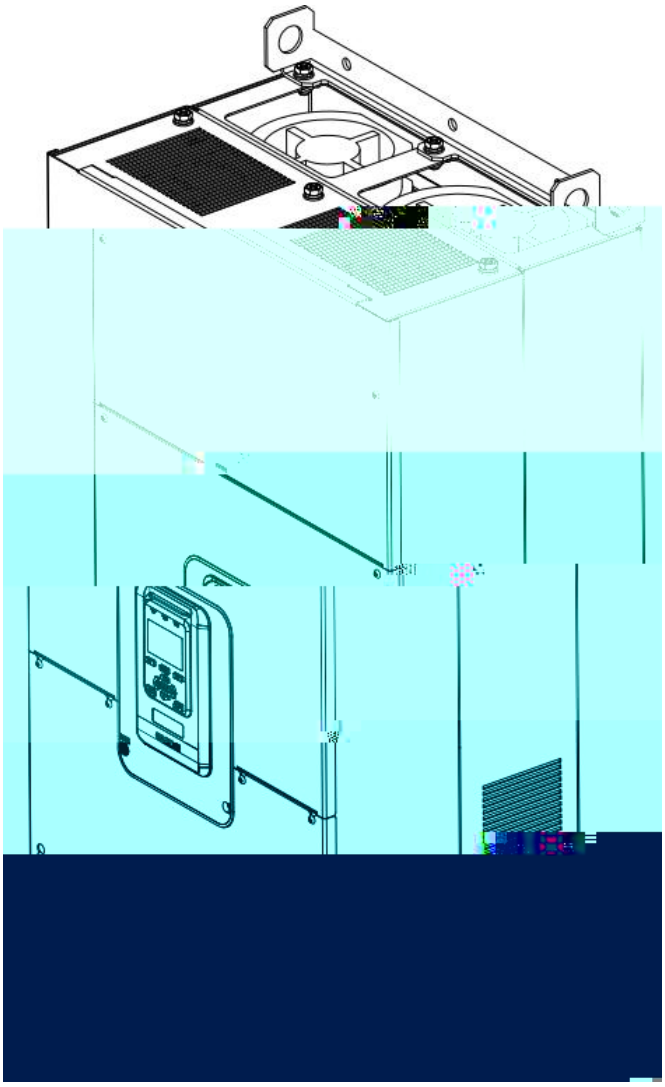
GUIDE



HF650

1.

1.1 1
1.2 1
1.3 2

2.

2.1 4
2.2 4
2.3 5
2.4 6
2.5 12
2.6 17
2.7 19
2.8 19
2.9 20
2.10 21

3.

3.1 23
3.2 24
3.3 35
3.4 36
3.5 PGC2 37
3.6PGD2 40

4.

4.1 44
4.2 45
4.3 47
4.4 50
4.5 51
4.6 52
4.7 53
4.8 54
4.9 55
4.10 EMC 56

5.

5.1 59
5.2 59
5.3 60
5.4 64
5.5 65

6.

6.1 68
6.2 69

7.

7.1 P0 74
7.2 P2 74
7.3 P3 74
7.4 P4 77
7.5 P5 79
7.6 P6 81
7.7 P7 83
7.8 1 P8 86
7.9 2 P9 89
7.10 3 P10 92
7.11 4 P11 95
7.12 1 P12 98
7.13 2 P13 100
7.14 3 P14 102
7.15 4 P15 104
7.16 1 V/F P16 106
7.17 2 V/F P17 109
7.18 3 V/F P18 112
7.19 4 V/F P19 115
7.20 1 P20 118
7.21 2 P21 122
7.22 3 P22 126
7.23 4 P23 130
7.24 MODBUS P32 134
7.25 P33 135

8.

8.1 145
8.2 145
8.3 146
8.4 147
8.5 147
8.6 148
8.7 151
8.8 154
8.9 V/F 156
8.10 160
8.11 165

9.

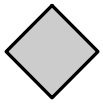
9.1 166
9.2 167
9.3 171

10.

10.1 172
10.2 173
10.3 173
10.4 174
10.5 174

1.

1.1



1.2

(1)

(2)

(3)

(4)

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

1.3

1

RCD

RCM RCD

RCM

B RCD RCD

RCD RCD

2

500V

5MΩ

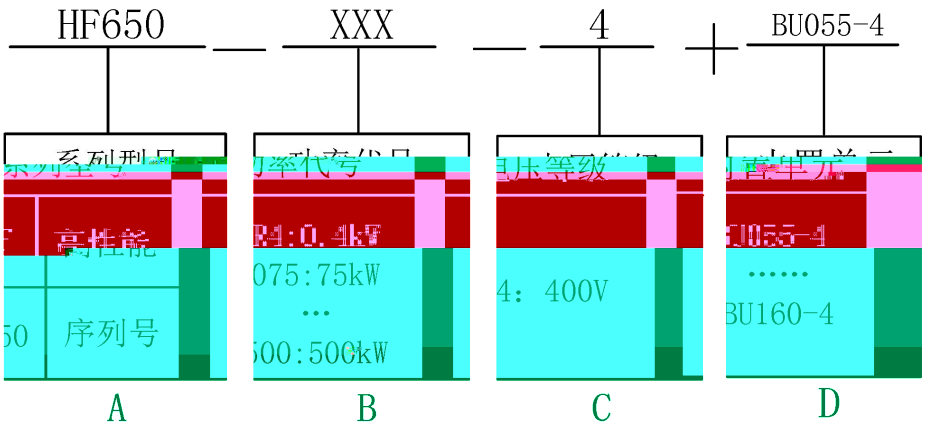
3

2.

2.1

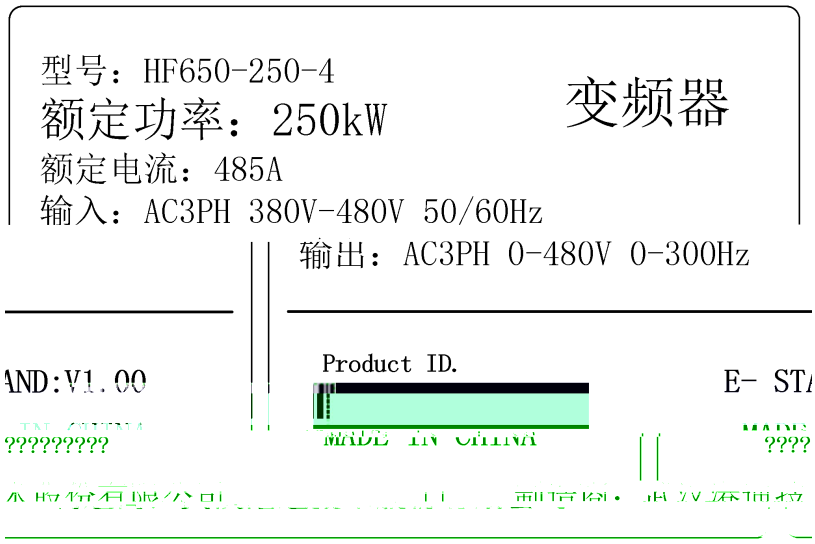
1.
2.
3.
4.

2.2



2-1

HF650 2-2 250kW



2-2

HF650-250-4 HF650 250kW 400V

AC

3PH

380V-480V 50/60Hz

0-480V 0-300Hz

2.3

2-3 HF650

	[A]	[kW]	[A]	[kW]		(kg)
HF650-0R4-4	1.8	0.4	--	--	I1	3
HF650-0R7-4	3.3	0.75	1.8	0.4		
HF650-1R5-4	4.8	1.5	3.3	0.75		
HF650-2R2-4	5.7	2.2	4.8	1.5	I2	3.5
HF650-3R7-4	10.2	3.7	5.7	2.2		
HF650-5R5-4	15	5.5	10.2	3.7		
HF650-7R5-4	18	7.5	15	5.5		
HF650-011-4	24	11	18	7.5	I3	4.5
HF650-015-4	32	15	24	11		
HF650-018-4	41	18.5	32	15	I4	10.5
HF650-022-4	47	22	41	18.5		
HF650-030-4	65	30	47	22		
HF650-037-4	75	37	65	30	I5	35

HF650-045-4	94	45	75	37		
HF650-055-4	115	55	94	45		
HF650-075-4	155	75	115	55	I6	52
HF650-090-4	188	90	155	75		
HF650-110-4	215	110	188	90	I7	108.5
HF650-132-4	265	132	215	110		
HF650-160-4	330	160	265	132		
HF650-185-4	365	185	330	160	I8	146
HF650-220-4	438	220	365	185		
HF650-250-4	485	250	438	220		
HF650-280-4	545	280	485	250		
HF650-315-4	610	315	545	280	I9	210
HF650-355-4	668	355	610	315		
HF650-400-4	720	400	668	355		
HF650-500-4	930	500	820	450	I10	305

