 2.00 [s]	0.07 [s]	8.8
P13.32			0.0 20.0 [%]	0.0 [%]	8.8
P13.33			0.0 20.0 [%]	0.0 [%]	8.8
P13.34			0.00 2.00 [s]	0.00 [s]	8.8
P13.35			0.00 2.00 [s]	0.00 [s]	8.8
P13.36			0.00 2.00 [s]	0.50 [s]	8.8
P13.37			0.00 2.00 [s]	0.50 [s]	8.8

7.13 3 P14

P15.11	10		0.0 3000.0	50.0	
P15.12	11		0.0 3000.0	50.0	
P15.13	12		0.0 3000.0	50.0	
P15.14	13		0.0 3000.0	50.0	
P15.15	14		0.0 3000.0	50.0	
P15.16	15		0.0 3000.0	50.0	
P15.17	16		0.0 3000.0	50.0	
P15.22			0.0 20.0 [%]	2.0 [%]	8.8
P15.23			0.0 20.0 [%]	0.0 [%]	8.8
P15.24			0.0 200.0 [%]	30.0 [%]	8.8
P15.25			0.0 200.0 [%]	20.0 [%]	8.8
P15.26			0.00 2.00 [s]	0.00 [s]	8.8
P15.27			0.00 2.00 [s]	0.00 [s]	8.8
P15.28			0.00 2.00 [s]	0.07 [s]	8.8
P15.29			0.00 2.00 [s]	0.07 [s]	8.8
P15.32			0.0 20.0 [%]	0.0 [%]	8.8
P15.33			0.0 20.0 [%]	0.0 [%]	8.8
P15.34			0.00 2.00 [s]	0.00 [s]	8.8
P15.35			0.00 2.00 [s]	0.00 [s]	8.8
P15.36			0.00 2.00 [s]	0.50 [s]	8.8
P15.37			0.00 2.00 [s]	0.50 [s]	8.8

7.15 1 V/F P16

P16.0	560 760 690 [V] [V]	
P16.2	0.0 3000.0 [kW] [kW]	
P16.3		
ЬJ03		
	[K]	
	00	

P16.22			0.00 100.00 [s]	0.00 [s]	8.9
P16.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P16.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P16.25			0.0 120.0 [%]	100.0 [%]	
P16.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	8.9
P16.27			0.0 200.0 [%]	100.0 [%]	8.9
P16.30			0.0 100.0 [%]	0.0 [%]	8.9
P16.33	V/F	V/F	0 6	2	8.9
P16.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P16.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P16.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P16.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P16.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P16.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P16.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P16.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P16.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P16.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P16.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P16.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P16.46	V/F @		0 300	0	
P16.47	@		0 300	0	

P16.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P16.49	@		0 300	0	
P16.50			0.00 300.00 [s]	0.00 [s]	8.9
P16.51			0.0 150.0 [%]	70.0 [%]	8.9
P16.52			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P16.54			0.00 300.00 [s]	0.00 [s]	8.9
P16.55			0.0 150.0 [%]	75.0 [%]	8.9
P16.56			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P16.59			0.0 1000.0 [%]	100.0 [%]	
P16.60			0.0 1000.0 [%]	100.0 [%]	
P16.61			0.0 1000.0 [%]	100.0 [%]	
P16.62			0.0 1000.0 [%]	100.0 [%]	
P16.64	V/F	V/F	0.0 1000.0 [%]	100.0 [%]	8.9
P16.66		V/F	0.0 1000.0 [%]	100.0 [%]	
P16.67			0.0 1000.0 [%]	100.0 [%]	
P16.68			0.0 1000.0 [%]	100.0 [%]	
P16.69			0.0 1000.0 [%]	100.0 [%]	
P16.70			0.0 1000.0 [%]	100.0 [%]	

7.16 2 V/F P17

P17.0			560 760 [V]	690 [V]	
P17.2			0.0 3000.0 [kW]	 [kW]	
P17.3			0 700 [V]	690 [V]	
P17.4			0.0 3000.0 [A]	 [A]	
P17.5			0.0 300.0 [Hz]	50.0 [Hz]	
P17.6			0 6000 [rpm]	1465 [rpm]	
P17.7			2 12 [pole]	4 [pole]	8.9
P17.9			0 7200 [rpm]	1500 [rpm]	8.9
P17.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P17.12			1.00 10.00 [kHz]	3.00 [kHz]	8.9
P17.14	V/F	[0] V/F [1] V/F [2]	0 3	0	8.9
P17.15		[0] [1]	0 1	0	8.9
P17.16			2 500 [ms]	500 [ms]	
P17.17	V/F	[0] [1]	0 1	0	
P17.18			10 1000 [ms]	200 [ms]	
P17.19		[0] [1]	0 1	0	

P17.22		0.00 100.00 [s]	0.00 [s]	8.9
P17.23	V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P17.24	V/F	0.00 P00.00 [Hz]	[Hz]	
P17.25		0.0 P20.0 [%]	[%]	
P17.26 V/F	V/F	0.00 P0.00 [%]	0.75 [%]	8.9
P17.27		0.0 P00.0 [%]	100.0 [%]	8.9
P17.30		0.0 P00.0 [%]		

P17.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P17.49	@		0 300	0	
P17.50			0.00 300.00 [s]	0.00 [s]	8.9
P17.51			0.0 150.0 [%]	70.0 [%]	8.9
P17.52			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P17.54			0.00 300.00 [s]	0.00 [s]	8.9
P17.55			0.0 150.0 [%]	75.0 [%]	8.9
P17.56					

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P18.22		0.00 100.00 [s]	0.00 [s]	8.9
P18.23	V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P18.24	V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P18.25				

P18.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P18.49	@		0 300	0	
P18.50			0.00 300.00 [s]	0.00 [s]	8.9
P18.51			0.0 150.0 [%]	70.0 [%]	8.9
P18.52			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P18.54			0.00 300.00 [s]	0.00 [s]	8.9
P18.55			0.0 150.0 [%]	75.0 [%]	8.9
P18.56			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P18.59			0.0 1000.0 [%]	100.0 [%]	
P18.60			0.0 1000.0 [%]	100.0 [%]	
P18.61			0.0 1000.0 [%]	100.0 [%]	
P18.62			0.0 1000.0 [%]	100.0 [%]	
P18.64	V/F	V/F	0.0 1000.0 [%]	100.0 [%]	8.9
P18.66		V/F	0.0 1000.0 [%]	100.0 [%]	
P18.67			0.0 1000.0 [%]	100.0 [%]	
P18.68			0.0 1000.0 [%]	100.0 [%]	
P18.69			0.0 1000.0 [%]	100.0 [%]	
P18.70			0.0 1000.0 [%]	100.0 [%]	

7.18 4 V/F P19

P19.0		560 760 [V]	690 [V]	
P19.2		0.0 3000.0 [kW]	 [kW]	
P19.3		0 700 [V]	690 [V]	
P19.4		0.0 3000.0 [A]	 [A]	
P19.5	[ ]	0.0 300.0 [Hz]	50.0 [Hz]	
P19.6		0 6000 [rpm]	1465 [rpm]	
P19.7		2 12 [pole]	4 [pole]	8.9
P19.9		0 7200 [rpm]	1500 [rpm]	8.9
P19.11	[0]V/F [1] [2] [3] [4]	0 4	0	
P19.12		1.00 10.00 [kHz]	3.00 [kHz]	8.9
P19.14 V/F	[0] V/F [1] V/F [2]	0 3	0	8.9
P19.15				

P19.22			0.00 100.00 [s]	0.00 [s]	8.9
P19.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P19.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P19.25			0.0 120.0 [%]	100.0 [%]	
P19.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	8.9
P19.27			0.0 200.0 [%]	100.0 [%]	8.9
P19.30			0.0 100.0 [%]	0.0 [%]	8.9
P19.33	V/F	V/F	0 6	2	8.9
P19.34	V/F	1	0.0 300.0 [Hz]	5.0 [Hz]	00
P19.35	V/F	1	0.0 125.		