150% 5 1

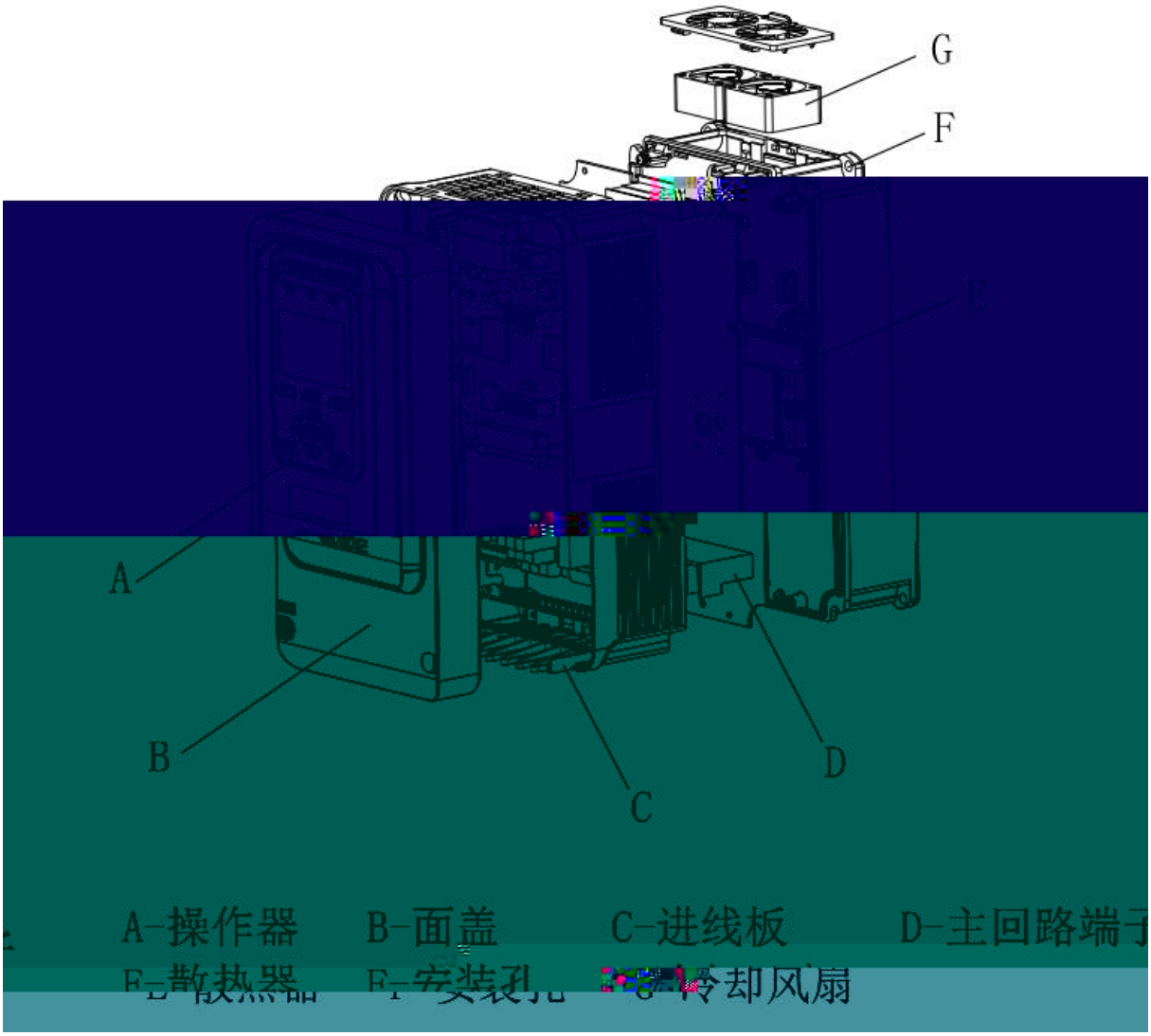
200% 5 5

0.4kW-30kW ; 37kW-160kW 185kW

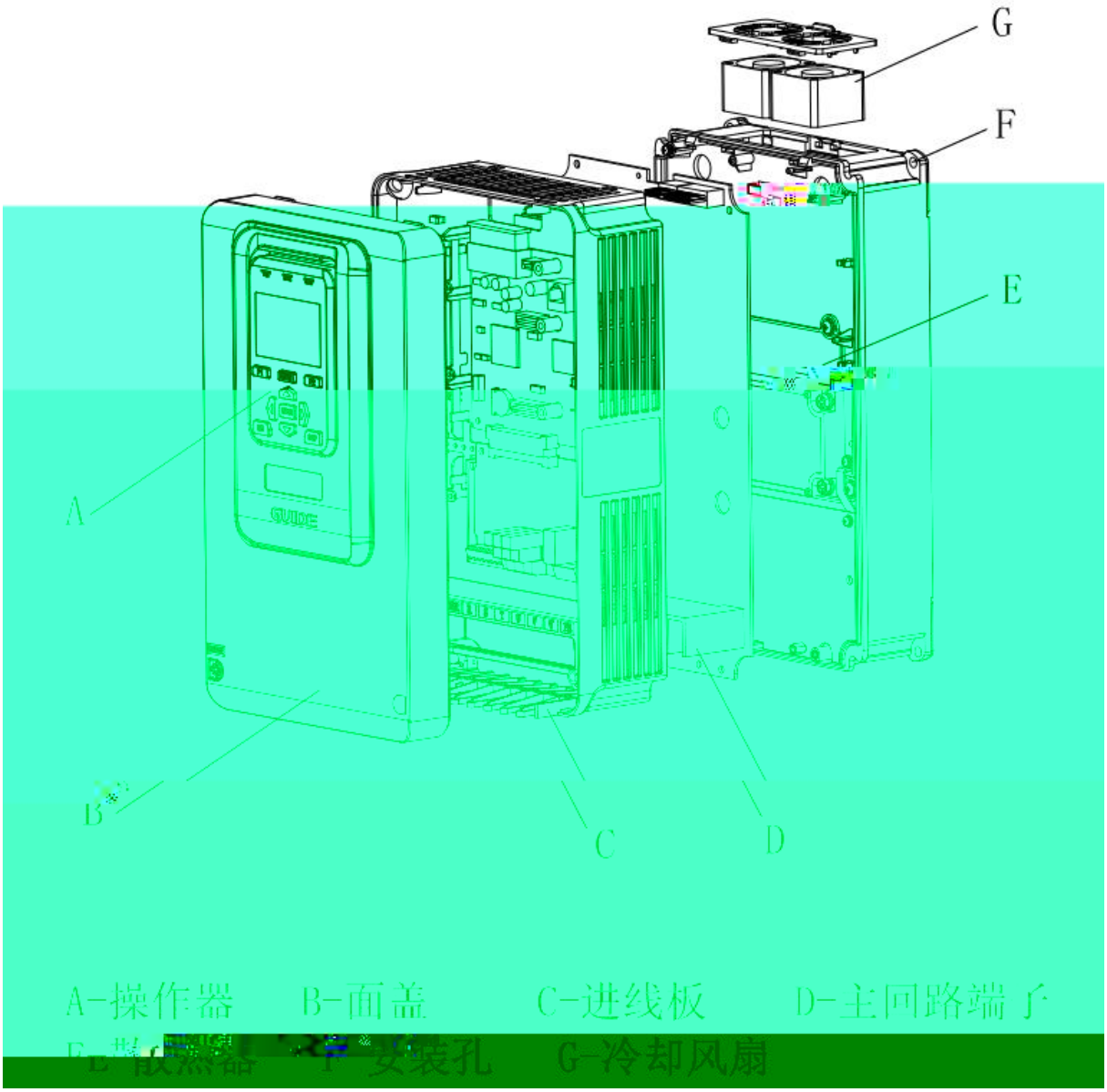
2.4

HF650

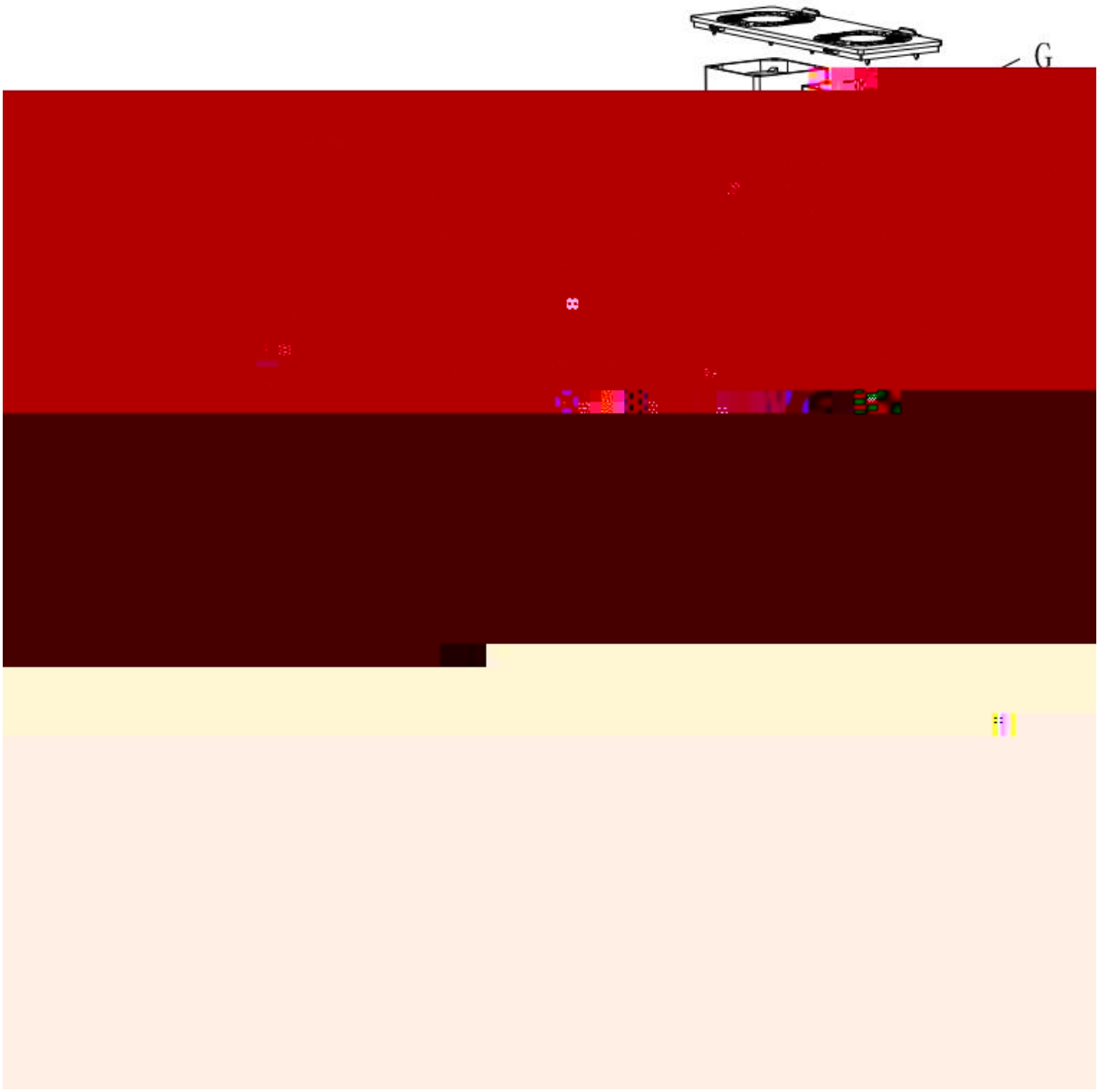
HF650-0R4-4　　HF650-7R5-4



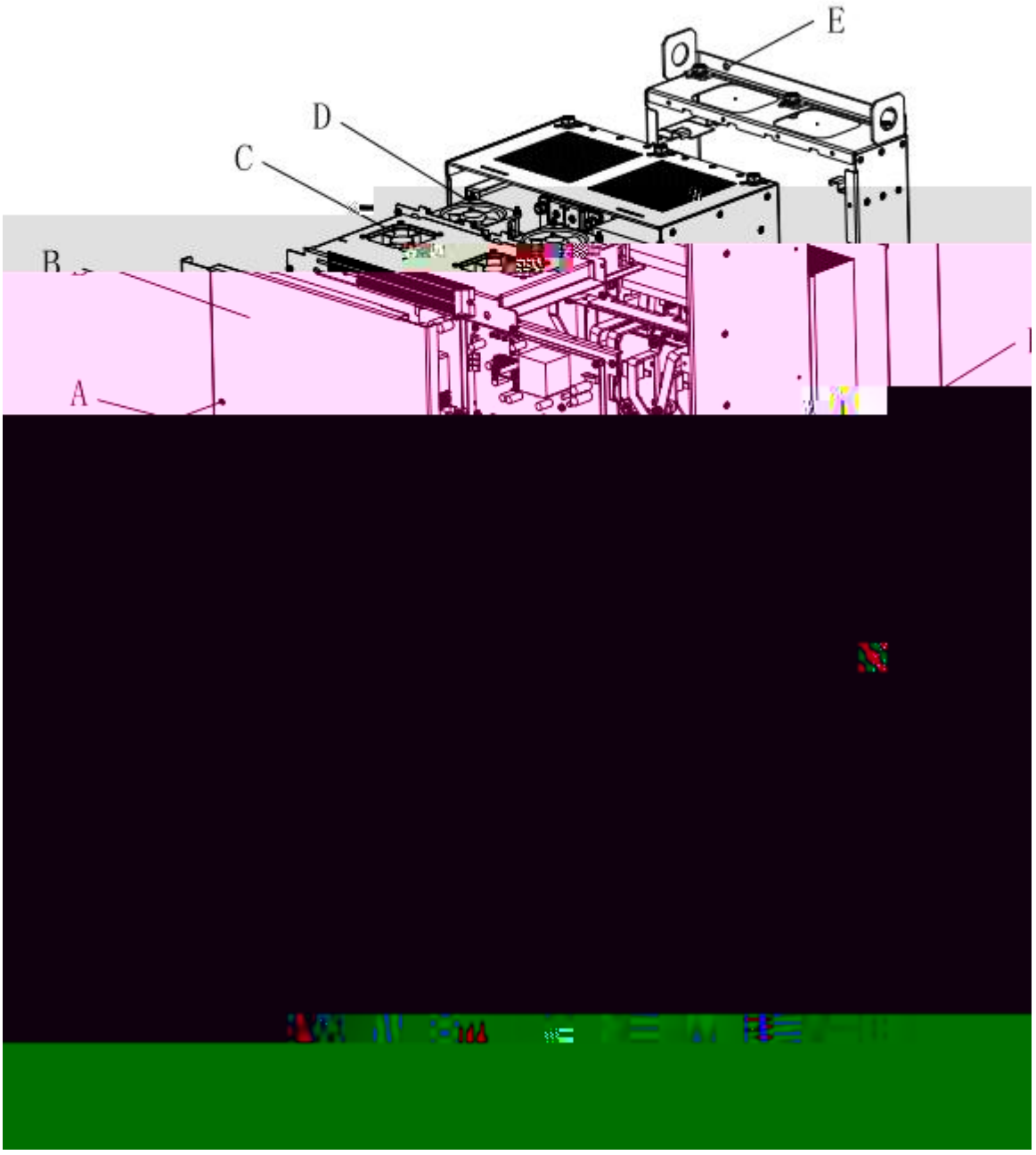
HF650-011-4　HF650-015-4



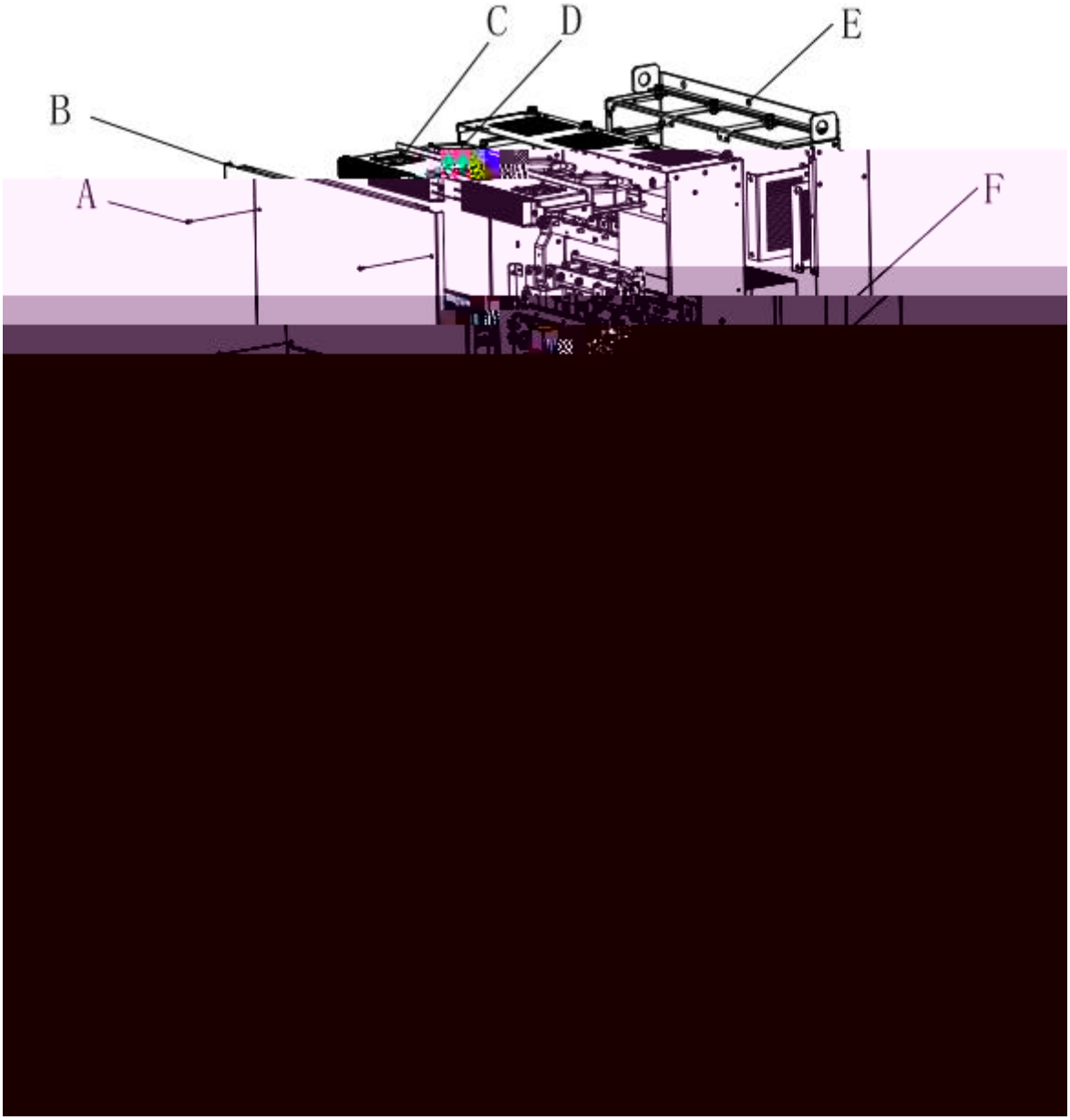
HF650-018-4　HF650-030-4



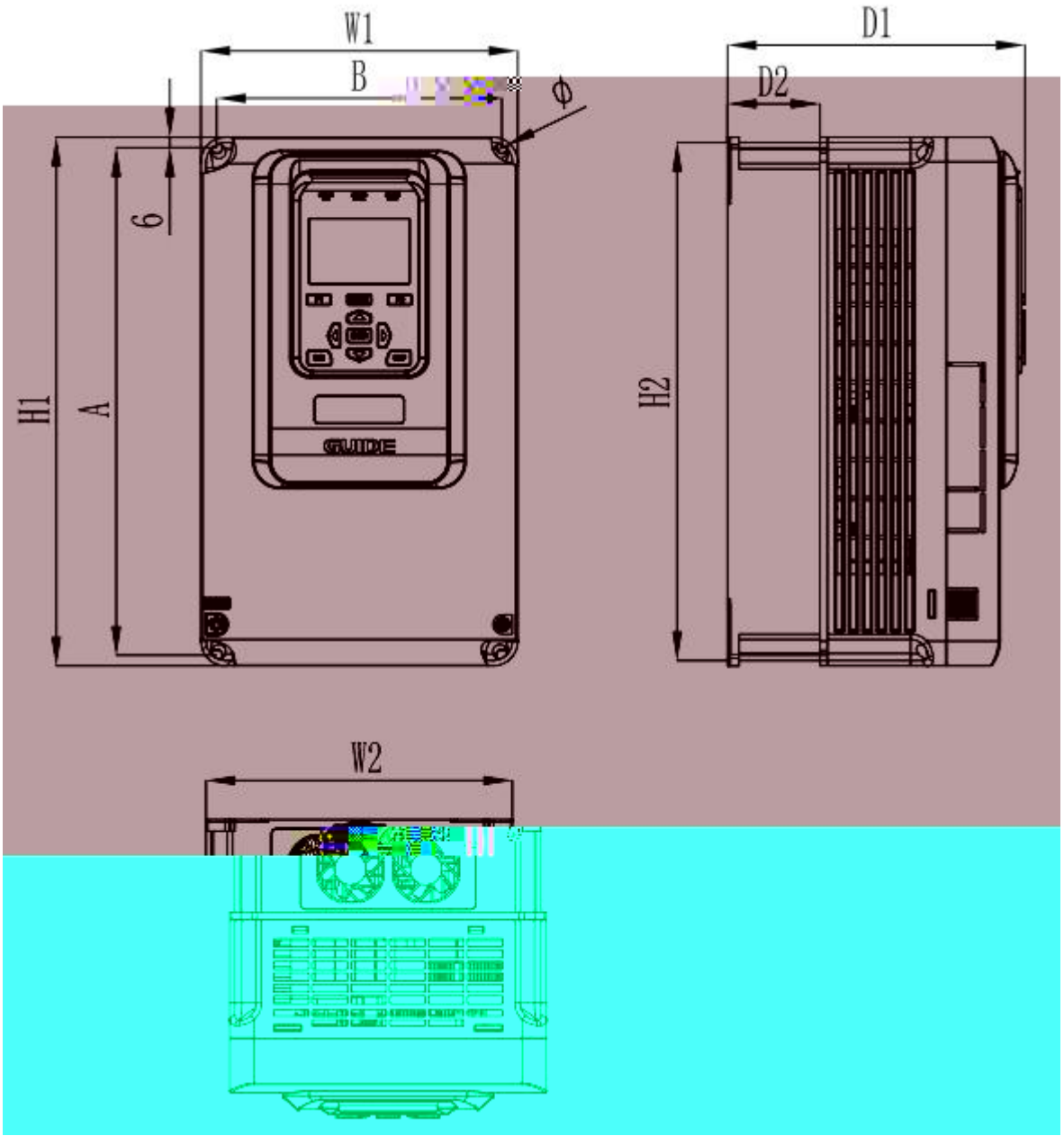
HF650-037-4　HF650-090-4



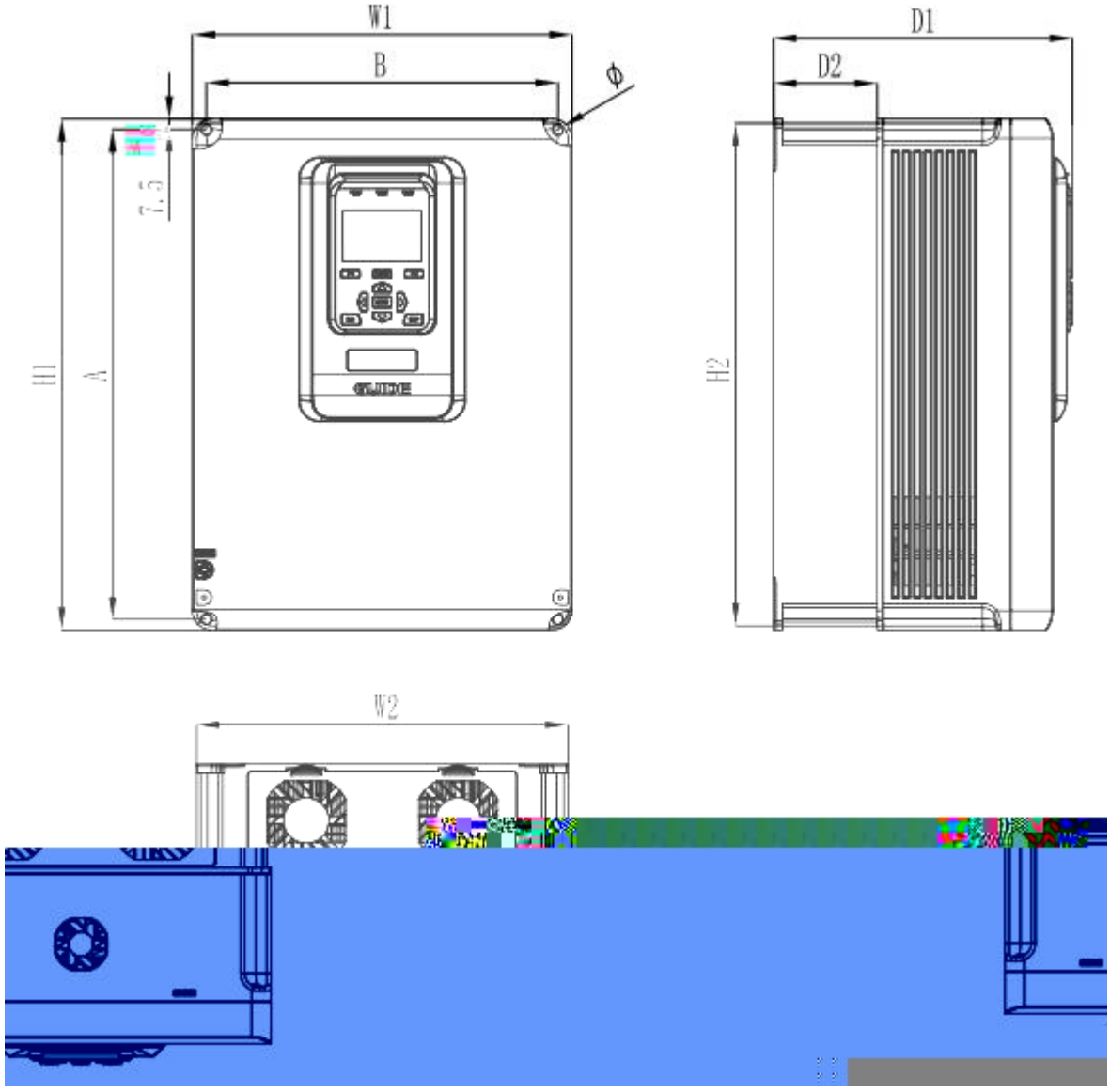
HF650-110-4　HF650-500-4



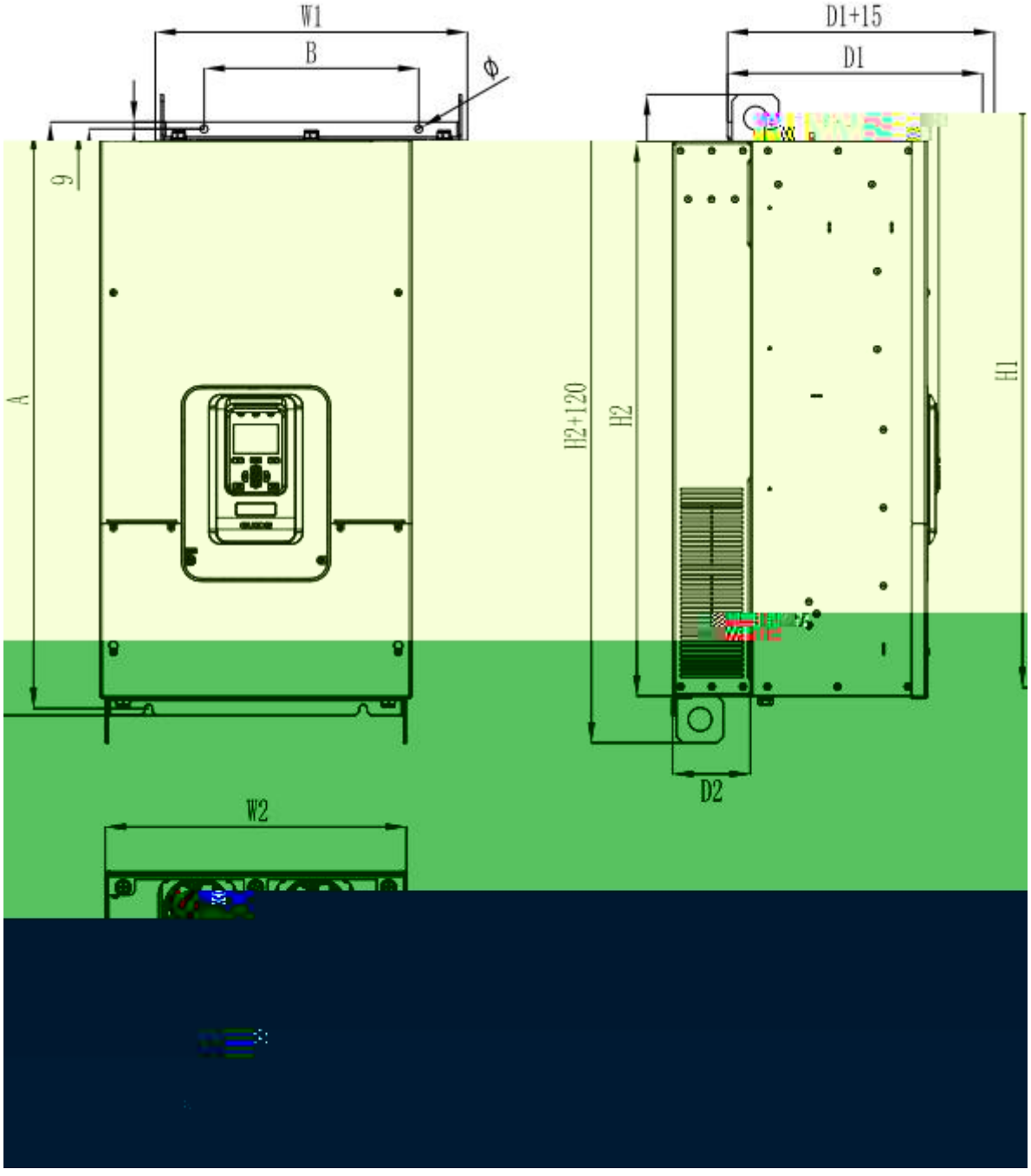
2.5



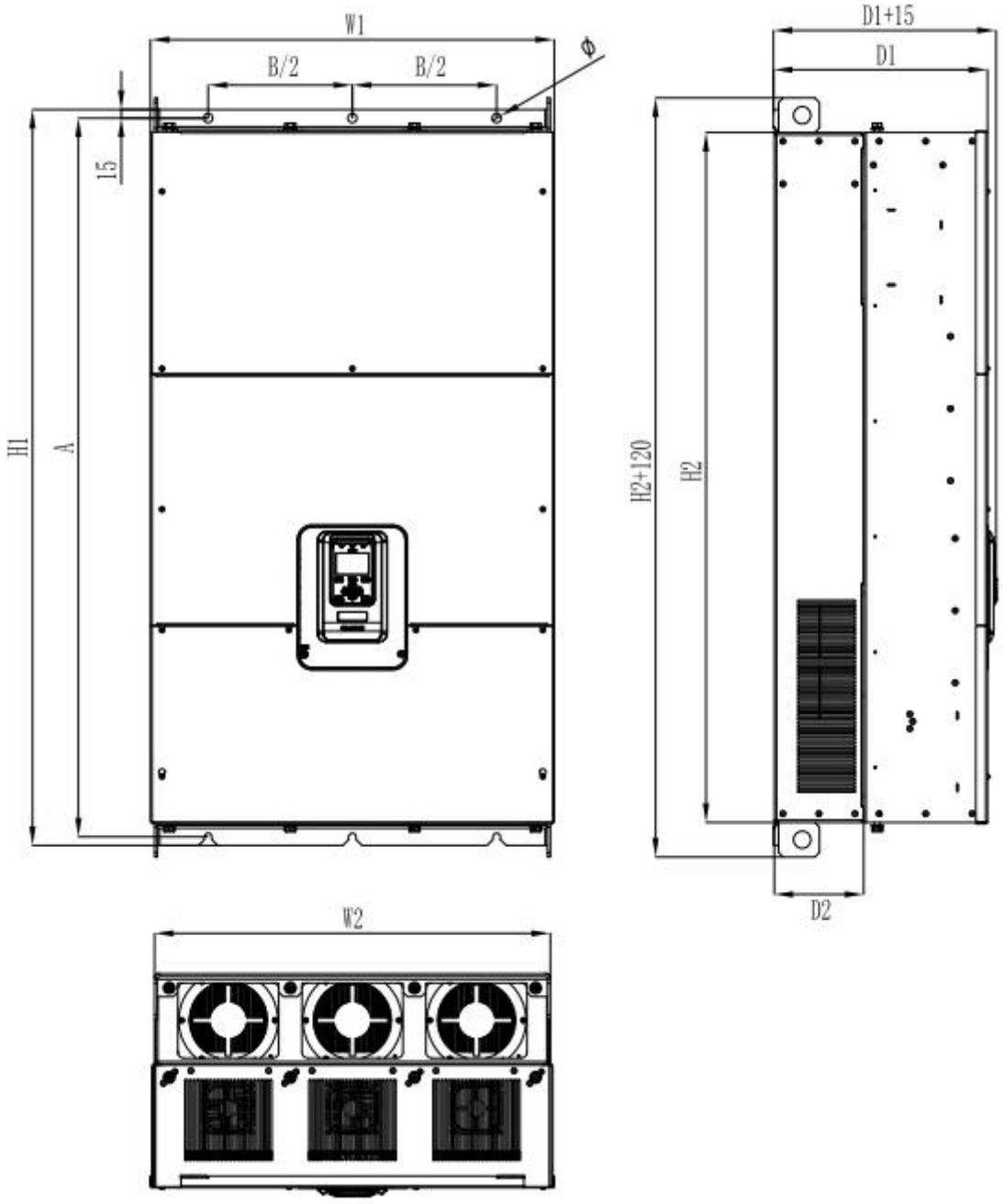
I1-I3



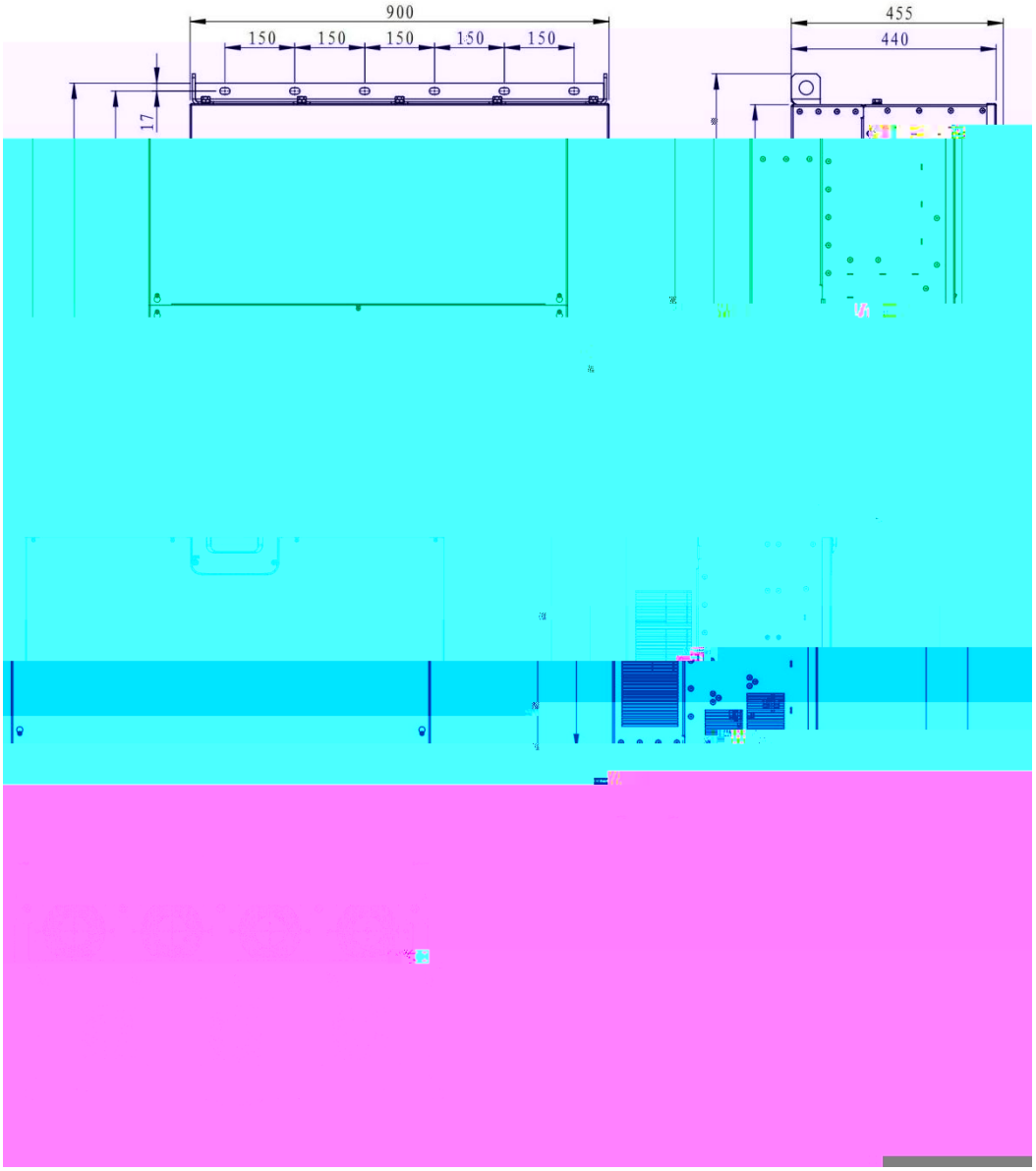
14



I5-I6



17-19


900
150
150
150
150
150
17
455
440

I2	2.2KW 3.7KW 5.5 KW 7.5 KW	260	254	140	134	170	52.5	248	122	4-φ6	4-M5	3.5
I3	11 KW 15 KW	300	294	180	174	170	52.5	288	162	4-φ6	4-M5	4.5
I4	18.5 KW 22 KW 30 KW	370	364	275	269	215	75	355	255	4-φ7	4-M6	10.5
I5	37 KW 45 KW 55 KW	600	565	340	326	282	110	585	225	2-φ9	4-M8	35
I6	75 KW 90 KW	760	710	400	386	327	100	742	275	2-φ9	4-M8	52
I7	110 KW 132 KW 160 KW	930	850	490	476	335	155	900	350	3-φ13	6-M12	108.5