P19.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P19.49	@		0 300	0	
P19.50			0.00 300.00 [s]	0.00 [s]	8.9
P19.51			0.0 150.0 [%]	70.0 [%]	8.9
P19.52			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P19.54			0.00 300.00 [s]	0.00 [s]	8.9
P19.55			0.0 150.0 [%]	75.0 [%]	8.9
P19.56			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P19.59			0.0 1000.0 [%]	100.0 [%]	
P19.60		א	0.0 1000.0 [%]	100.0 [%]	
P19.61	א				

P20.13			20.0 500.0 [ms]	100.0 [ms]	8.10
P20.14		1	0 60000	1024	
P20.15		[0] [1]	0 1	0	8.10
P20.16			0.0 300.0 [%]	100.0 [%]	
P20.17			0.0 300.0 [%]	100.0 [%]	
P20.18			0.0 300.0 [%]	0.0 [%]	
P20.19			0.0 300.0 [%]	0.0 [%]	
P20.20		[0] [1]	0 1	0	
P20.21		[0] [1]	0 1	0	
P20.22			0.0 300.0 [%]	160.0 [%]	
P20.23			0.0 200.0 [%]	20.0 [%]	
P20.24			0.0 300.0 [%]	100.0 [%]	
P20.25			0.0 200.0 [%]	100.0 [%]	
P20.26			0.0 1000.0 [%]	0.0 [%]	8.10
P20.27			0.00 15.00 [%]	2.00 [%]	8.10
P20.28		[0] P20.16 P20.17 [1] [2] [3]DP	0 3	0	
P20.30		[0] P20.31 P20.32 [1] 1 [2] 2 [3]	0 3	0	

P20.77	2	2	90.0 110.0 100.0 [%] [%]
P20.78			0.00 65-] ژخه

7.20 2 P21

P21.0		[0] [1]	0 1	0	8.10
P21.1		[0] [1] 1 [2] 2 [3] [4] P21.3 [5]DP [6]MODBUS [7]	0 7	0	8.10
P21.2			0 7	0	
P21.3			-300.0 300.0 [%]	0.0 [%]	8.10
P21.4	@		0 300	0	
P21.5			0 1000 [ms]	0 [ms]	
P21.6			0.0 200.0 [%]	100.0 [%]	8.10
P21.7		[0] [1] P21.8 P21.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	8.10
P21.8		P21.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P21.9		P21.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P21.10			0 300	0	
P21.11			0 1000 [ms]	0 [ms]	
P21.13			20.0 500.0 [ms]	100.0 [ms]	8.10

P21.14 ⊥

P21.32		0.0 [%]	100.0 [%]	5.0 [%]	
P21.34	[0] [1]	0	1	0	8.10
P21.35		0.0 [s]	100.0 [s]	0.0 [s]	
P21.36		50.0 [%]	150.0 [%]	110.0 [%]	
P21.37		0.0 [%]	150.0 [%]	100.0 [%]	8.10
P21.38		0.0 [%]	100.0 [%]	25.0 [%]	8.10
P21.39		0.0 [%]	120.0 [%]	100.0 [%]	8.10
P21.40		0.0 [%]	150.0 [%]	100.0 [%]	8.10
P21.41		0.0 [%]	150.0 [%]	135.0 [%]	
P21.42	[0] [1]	0	1]	1	
P21.43		25 [ms]	1000 [ms]	75 [ms]	
P21.44					

P21.54	Ki				0.0 1000.0 [%]	100.0 [%]	
P21.55					0.0 1000.0 [%]	100.0 [%]	8.10
P21.56					0.0 1000.0 [%]	100.0 [%]	8.10
P21.57		[0] [1]			0 1	0	8.10
P21.58					0.0 125.0 [%]	100.0 [%]	8.10
P21.59					1.0 25.0 [%]	2.5 [%]	8.10
P21.60	DROOP		0	DROOP	0.0 100.0 [%]	0.0 [%]	8.10
P21.61	DROOP		DROOP		30 2000 [ms]	50 [ms]	8.10
P21.62					0.0 1000.0 [%]	100.0 [%]	8.10
P21.63					0.0 1000.0 [%]	100.0 [%]	8.10
P21.66		1		1	0.0 1000.0 [%]	100.0 [%]	
P21.67		2		2			

P21.78				0.00 [mOhm]	650.00 [mOhm]	0.00 [mOhm]
P21.79				0.00 [mH]	65.50 [mH]	0.000 [mH]
P21.80	1		1	0.800	1.350	1.140
P21.81	2		2	0.800	1.350	0.940
P21.82	3		3	0.800	1.350	1.080
P21.83	4		4	0.800	1.350	0.950
P21.84				0.00 [mH]	655.00 [mH]	0.00 [mH]
P21.85		85%	85%	40.0 [%]	150.0 [%]	108.0 [%]
P21.86		87.5%	87.5%	40.0 [%]	150.0 [%]	106.5 [%]
P21.87		90%	90%	40.0 [%]	150.0 [%]	105.0 [%]
P21.88		92.5%	92.5%	40.0 [%]	150.0 [%]	103.5 [%]
P21.89		95%	95%	40.0 [%]	150.0 [%]	102.0 [%]
P21.90		102.5%	102.5%	40.0 [%]	150.0 [%]	99.0 [%]
P21.91		105%	105%	40.0 [%]	150.0 [%]	96.5 [%]
P21.92		110%	110%	40.0 [%]	-50.0 [%]	

7.21 3 P22

P22.0		[0] [1]			0 1	0	8.10
P22.1		[0] [1] [2] [3] [4] [5]DP [6]MODBUS [7]	1 2	P22.3	0 7	0	8.10
P22.2					0 7	0	
P22.3					-300.0 300.0 [%]	0.0 [%]	8.10
P22.4	@				0 300	0	
P22.5					0 1000 [ms]	0 [ms]	
P22.6					0.0 200.0 [%]	100.0 [%]	8.10
P22.7		[0] [1] P22.9 [2] [3] [4] [5]DP [6]MODBUS [7]	P22.8 1 2		0 7	0	8.10
P22.8		P22.7	[1]		0.0 300.0 [%]	200.0 [%]	8.10
P22.9		P22.7	[1]		0.0 300.0 [%]	200.0 [%]	8.10
P22.10					0 300	0	
P22.11					0 1000 [ms]	0 [ms]	

P22.13		20.0 50

P22.53	Kp		0.0 1000.0 [%]	100.0 [%]	
P22.54	Ki		0.0 1000.0 [%]	100.0 [%]	
P22.55			0.0 1000.0 [%]	100.0 [%]	8.10
P22.56			0.0 1000.0 [%]	100.0 [%]	8.10
P22.57		[0] [1]	0 1	0	8.10
P22.58			0.0 125.0 [%]	100.0 [%]	8.10
P22.59			1.0 25.0 [%]	2.5 [%]	8.10
P22.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	8.10
P22.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	8.10
P22.62			0.0 1000.0 [%]	100.0 [%]	8.10
P22.63			0.0 1000.0 [%]	100.0 [%]	8.10
P22.66	1	1	0.0 1000.0 [%]	100.0 [%]	
P22.67	2	2	0.0 1000.0 [%]	100.0 [%]	
P22.69			0.00 2.00 [%]	1.00 [%]	
P22.70			0.00 2.00 [%]	1.00 [%]	
P22.71		[0] [1]	0 1	0	
P22.72		[0] [1]	0 1	1	
P22.73		[0] × 1 [1] × 10	0 1	0	
P22.74			0.00 650.00 [mOhm]	0.00 [mOhm]	
P22.75			0.70 1.00	0.90	
P22.76	1	1	90.0 110.0 [%]	100.0 [%]	

P22.77	2	2	90.0 110.0 [%]	100.0 [%]	
P22.78			0.00 650.00 [mOhm]	0.00 [mOhm]	
P22.79			0.00 65.50 [mH]	0.000 [mH]	
P22.80	1	1	0.800 1.350	1.140	
P22.81	2	2	0.800 1.350	0.940	
P22.82	3	3	0.800 1.350	1.080	
P22.83	4	4	0.800 1.350	0.950	
P22.84			0.00 655.00 [mH]	0.00 [mH]	
P22.85	85%	85%	40.0 150.0 [%]	108.0 [%]	
P22.86	87.5%	87.5%	40.0 150.0 [%]	106.5 [%]	
P22.87	90%	90%	40.0 150.0 [%]	105.0 [%]	
P22.88	92.5%	92.5%	40.0 150.0 [%]	103.5 [%]	
P22.89	95%	95%	40.0 150.0 [%]	102.0 [%]	
P22.90	102. 5%	102.5%	40.0 150.0 [%]	99.0 [%]	
P22.91	105%	105%	40.0 150.0 [%]	96.5 [%]	
P22.92	110%	110%	40.0 150.0 [%]	93.0 [%]	
P22.93	115%	115%	40.0 150.0 [%]	88.5 [%]	
P22.94	120%	120%	40.0 150.0 [%]	83.0 [%]	
P22.95	125%	125%	40.0 150.0 [%]	77.0 [%]	
P22.96	130%	130%	40.0 150.0 [%]	70.5 [%]	
P22.97	135%	135%	40.0 150.0 [%]	63.5 [%]	
P22.98		( )	0.01 300.00 [s]	0.75 [s]	
P22.99			0.00 10.00 [%]	0.00 [%]	

7.22 4 P23

P23.0		[0] [1]			0 1	0	8.10
P23.1		[0] [1] [2] [3] [4] [5]DP [6]MODBUS [7]	1 2	P23.3	0 7	0	8.10
P23.2					0 7	0	
P23.3					-300.0 300.0 [%]	0.0 [%]	8.10
P23.4	@				0 300	0	
P23.5					0 1000 [ms]	0 [ms]	
P23.6					0.0 200.0 [%]	100.0 [%]	8.10
P23.7		[0] [1] P23.9 [2] [3]	1	P23.8			

P23.13			20.0 500.0 [ms]	100.0 [ms]	8.10
P23.14		1	0 60000	1024	
P23.15	[0] [1]		0 1	0	8.10
P23.16			0.0 300.0 [%]	100.0 [%]	
P23.17			0.0 300.0 [%]	100.0 [%]	
P23.18			0.0 300.0 [%]	0.0 [%]	
P23.19			0.0 300.0 [%]	0.0 [%]	
P23.20					

P23.31			0.0 100.0 [%]	5.0 [%]	
P23.32			0.0 100.0 [%]	5.0 [%]	
P23.34		[0] [1]	0 1	0	8.10
P23.35			0.0 100.0 [s]	0.0 [s]	
P23.36			50.0 150.0 [%]	110.0 [%]	
P23.37			0.0 150.0 [%]	100.0 [%]	8.10
P23.38			0.0 100.0 [%]	25.0 [%]	8.10
P23.39			0.0 120.0 [%]	100.0 [%]	8.10
P23.40			0.0 150.0 [%]	100.0 [%]	8.10
P23.41			0.0 150.0 [%]	135.0 [%]	
P23.42		[0] [1]	0 1	1	
P23.43			25 1000 [ms]	75 [ms]	
P23.44			25 1000 [ms]	250 [ms]	
P23.45			0.0 100.0 [%]	22.0 [%]	
P23.46			0.0 100.0 [%]	18.0 [%]	
P23.47			0.0 200.0 [%]	92.0 [%]	
P23.48			0.0 200.0 [%]	87.0 [%]	
P23.49			0.0 150.0 [%]	100.0 [%]	
P23.51			0.0 1000.0 [%]	100.0 [%]	
P23.52			0.0 1000.0 [%]	100.0 [%]	

P23.53	Kp			0.0 [%]	100.0 [%]	
P23.54	Ki			0.0 [%]	100.0 [%]	
P23.55				1000.0 [%]	100.0 [%]	8.10
P23.56				0.0 [%]	1000.0 [%]	100.0 [%]	8.10
P23.57		[0] [1]		0	1	0	8.10
P23.58				0.0 [%]	125.0 [%]	100.0 [%]	8.10
P23.59				1.0 [%]	25.0 [%]	2.5 [%]	8.10
P23.60	DROOP	0	DROOP	0.0 [%]	100.0 [%]	0.0 [%]	8.10
P23.61	DROOP	DROOP		30 [ms]	2000 [ms]	50 [ms]	8.10
P23.62				0.0 [%]	1000.0 [%]	100.0 [%]	8.10
P23.63				0.0 [%]	1000.0 [%]	100.0 [%]	8.10
P23.66		1	1	0.0 [%]	1000.0 [%]	100.0 [%]	
P23.67		2	2	0.0 [%]	1000.0 [%]		

7.23 P33

P33.0	Profibus	[0] [1]	0 1	0	
P33.1		PLC	1 255	1	
P33.2		[0]PPO 1 [1]PPO 2 [2]PPO 5 [3]GUIDE	0 3	2	
P33.3			0 16	14	
P33.4			0 16	14	
P33.5		[0] [1] [2] [3]	0 3	0	
P33.6			0 1000 [ms]	50 [ms]	
P33.7		[0] [1]	0 1	0	
P33.8			0.0 10.0 [s]	3.0 [s]	
P33.13	[W0]	7-2	0 37	0	
P33.14	[W0]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.15	[W1]	7-2	0 37	0	
P33.16	[W1]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.17	[W2]	7-2	0 37	0	

P33.18	[W2]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0	4	0
P33.19	[W2]	7-2	0	37	0

P33.20

b33S0

P33.31

P33.44	[W15]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.45	[W0]	7-3	0 48	0	
P33.46	[W0]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.47	[W1]	7-3	0 48	0	
P33.48	[W1]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.49	[W2]	7-3	0 48	0	
P33.50	[W2]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.51	[W3]	7-3	0 48	0	
P33.52	[W3]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.53	[W4]	7-3	0 48	1	

P33.54	[W4]		[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0
P33.55		[W5]	7-3	0 48	19
P33.56	[W5]		[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	2
P33.57		[W6]	7-3	0 48	26
P33.58	[W6]		[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	6
P33.59		[W7]	7-3	0 48	30
P33.60	[W7]		[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	1
P33.61					