I8	185 KW 220 KW 250 KW 280 KW	1140	1060	500	486	355	155	1110	350	3-φ13	6-M12	146
I9	315 KW 355 KW 400 KW	1275	1195	700	686	370	155	1245	500	3-φ15	6-M14	210
I10	500 KW	1473	1385	900	890	440	155	1444	300	6-14X22	12-M12	305

2.6

		380V 480V
		50/60Hz
		-15% +10%
		fLN ± 2 ± 4 ≤ 2 fLN/s

		0
		1
		0 300Hz
		1kHz 10kHz
		0.01Hz x0.1%
		(VC) (SVC) V/F
	V/F	
		PG PG
		300Hz
		0Hz/200%(VC SVC) 0.8Hz/150%(V/F)
		1:500(SVC) 1:1000(VC)
		±0.02% (VC) ±0.2% (SVC) ±0.5% (V/F)
		5 150% 1 200% 5
	PID	
		DP CAN Modbus Ethernet Profinet
		PID / / / / AFE
		8 2 -10 +10V 0mA/4mA 20mA
		5 3 2 2 0 +10V 0mA/4mA 20mA
	LCD	
		1000 1000 100 1% 3000

		-10 +40 40 1 1% 50 -10
		95%RH
		-20 +60 10-30
		>0.85 >0.999
		98%
		3 J14 I0 J15 I0 J13 PG
		IP20
		2
		≤80db

2.7

(1) 200%

(2) 50% HF650

(3) HF650

2.8

	[kW]	[kW]		[kW]	[kW]
HF650-0R4-4	0.4	0.059	HF650-055-4	55	1.486
HF650-0R7-4	0.7	0.079	HF650-075-4	75	1.956
HF650-1R5-4	1.5	0.092	HF650-090-4	90	2.422
HF650-2R2-4	2.2	0.102	HF650-110-4	110	3.1
HF650-3R7-4	3.7	0.151	HF650-132-4	132	3.663
HF650-5R5-4	5.5	0.218	HF650-160-4	160	4.495
HF650-7R5-4	7.5	0.277	HF650-185-4	185	4.91