P33.62	[W8]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0	7	0
P33.63		[W9] 7-3	0	48	13
P33.64	[W9]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0	7	0
P33.65		[W10] 7-3	0	48	40
P33.66	[W10]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0	7	6
P33.67		[W11] 7-3	0	48	0
P33.68	[W11]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0	7	0
P33.69		[W12] 7-3	0	48	0

P33.70	[W12]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.71	[W13]	7-3	0 48	0	
P33.72	[W13]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.73	[W14]	7-3	0 48	0	
P33.74	[W14]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.75	[W15]	7-3	0 48	0	
P33.76	[W15]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	

7-3

0	
1	0
2	1
3	2
4	3
5	4
6	5
7	0 @32bit
8	1 @32bit
9	2 @32bit
10	3 @32bit
11	4 @32bit
12	5 @32bit
13	[32]
14	[32]
15	32bit_MSW
16	32bit_LSW
17	
18	
19	
20	[rpm]
21	[rpm]
22	
23	
24	
25	
26	
27	A
28	B

29	C
30	
31	
32	
33	1
34	2
35	
36	
37	
38	
39	
40	
41 48	AW22 29

8.

8.1

800kW 1600kW 800kW

P2.0

8.2

P12.0 [0] [1]

A. [0]

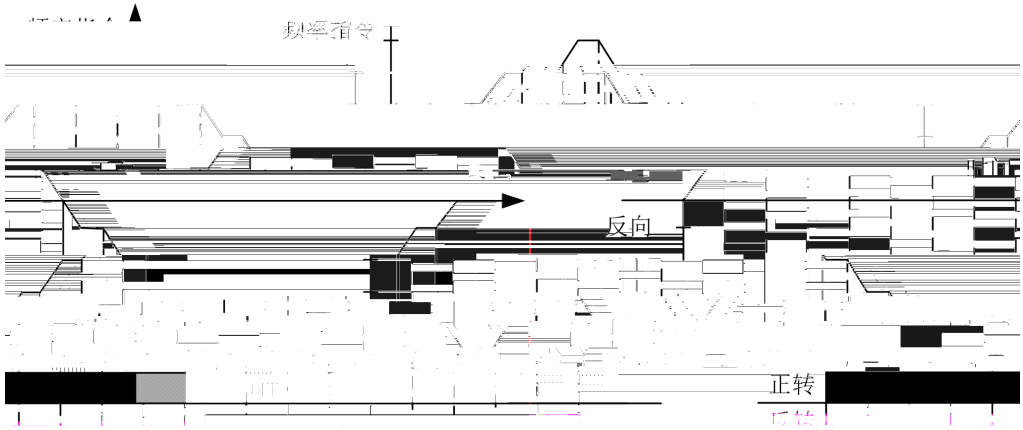
[1] [2] ---1

[6] 1 0 ---2

[7] 2 1 ---3

[8] 3 2 ---4

[9] 4 3 ---5



B. [1]

4 16 (8421)

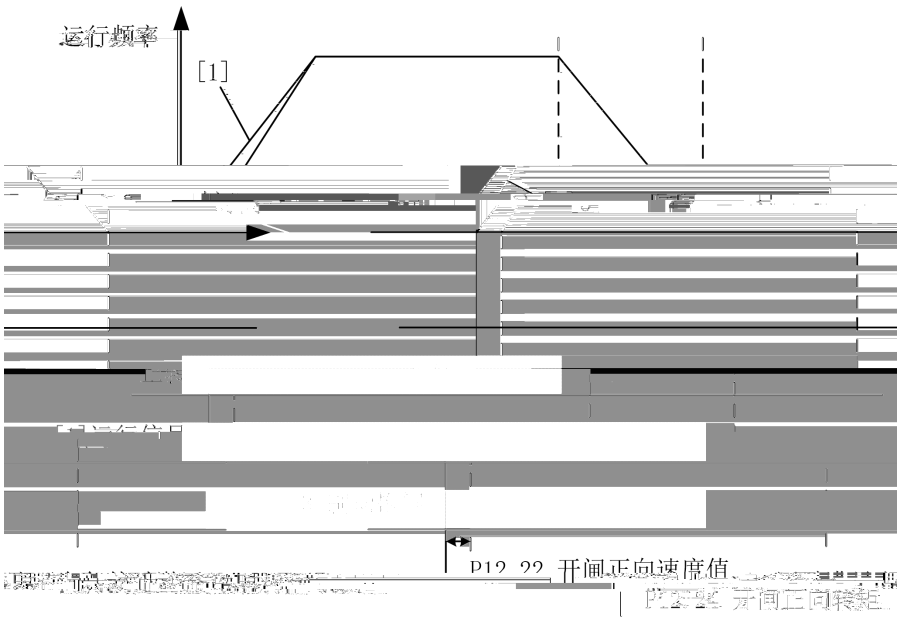
(FORWARD) (REVERSE) P12.2(1)

8.3

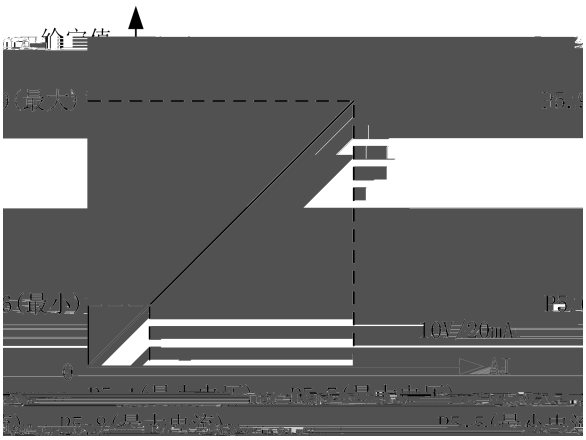
/

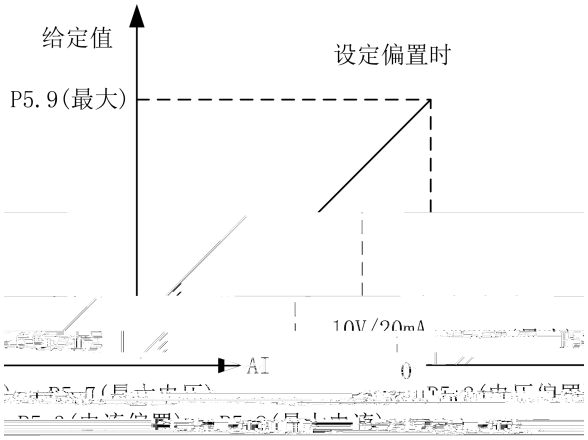
[1] [3] [3]

[1] [3]