HF650-011-4	11	0.328	HF650-220-4	220	5.88

HF650-015-4	15	0.5	HF650-250-4	250	7.044
HF650-018-4	18.5	0.645	HF650-280-4	280	7.708
HF650-022-4	22	0.722	HF650-315-4	315	8.003
HF650-030-4	30	0.906	HF650-355-4	355	8.718
HF650-037-4	37	1.128	HF650-400-4	400	9.1
HF650-045-4	45	1.313	HF650-500-4	500	11.13

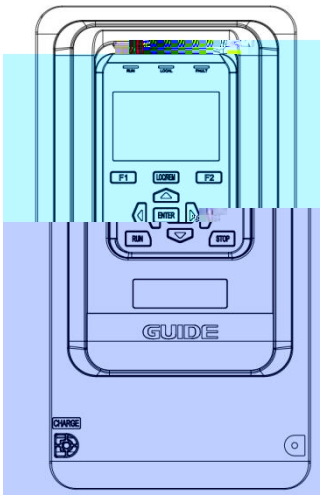
	BU110-4	110KW
	BU160-4	132KW-160KW
	GDBU-4045B	
	GDBU-4220B	

3.1

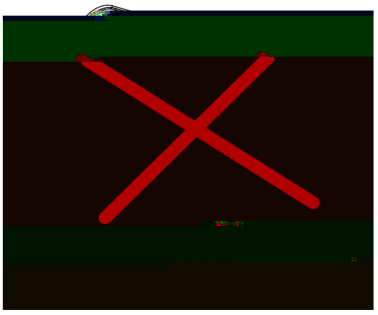
	10cm 5cm	6	
	-10 +40 40 1 1% 50 -10	-20 +60 1 /	-20 +60
	70 106 kPa 0.7 1.05	70 106 kPa 0.7 1.05	60 106 kPa 0.6 1.05
	10Hz ≤ f ≤ 57Hz 0.075mm 57Hz ≤ f ≤ 150Hz 9.8 m/s²	10Hz ≤ f ≤ 57Hz 0.075mm 57Hz ≤ f ≤ 150Hz 9.8 m/s²	I I
		100m/s² 11ms	100m/s² 11ms
		250mm <100kg 100mm ≥ 100kg	250mm <100kg 100mm ≥ 100kg
	95%RH		
	1000 1000 100 1% 3000		
	2		

3.2

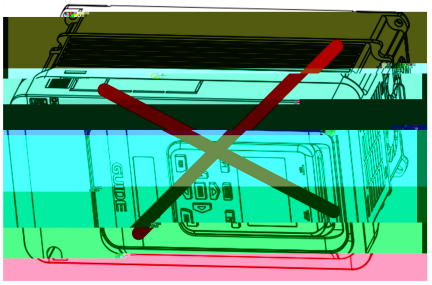
3.2.1



OK



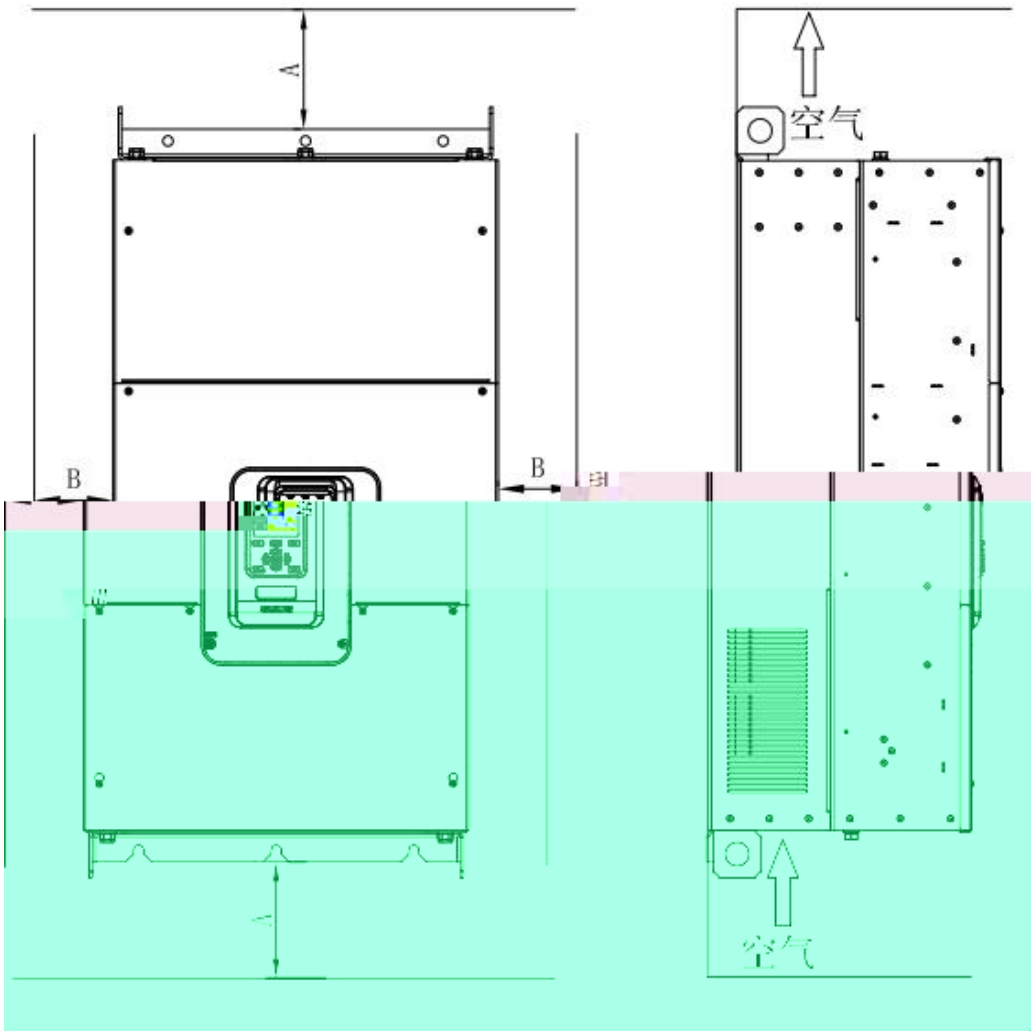
NG



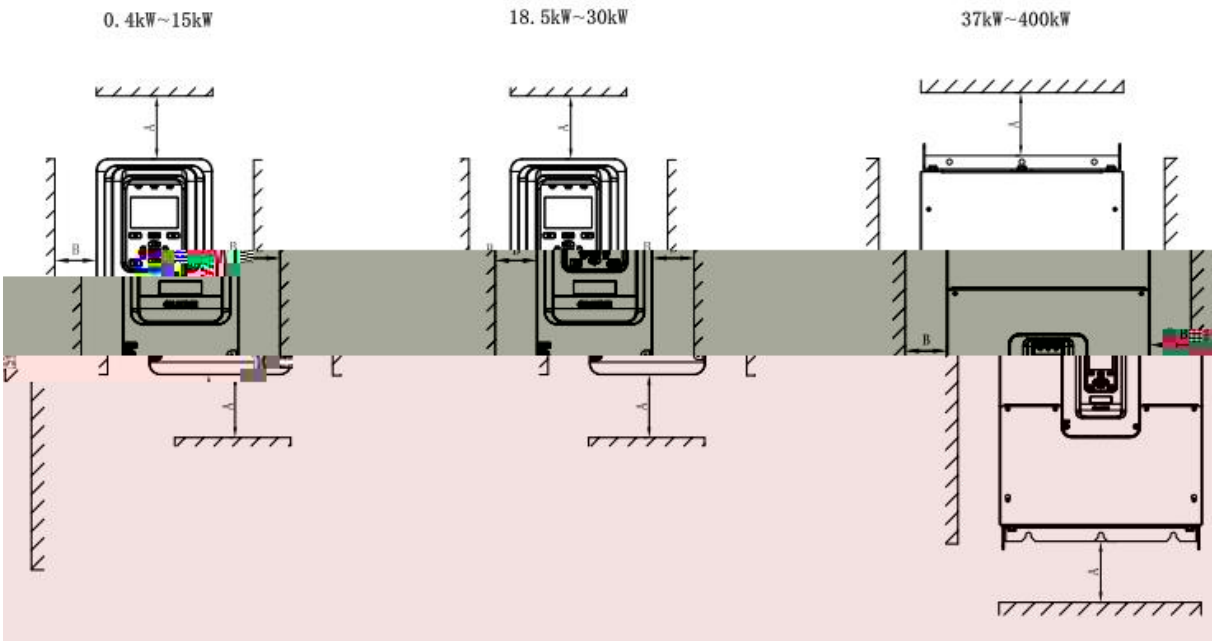
NG

3.2.2

1

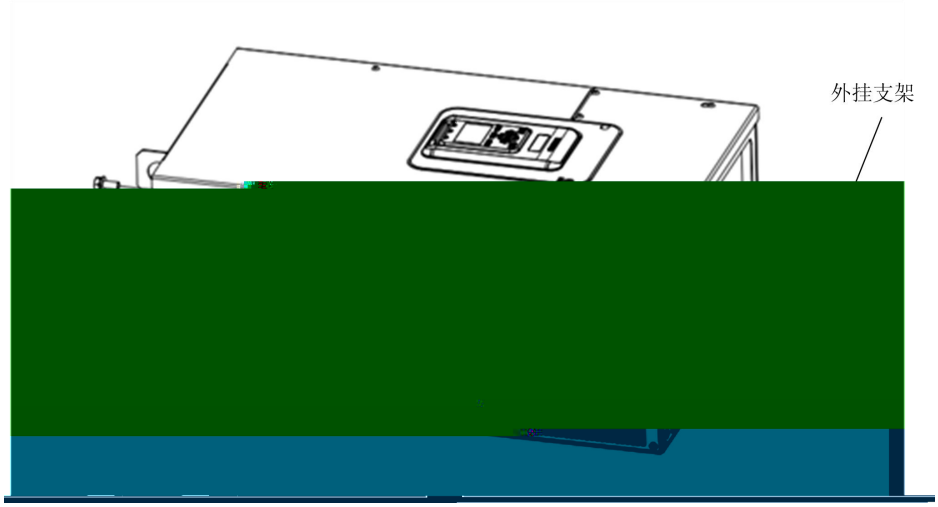


3-1



0.4kW~15kW	A ≥ 100mm	B ≥ 40mm
18.5kW~30kW	A ≥ 200mm	B ≥ 50mm
37kW~400kW	A ≥ 300mm	B ≥ 50mm
500KW	A ≥ 400mm	B ≥ 50mm