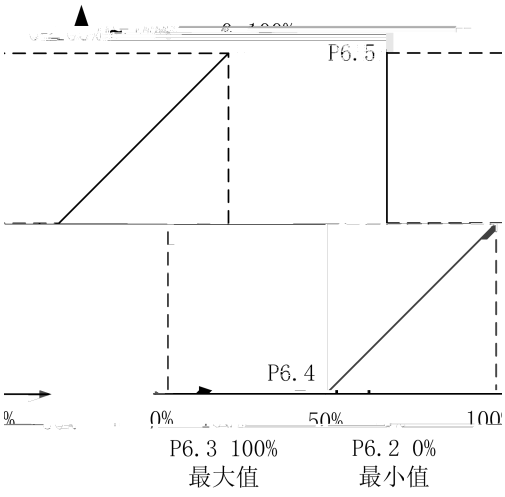


8.4

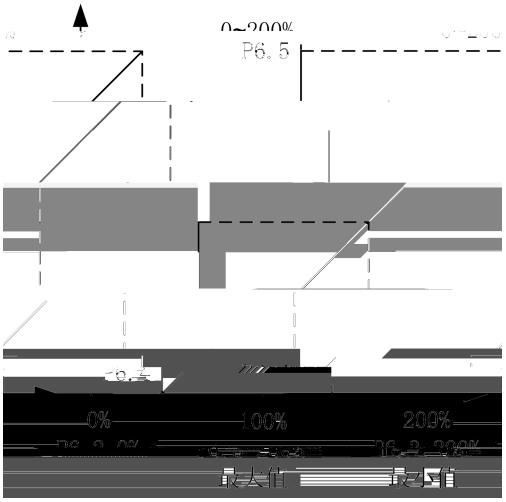




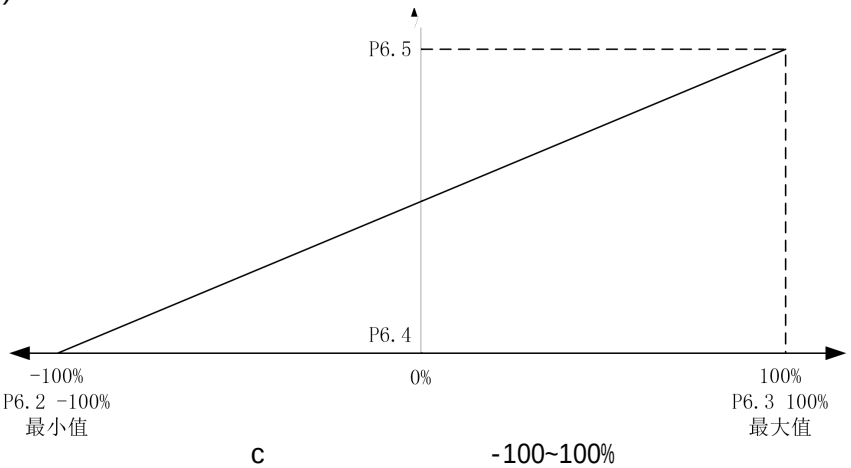
8.5



(a) 0~100%



b 0~200%



c -100~100%

7

P7.23 P16.11=1 P7.23

P7.23

P7.24 P7.26 P17.11=1 P18.11=1 P19.11=1

8

P7.31 P7.32 P16.11=2

P7.31 100% P7.32

P7.31 P7.32

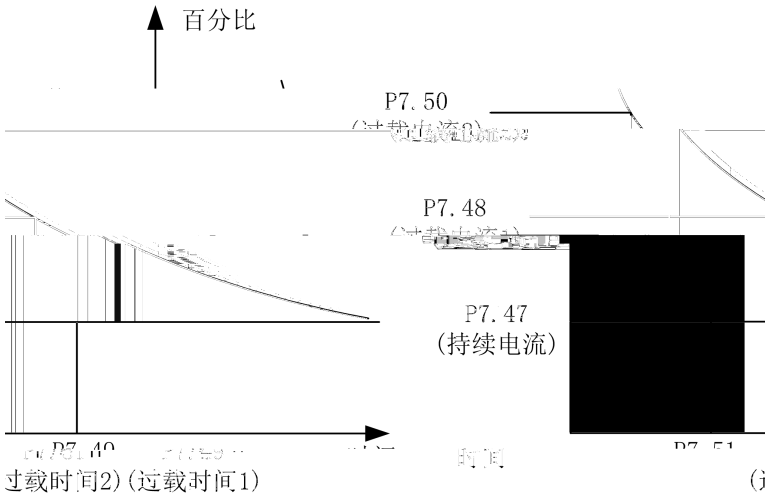
9

P7.33

P7.33

10

P7.48 P7.50



1. 1200kW 1200kW
2. 141% 10

11

P7.64 P7.65 P7.66 HF680NLC

30kW P7.64 1

P7.65

P7.66

P16.66≥P16.65 P16.0 690V P7.65 0V 1068V

P7.66 20V 1088V

$= 1.075 \sqrt{2}$ P16.0 20 P7.65

$= 1.075 \sqrt{2}$ P16.0 20 P7.66

12

P7.69 P7.70 P7.69 0

P16.0 690V P7.70 0V

1093V $= 1.1 \sqrt{2}$ P16.0 20 P7.70

8.7

1

1.1 1

P16.11	Basic Control Function	0: V/F 1: 2: 3: 4:	0 V/F
P16.57	Flying Start CL	0-100%	75%
P16.58	Flying Start Mode	0: FWD 1: REV 2: REV-FWD 3: FWD-REV	0:FWD
P16.71	Flying Start IsFlt	0-500.0ms	0.0ms
P16.72	Flying Start FeType	0: 1 1: 2	0: 1
P16.73	Flying Start FeAdjE	0: 1:	1:
1. DI 21 2. P8.06 [ ] = 5.0 3.P16.11 0 V/F 4. P16.58 2 3 5. P16.71 6.P16.72 0 P16.73 1			

1.2 2

P17.11	Basic Control Function	0: V/F 1: 2: 3: 4:	0 V/F
P17.57	Flying Start CL	0-100%	75%
P17.58	Flying Start Mode	0: FWD 1: REV 2: REV-FWD 3: FWD-REV	0:FWD
P17.71	Flying Start IsFlt	0-500.0ms	0.0ms
P17.72	Flying Start FeType	0: 1 1: 2	0: 1
P17.73	Flying Start FeAdjE	0: 1:	1:

1. DI 21
2. P8.06 [ ] = 5.0
3.P17.11 0 V/F
4. P17.58 غ ً

1.4 4

P19.11	Basic Control Function	0: V/F 1: 2: 3: 4:	0 V/F
P19.57	Flying Start CL	0-100%	75%
P19.58	Flying Start Mode	0: FWD 1: REV 2: REV-FWD 3: FWD-REV	0:FWD
P19.71	Flying Start IsFlt	0-500.0ms	0.0ms
P19.72	Flying Start FeType	0: 1 1: 2	0: 1
P19.73	Flying Start FeAdjE	0: 1:	1:

1. DI 21
2. P8.06 [ ] = 5.0
3.P19.11 0 V/F
4. P19.58
2 3
5. P19.71

6.P19.72 0 P19.73 1

2

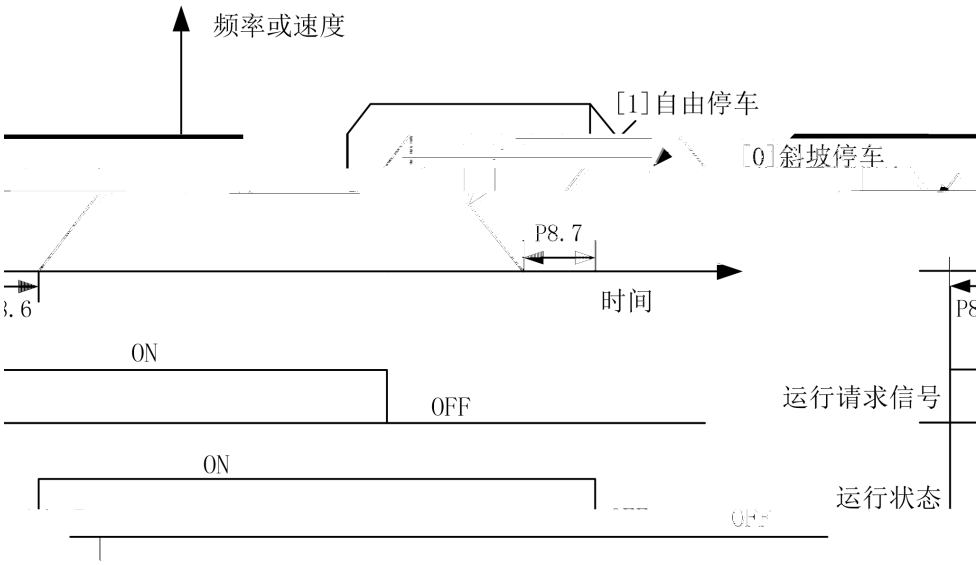
P8.3

[0]

[1]

P8.6 P8.6

P8.7

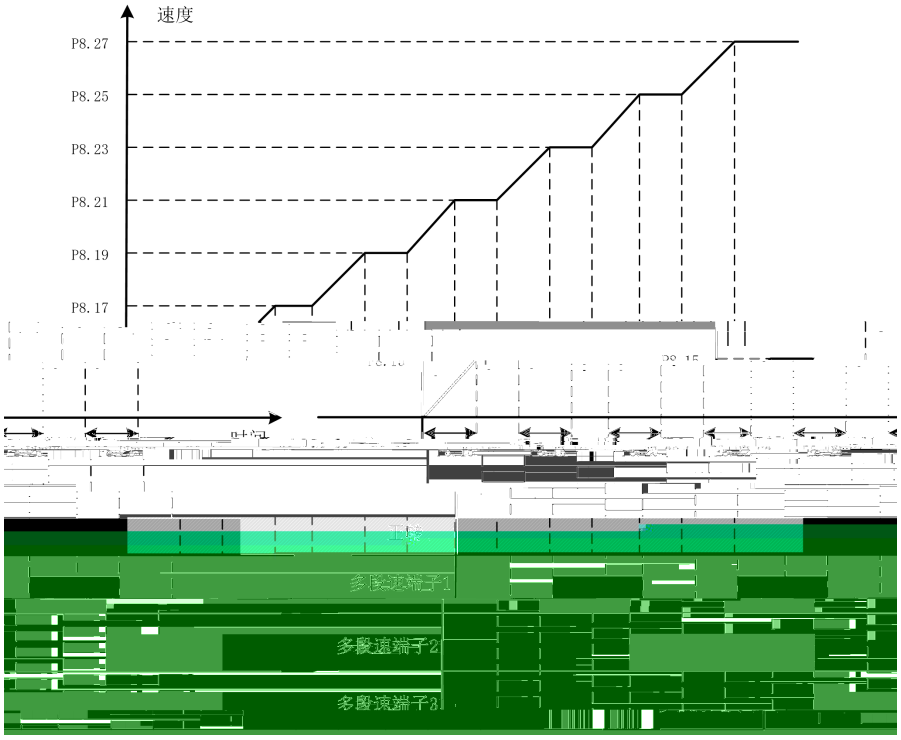


3

P8.14

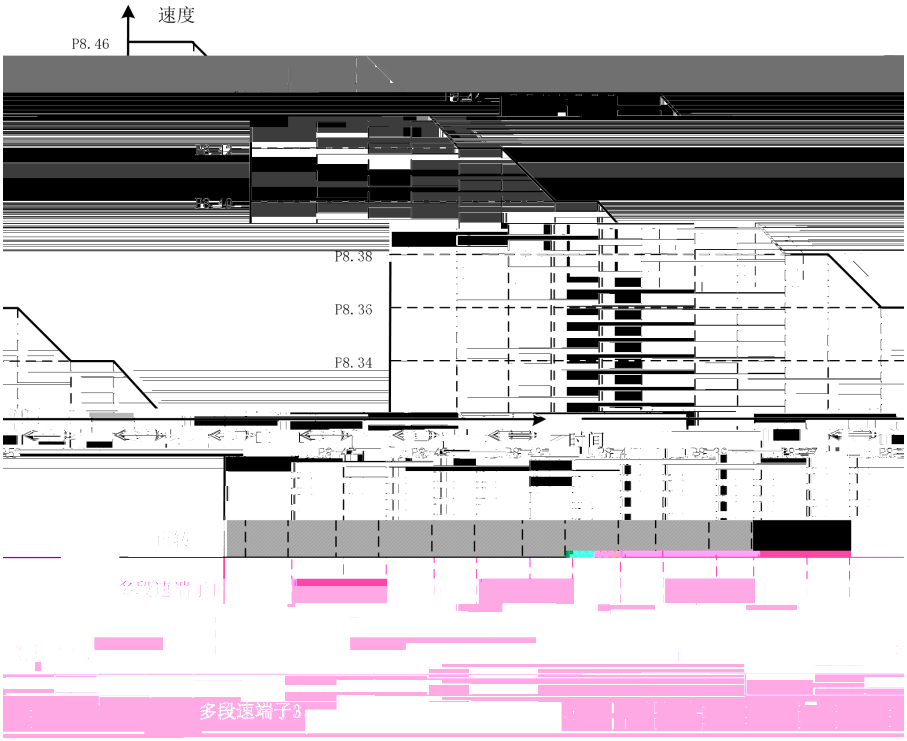
P8.14 P8.33

P8.33



P8.15 < P8.17 < P8.19 < P8.21 < P8.23 < P8.25 < P8.27

P8.15	P8.17	P8.19	P8.21	P8.23	P8.25	P8.27
10%	20%	30%	50%	60%	80%	100%



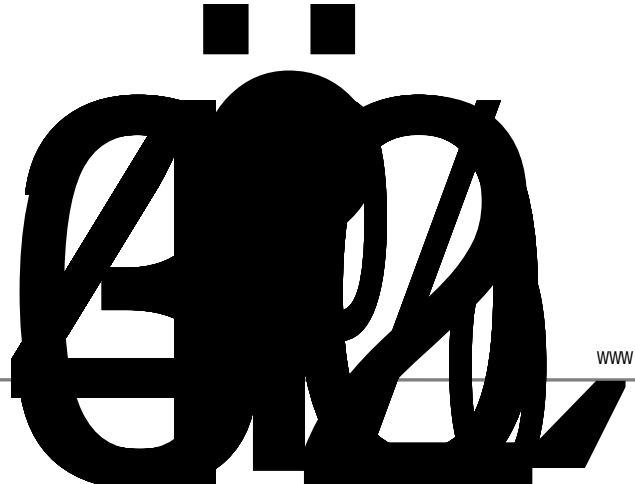
P8.3 36 38 < 4 P8. < 46

		P8.38		P8.42		P8.46
10%	20%	30%	50%	60%	80%	100%

4

PROFIBUS MODBUS

P8



2

P12.22 P12.37

[3]