2



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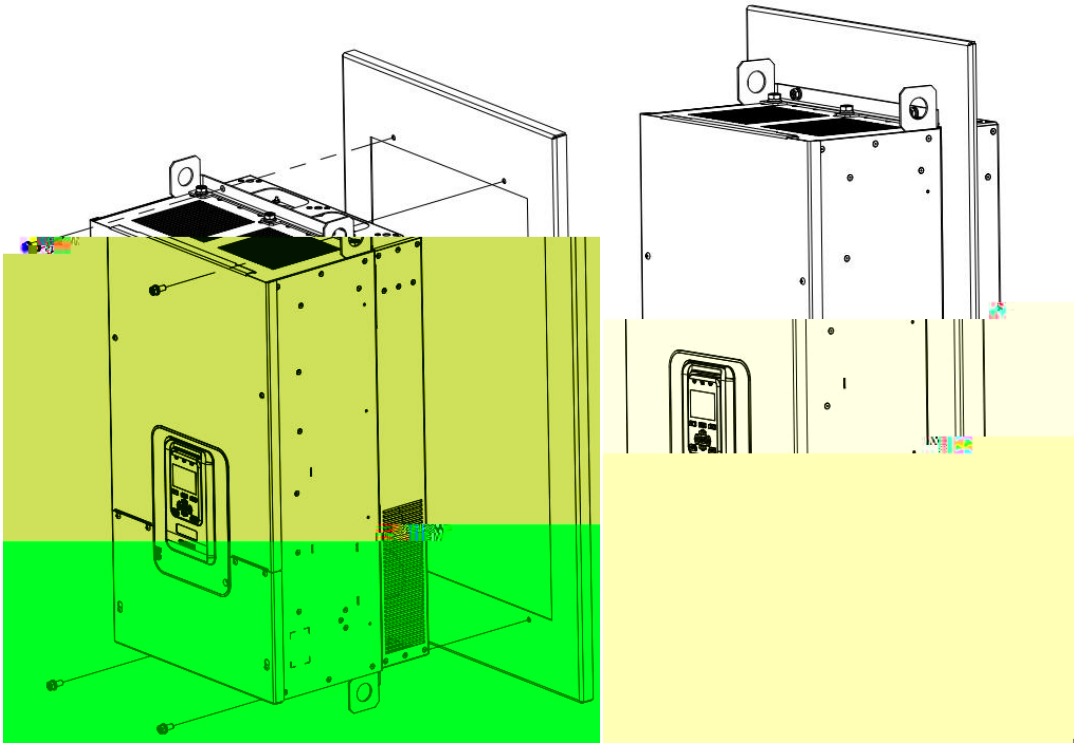
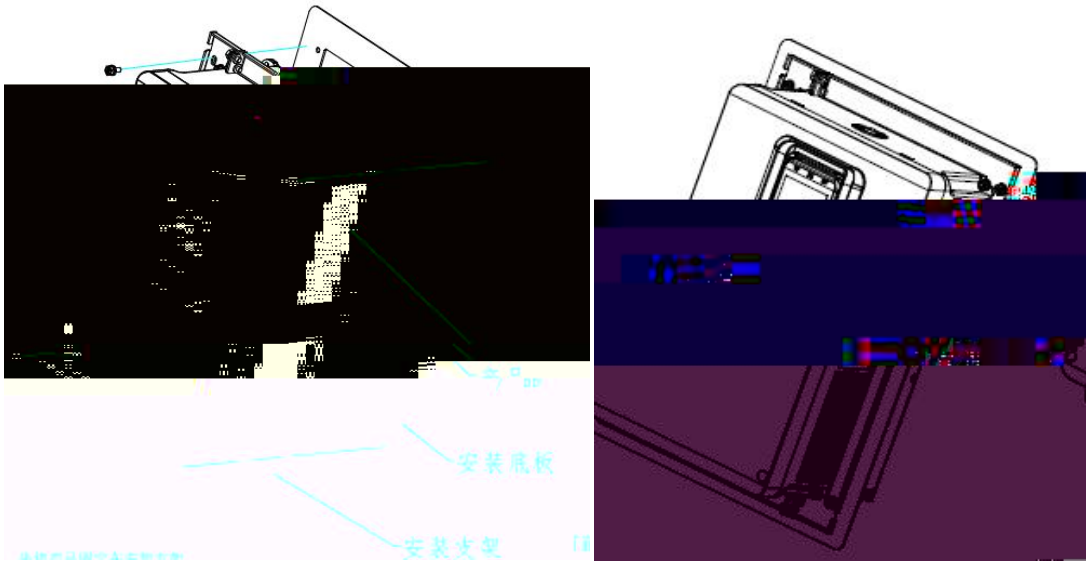


3-3



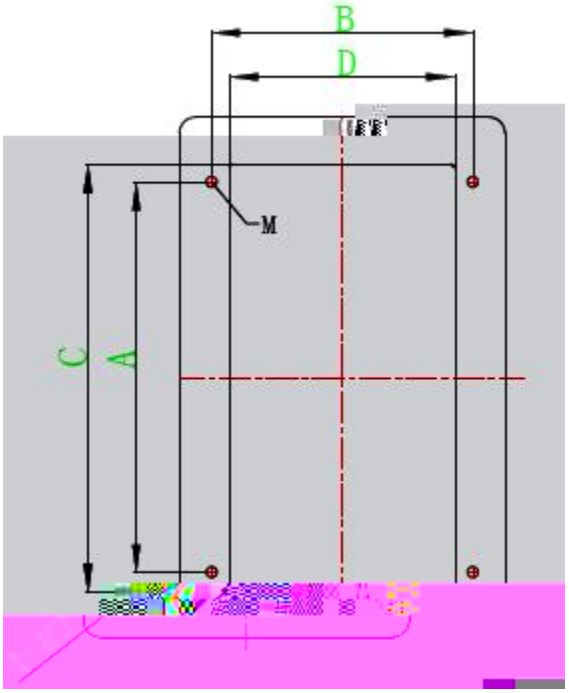
3-4

1

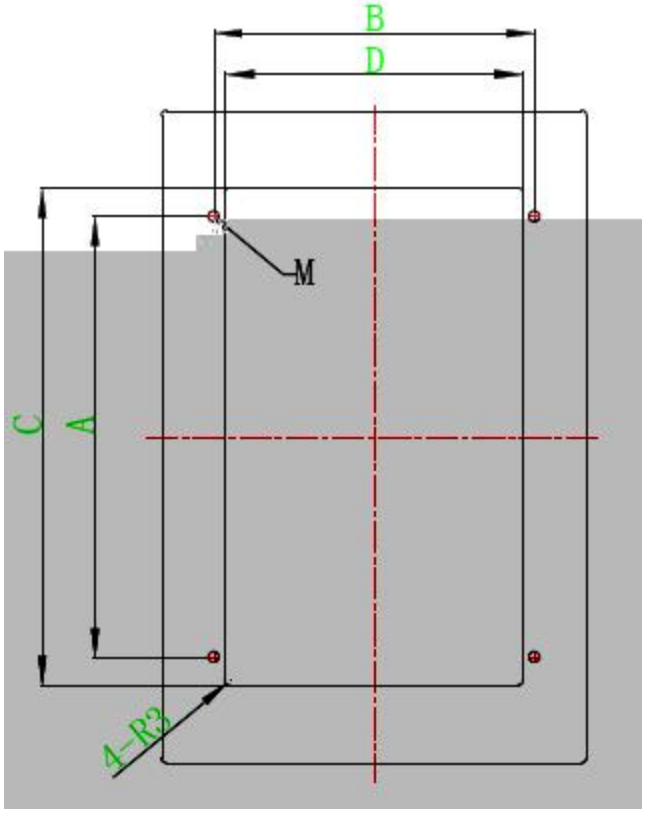
2

3

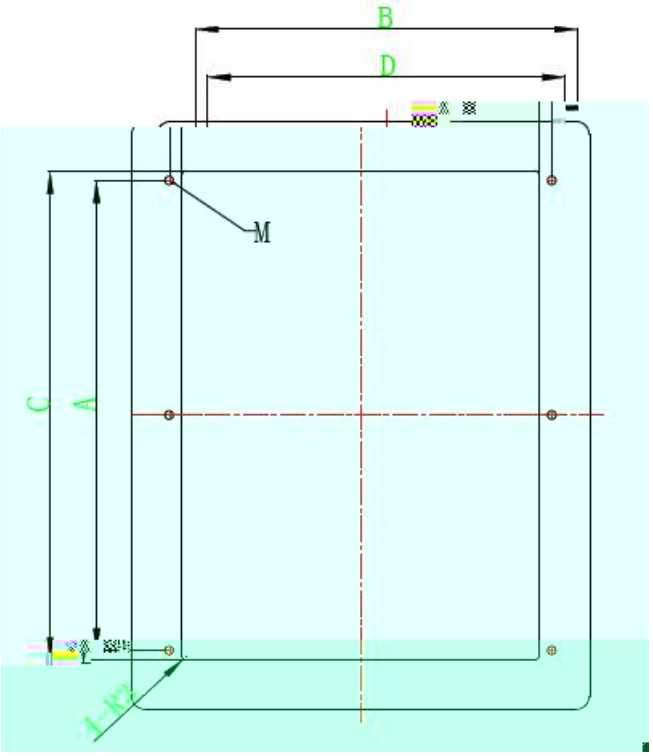
3



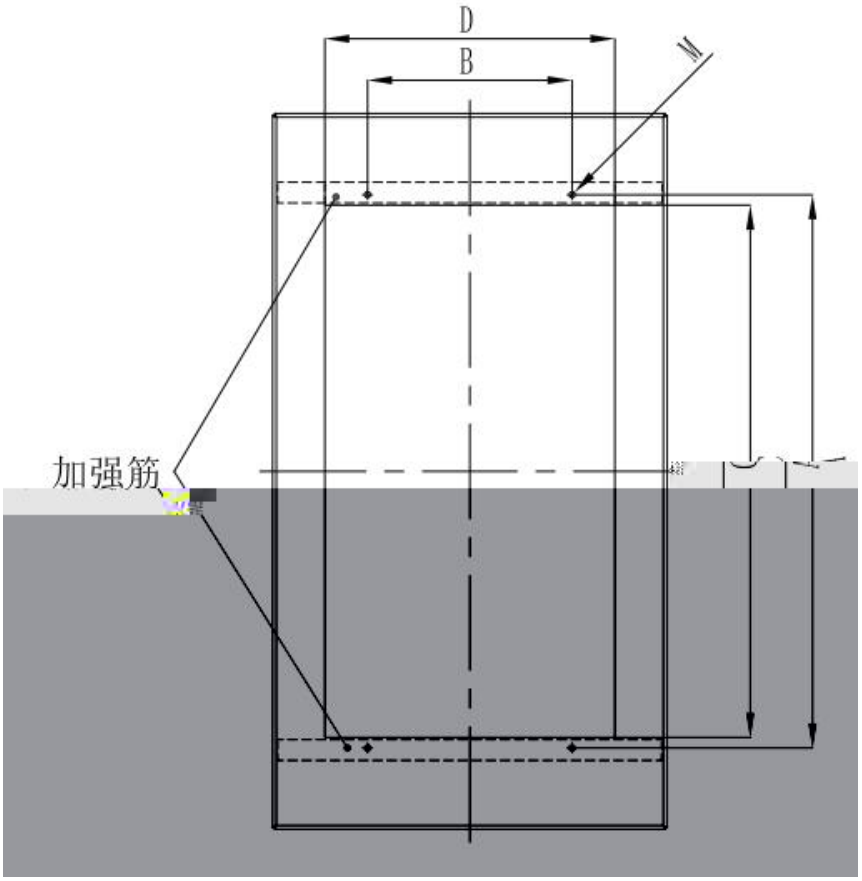
3-5 I1-I2



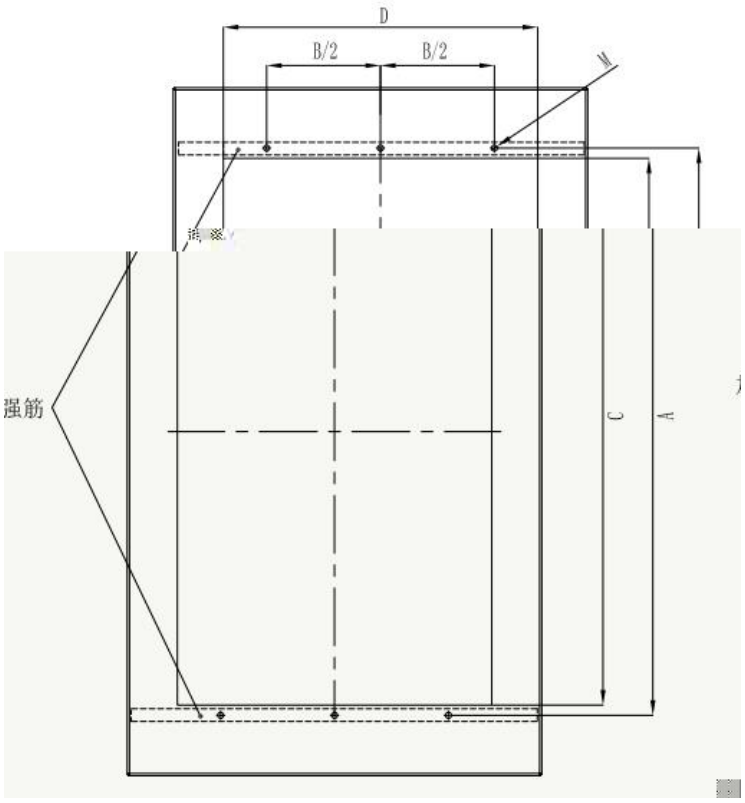
3-6 I3



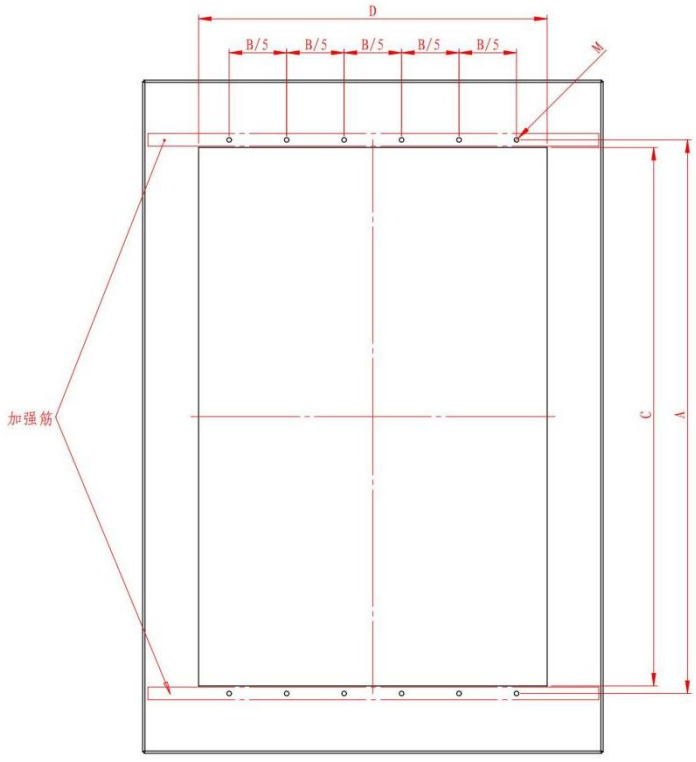
3-7 I4



3-8 I5-I6



3-9 I7-I9



3-10 I10

	(mm)		(mm)		
	A	B	C	D	
I1	240	160	262.5	138	4-M6
I2	240	160	262.5	138	4-M6
I3	270	197	304	182	4-M6
I4	360	292	374	273	6-M6
I5	585	275	570	330	4-M6
I6	742	275	715	390	4-M8
I7	900	350	855	480	6-M12
I8	1110	350	1065	490	6-M12
I9	1245	500	1200	690	6-M14
I10	1444	750	1405	910	12-M12