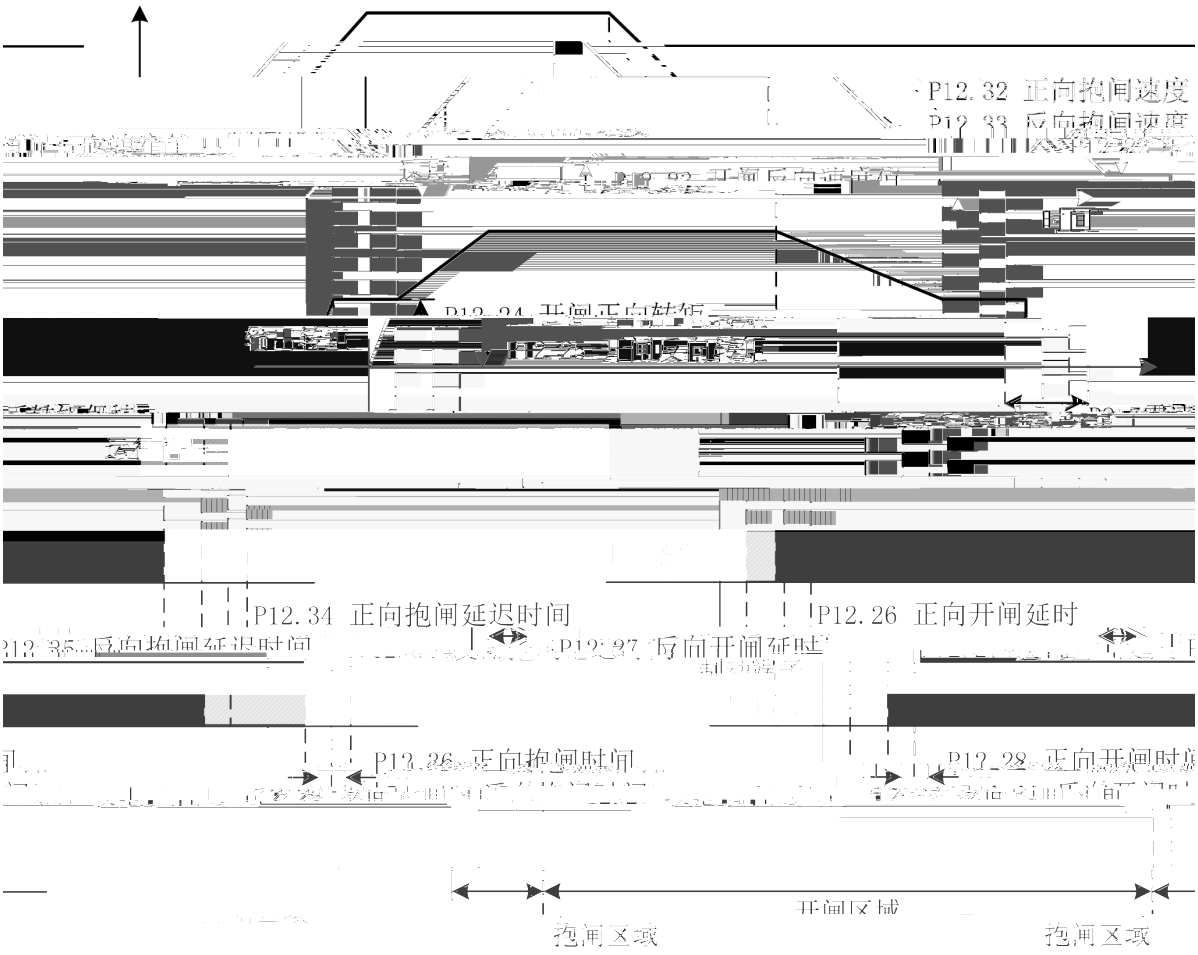
P12.22 P12.23 P12.24 P12.25

P12.32[ ] P12.33[ ]

P12.28 P12.29

P12.36 P12.37

P16



P16.34 P16.45 V/F V/F

V1 V2 V3 F1 F2 F3

4

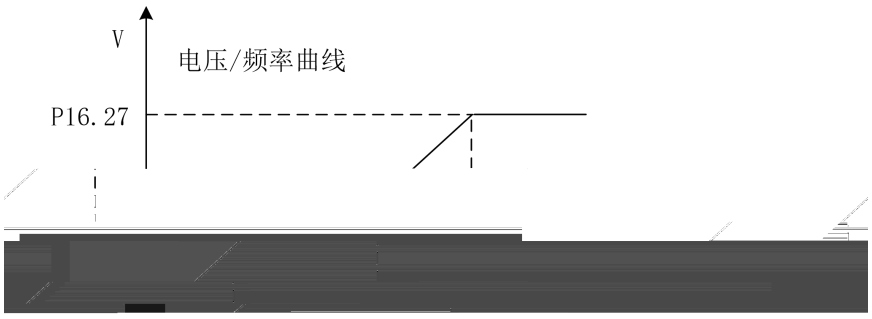
P16.15 V/F

V/F

5

P16.14=[0] V/F V/F P16.26 P16.26

P16.27



P16.14=[2] V/F P16.30

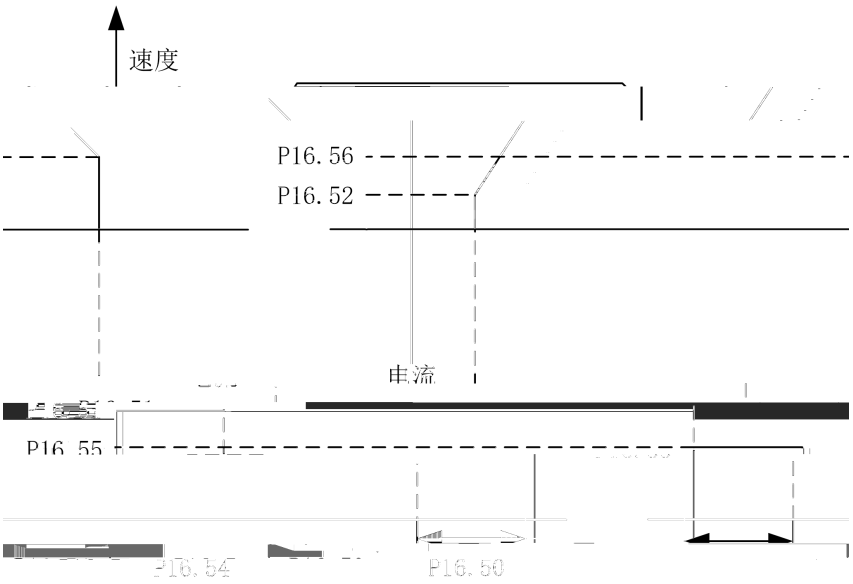
6

P16.50 P16.56

V/F

P16.50 P16.51 P16.52

P16.54 P16.55 P16.56



7

P16.64

8.10

1

P20.0

P20.0=0 P20.1=0 P20.2=0

P20.0=0 P20.1≠0 P20.2≠0

P20.0=1 P20.1≠0 P20.2≠0 1

0

P16.11 [1] [2]

P20.3 P20.1 [4]

2

P20.7

P20.8 P20.9 P20.7=1

3

P20.13

4

P20.15 A B

A B U V W

[0]

[1] A B

5

GDHF-PGD1 PG

GDHF-PGD1 PG

DI “[10]” DP “CW0.9”