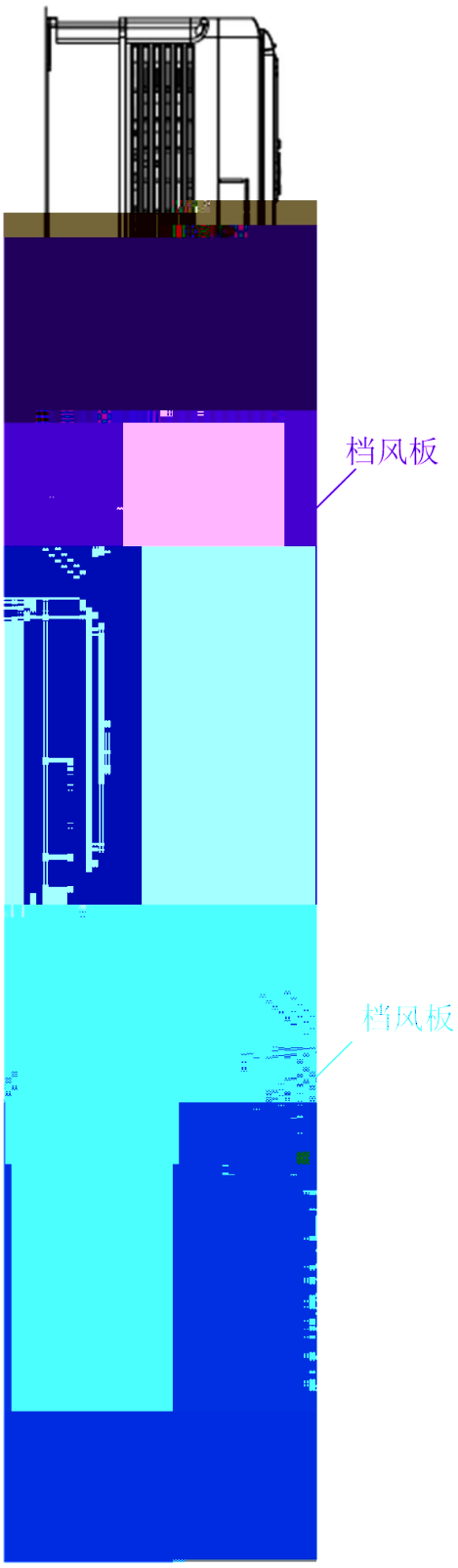
3.2.3

1

100mm

2

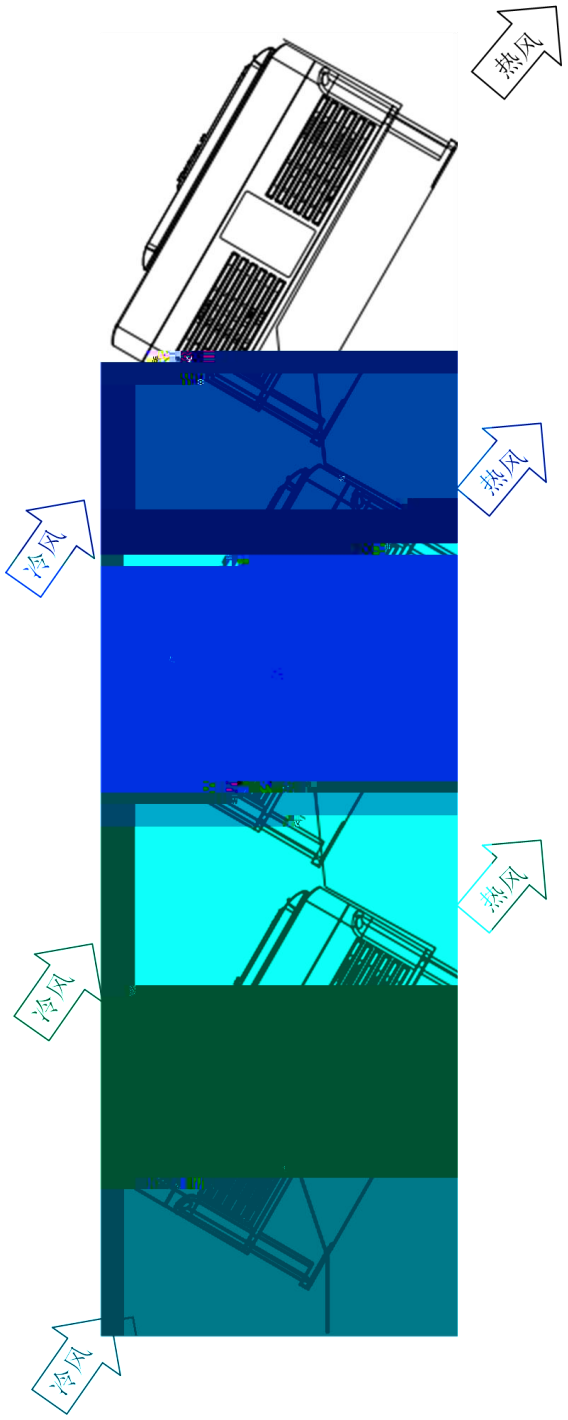
3-10



3-10

3

3-11



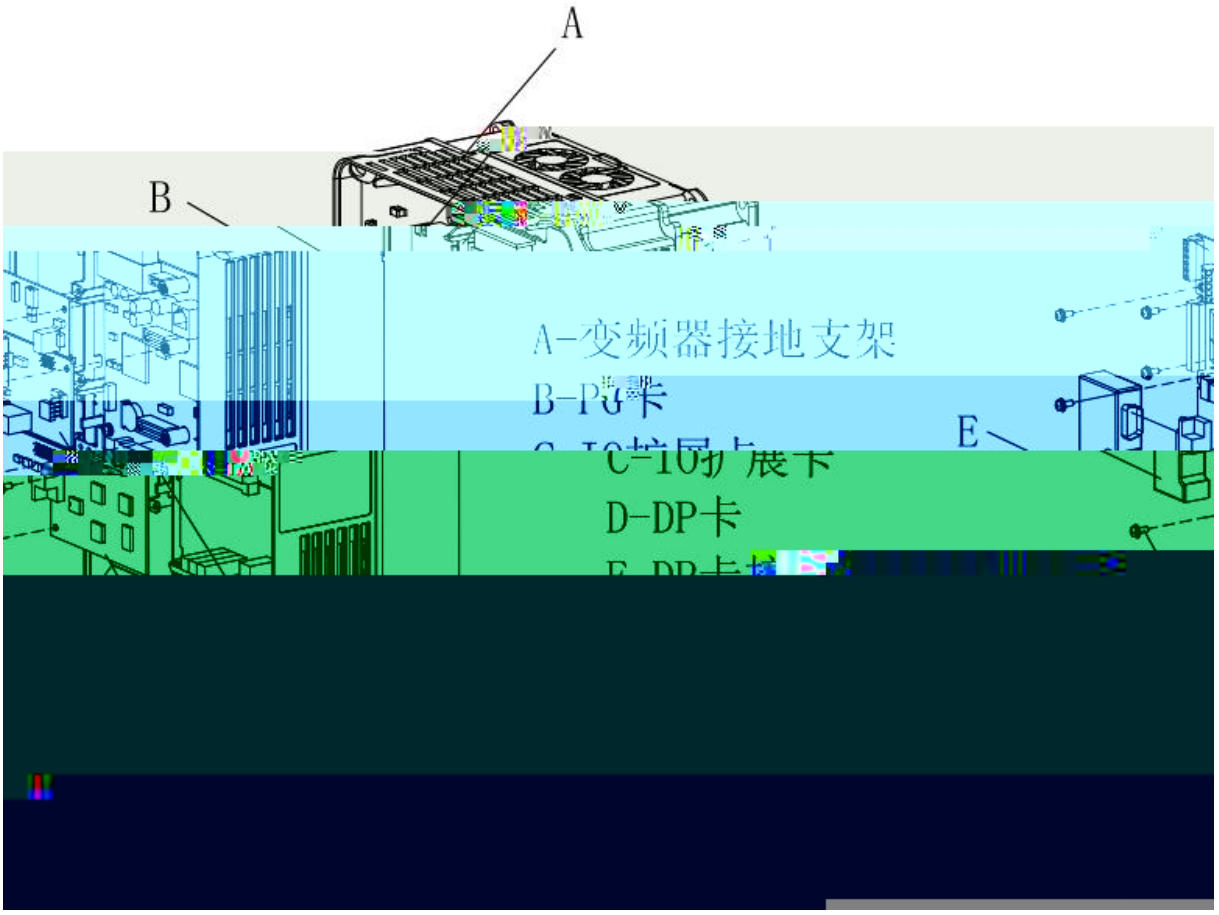
3-11

3.3

1 1 4 5mm Ø א p

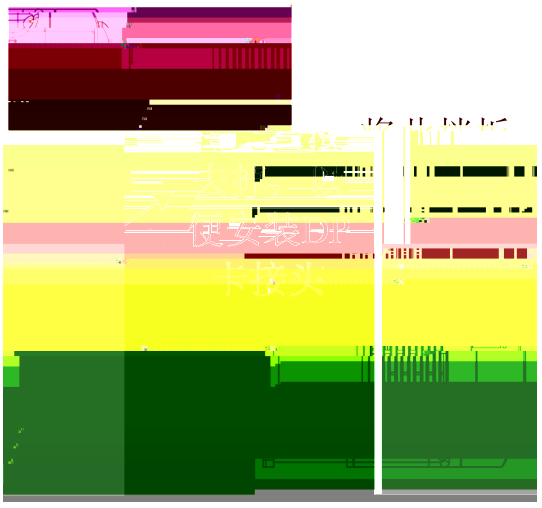
3.4

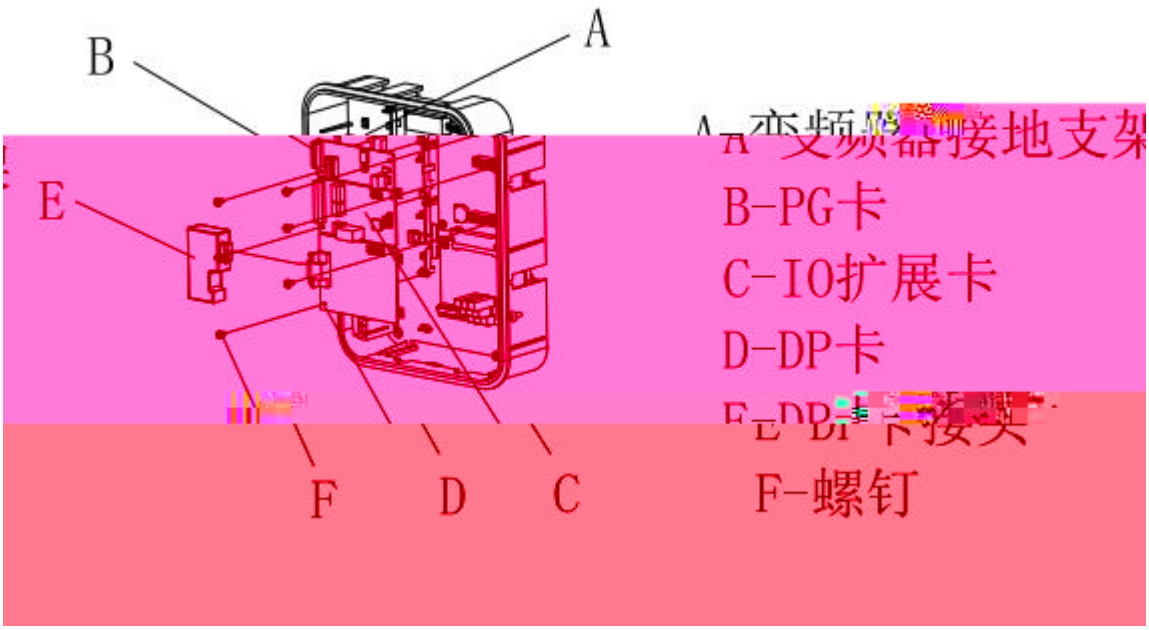
HF650



30kW

15KW DP





30KW

3.5 PGC2

GDHF-PGC2 PG 11

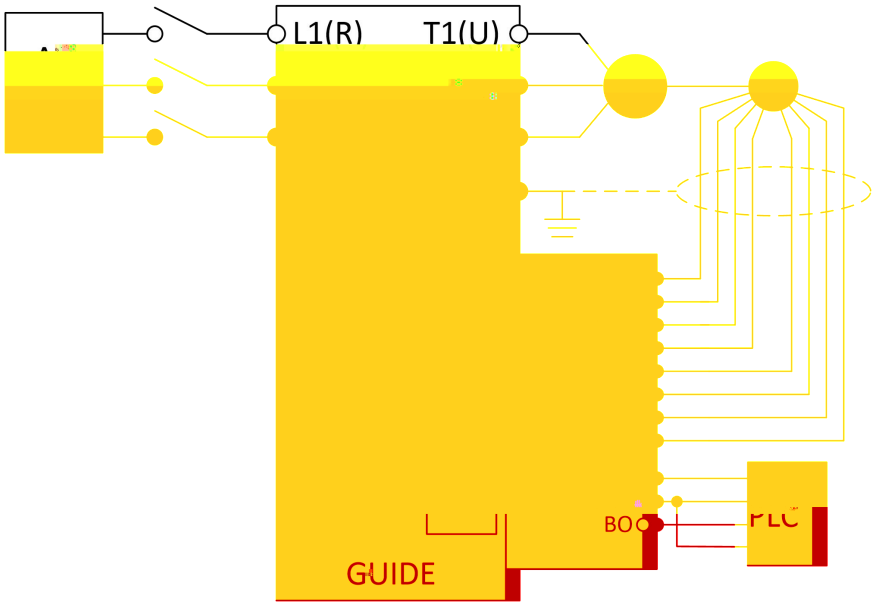
A+	A-	B+	B-	Z+	Z-

+15V	GND	AO	GND	BO

+15V,GND		…	15V ± 5%	300mA
A+,A- B+,B- Z+,Z-		0-80kHz	0-15V	…
AO,GND BO		0-50kHz	0-24V	…

PE PE

PGC2



1 PG

2 PG

3 PE

4 PG A- B- Z- GND

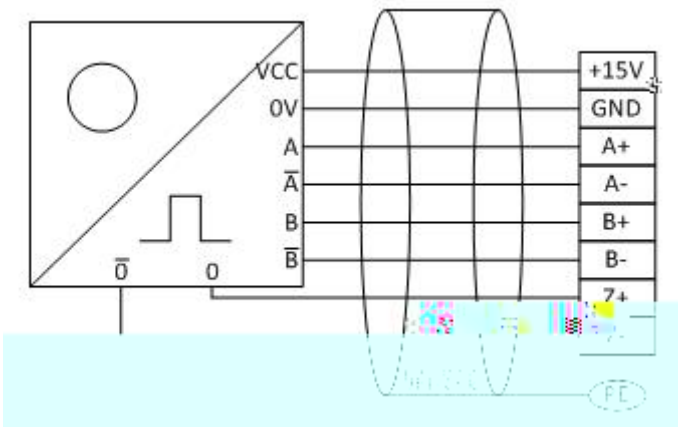
5 PGC2 15V RS-422

PGC2

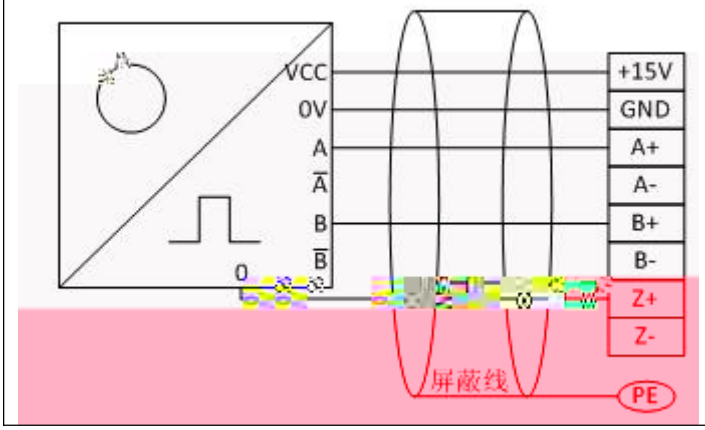
15V

1

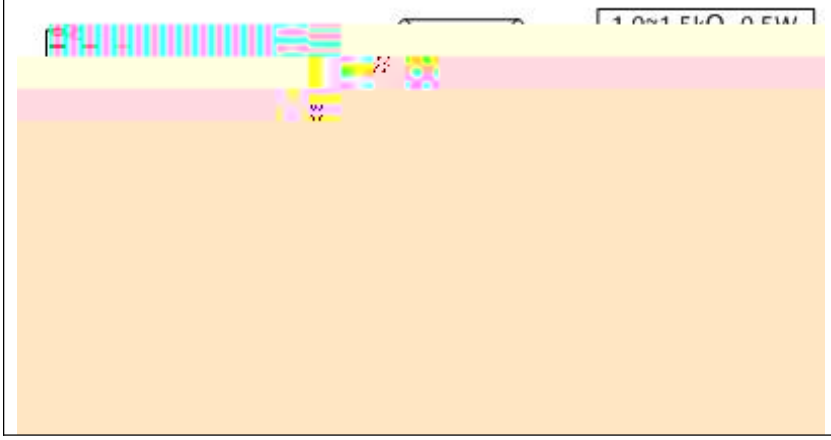
a

		
		HLE45-1024L-6F.AC
		RHI90N-ONAK1R61N-1024
		EC120P45-H6PR-1024

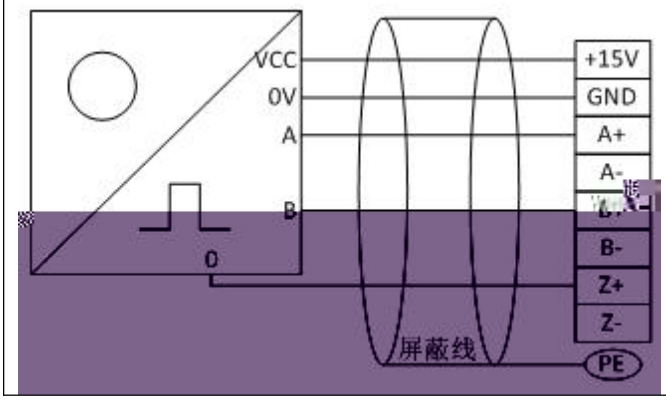
b

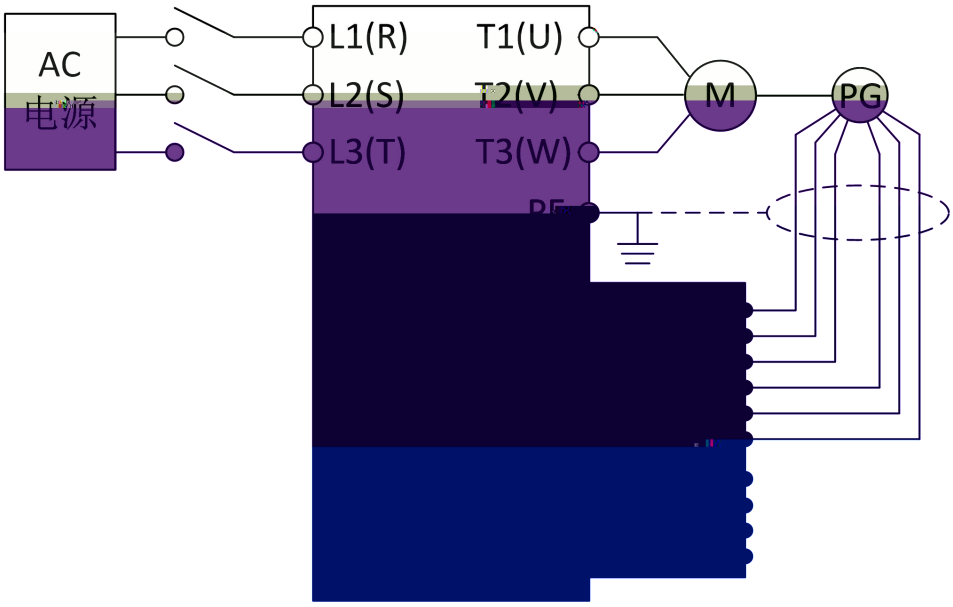
		
		HLE45-600L-3F.AC
		RVI78N-10CALA31N-1024
		EC120P45-P6PR-1024

2

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

3

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



1 PG

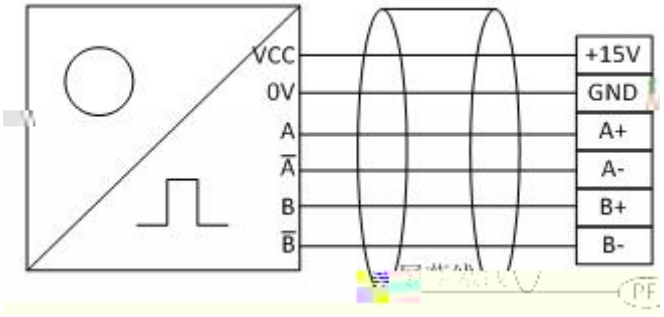
2 PG

3 PE

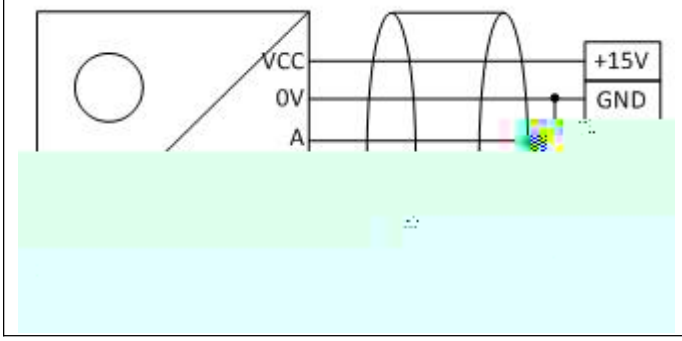
PGD2

1

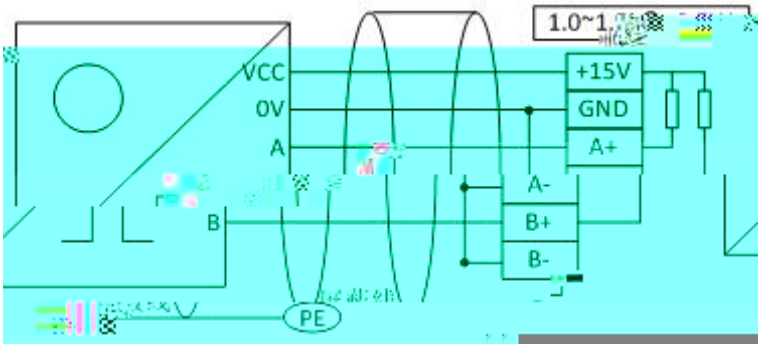
a

		
		HLE45-1024L-6F.AC
		RHI90N-ONAK1R61N-1024
		EC120P45-H6PR-1024

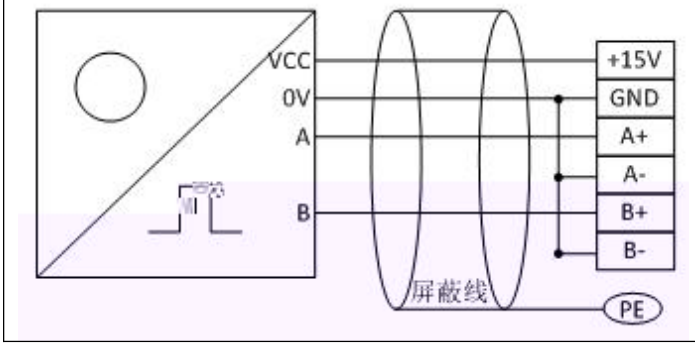
b

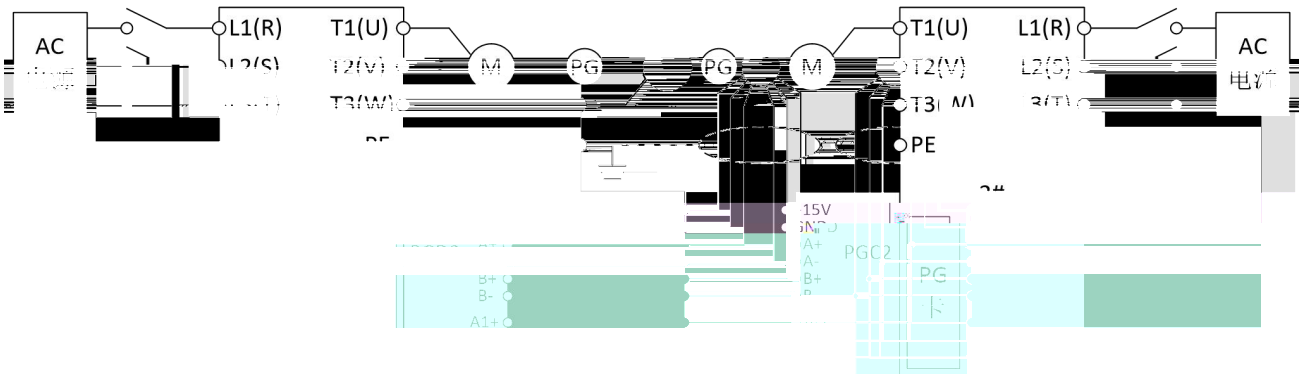
		
		HLE45-600L-3F.AC
		RVI78N-10CALA31N-1024
		EC120P45-P6PR-1024

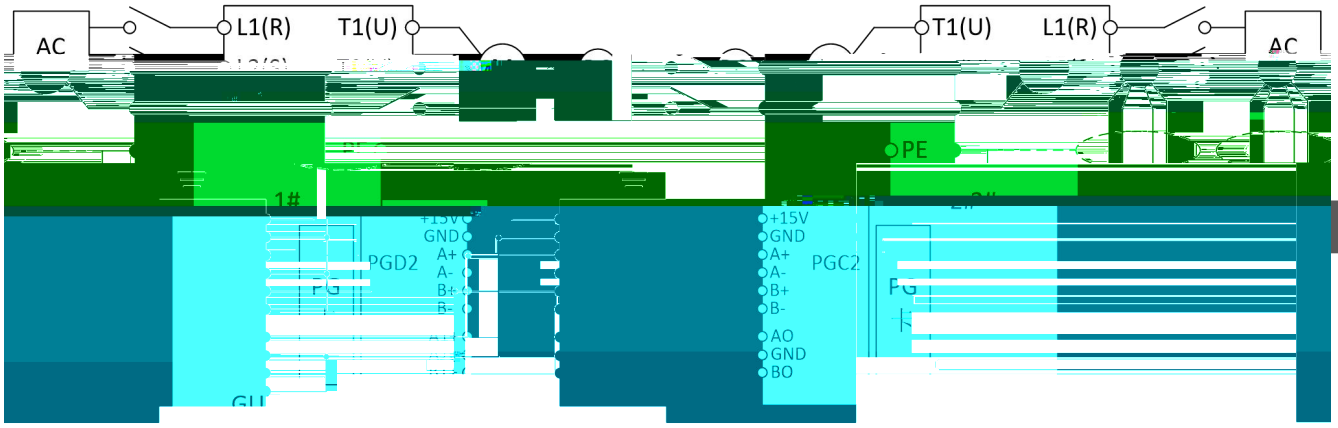
2

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

3

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


AC
L1(R)
T1(U)
M
PG
PG
M
T1(U)
L1(R)
AC
T2(V)
PE
15V
PGC2
PG


AC
L1(R)
T1(U)
T1(U)
L1(R)
AC
PE
1#
+15V
GND
A+
A-
B+
B-
PGD2
PG
+15V
GND
A+
A-