P20.26 P20.27 0

2%

P20.34 [0] 1

0 P20.26 P20.27 0

P20.26 50% 100% P20.27 3% 5%

P20.34 [1] 2

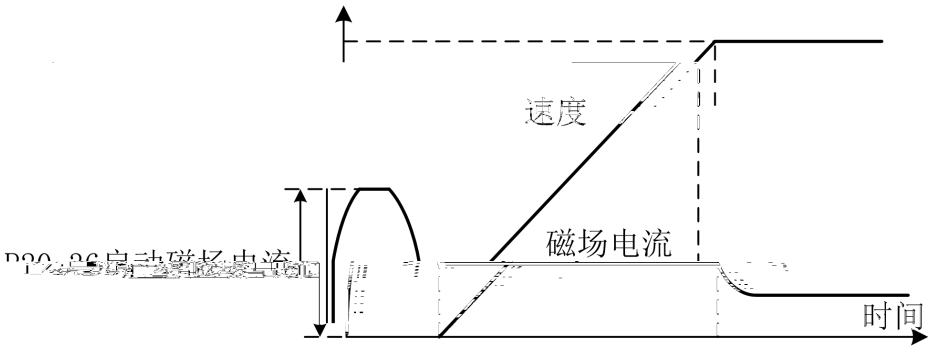
200 P20.26 P20.27 0

HF680NLC P20.34 [1]

HF680NLC P20.34 [0]

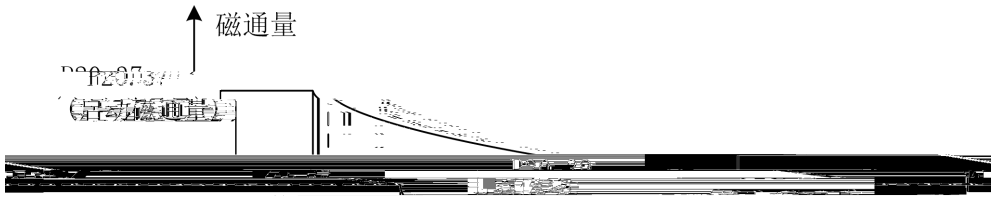
6

P20.36



7

P20.37 P20.40



8

P20.57 P20.58 P20.59 P20.57 1

P20.58

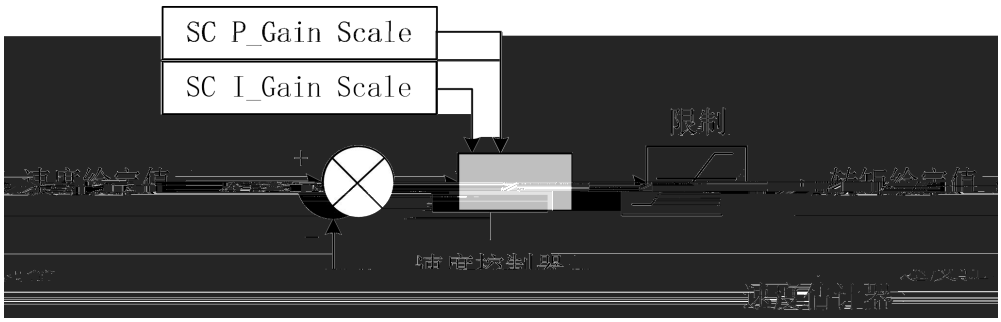
P20.59

9

P20.55 ,

P20.56 ,

%



10 DROOP

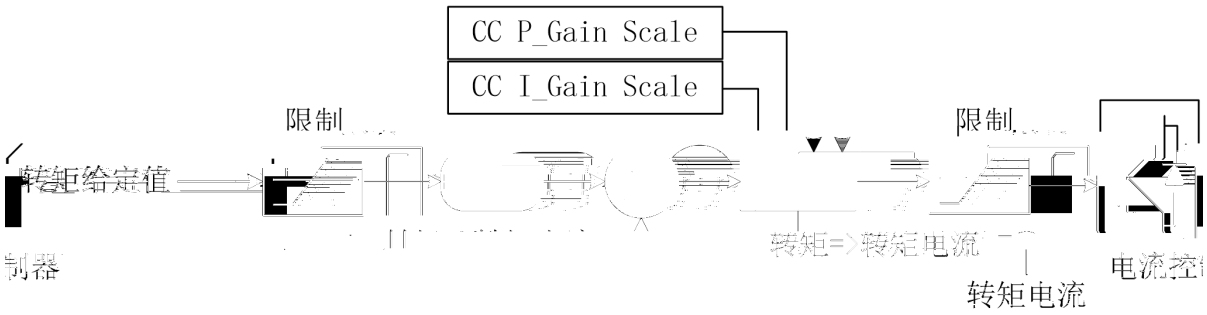
DROOP DROOP

P20.60 0

DROOP P20.61 DROOP

11

P20.62 P20.63 %



8.11

V/F	P16.64 V/F	(10 40Hz)	100	80 150	
	P16.12				
	P16.15				
	P16.26 V/F		0.75	0.5 1.2	
	P7.0		150	150 220	
	P16.12				
	P7.0		150	150 220	
	P20.43		75	50 100	
	P20.56		100	80 150	

9.

9.1

W01	SYS_NOT_RDY	(Ready)	
W02	NO_DRV_ENABLE	[ ]	P3
W03	LOCAL_EM	[ ]	P3
W04	REMOTE_EM	[ ]	P3
W06	OT	P7.14( )	
W09	DP P/B ALARM	DP	DP
W10	MODBUS MODBUS ALARM	Modbus	Modbus
W15	PARAMETER ERROR		
W18	Temp_Sensing Fail		
W20	SLV_NOT_RDY		
W21	1 SLV1_CAN_ERR	1	1

9.2

[E050]	U ERR_UT not reset	IGBT IGBT
[E051]	U ERR_UT not reset	IGBT IGBT
[E052]	V ERR_UT not reset	

		P7.48(1) P7.49(1)
[E111]	OL	P7.48 P7.49 P7.8
[E112]	ZC	
[E113]	MIP	
[E114]	MOP	
[E115]	OS	P7.19 P7.19
[E116]	SLVC Fail	P7.23 LL
[E117]	MOTOR STALL	

[E127]	IGBT7 OT7	
[E128]	IGBT8 OT8	
[E137]	FAN STALL	
[E138]	TEMP_SENSING FAIL	
[E152]	U IGBT PDP [UB]	IGBT IGBT
[E154]	V IGBT PDP[VB]	IGBT IGBT
[E155]	W IGBT PDP [WT]	IGBT IGBT
[E156]	Hardware OC	
[E157]	PDP [DB]	
[E160]	SLAVE FAULT	
[E161]	SLV_NOT_RDY	
[E162]	1 CAN SLV1_CAN_ERR	1
[E167]	CAN CAN_ERR	
[E170]	MOTOR TUNING FAIL	P7.33
[E180]	DP P/B ERROR	
[E181]	DP P/B_EM	CW0.4
[E200]	LOCAL_EM	[ ] P3

[E201]	REMOTE_EM	[ ] P3
[E202]	Modbus MODBUS EMERGENCY	Modbus CW0.4
[E203]	DRIVE DISABLED	DP
[E210]	Panel Error	
[E220]	CRC MEMORY CRC ERR	
[E221]	PARAMETER ERROR	

9.3

		• • ON • COM	• • ON • COM
		•	• •
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		•	•
		•	•
		•	•
		• ON	• ON

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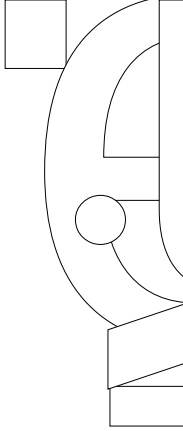
10.

1. 2. 3. 4.

1. CMOS 2. 3.

10.1

10



10.3

2

5

1

2

3

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6

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