B+
B-
AO
GND
BO
PGC2
PG

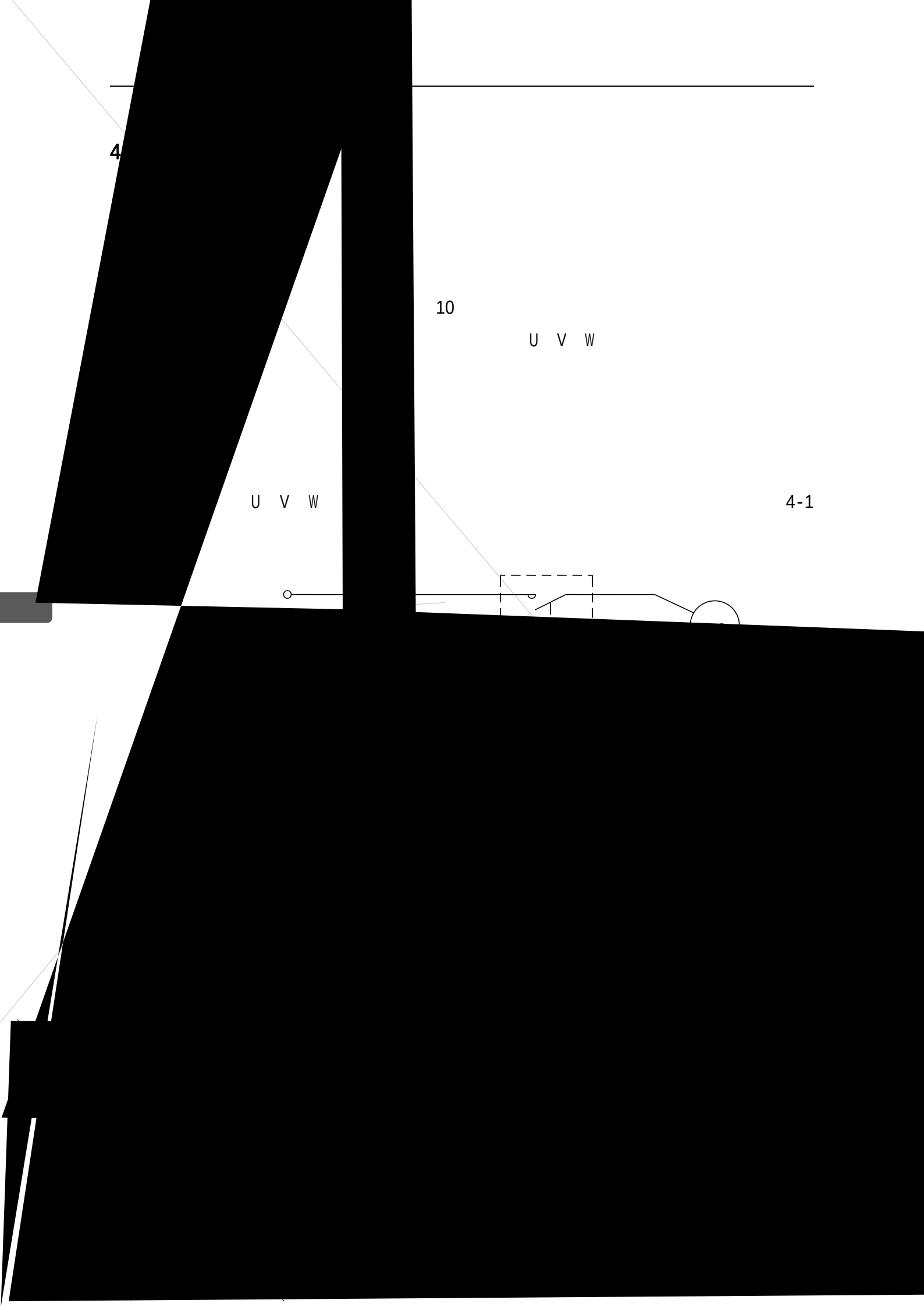
4

10

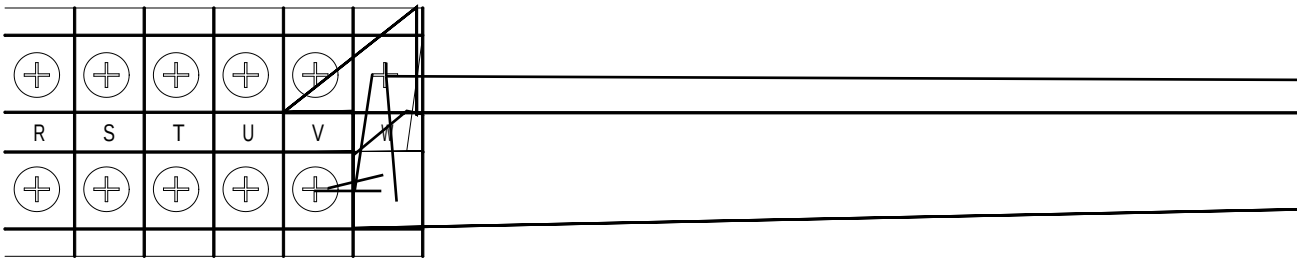
U V W

U V W

4-1



185kW~500kW



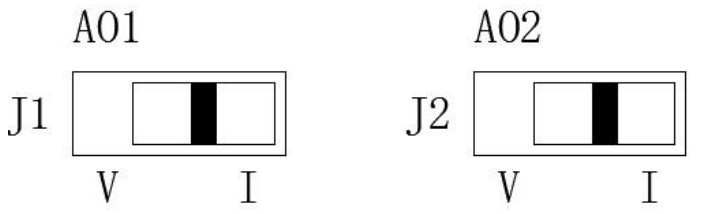
P(+)	
P1	37KW
N(-)	
R S T	
U V W	
DBR	160KW
PE	

4.3

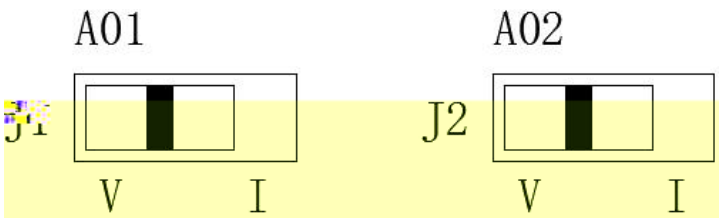
1

	1	2	3	4	5	6	7	8
	+10V	GND	AI1+	AI1-	AI2+	AI2-	AO1	AO2
	9	**10**	**11**	**12**	**13**	**14**	**15**	**16**
	DI1	DI2	DI3	DI4	DI5	DI6	DI7	DI8
	17	**18**	**19**	**20**	**21**	**22**	**23**	**24**
	PW	COM	PW	+24V	+24V	DO1	+24V	DO2
	25	**26**	**27**	**28**	**29**	**30**	**31**	
	+24V	DO3	DO4A	DO4C	DO4B	DO5A	DO5C	

2



a.



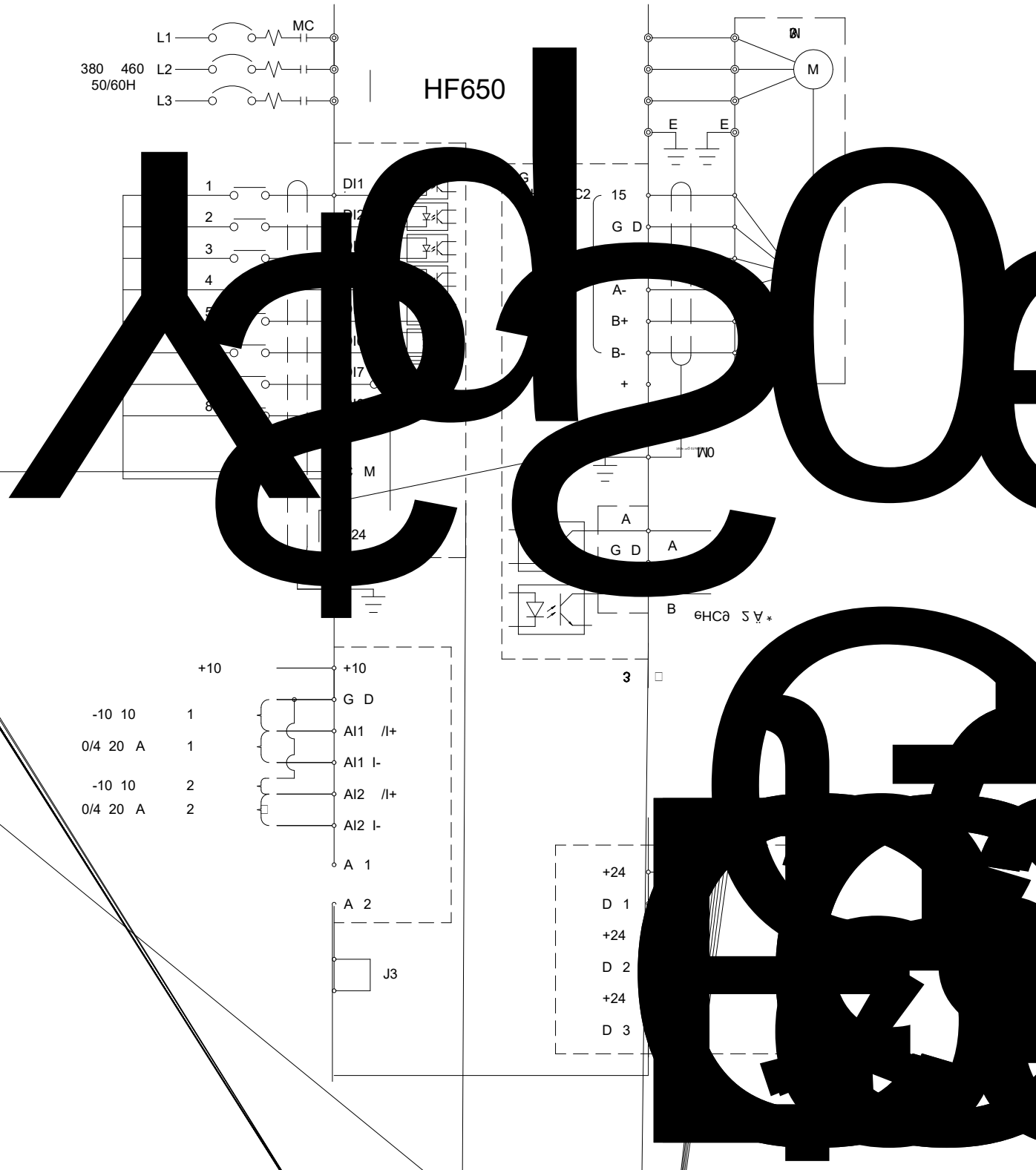
b.

3

1	+10V		10V								
2	GND					,					
3	AI1+/AV1			1					0/4	20mA	
			1					-10	10V		
4	AI1-		1								
5	AI2+/AV2			2					0/4	20mA	
			2					-10	10V		
6	AI2-		2								
7	AO1		1					0/4	20mA	J1	
		I	a			0	10V	J1		V	b
8	AO2		2					0/4	20mA	J2	
		I	a			0	10V	J2		V	b
9	DI1			1							
10	DI2			2							
11	DI3			3							
12	DI4			4							
13	DI5			5							
14	DI6			6							
15	DI7			7							
16	DI8			8							
17	PW										
18	COM	24V									
19	PW										
20	+24V	24V		+							
21	+24V	24V									
22	DO1			1					DC24V	50mA	
23	+24V	24V									
24	DO2			2					DC24V	50mA	

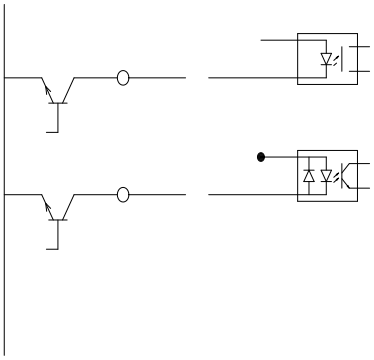
25	+24V	24V						
26	DO3			3				DC24V 50mA
27	DO4A			4				
					250VAC	3A	COS =0.4	
		30VDC	1A					
28	DO4C			4				
29	DO4B			4				
					250VAC	3A	COS =0.4	
		30VDC	1A					
30	DO5A			5				
					250VAC	2A	COS =0.4	
		30VDC	1A					
31	DO5C			5				

4.4

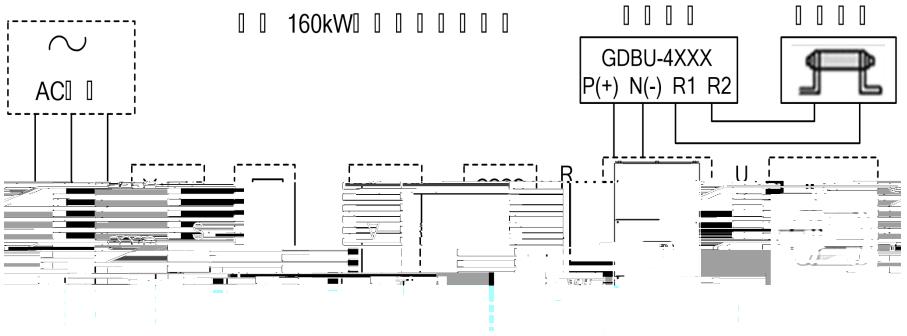

HF650
L1
L2
L3
MC
380 460
50/60H
M
E
E
DI1
1
2
3
4
15
G D
A-
B+
B-
+
A
G D
A
B
+10
+10
G D
-10 10 1
0/4 20 A 1
AI1 /I+
AI1 I-
-10 10 2
0/4 20 A 2
AI2 /I+
AI2 I-
A 1
A 2
J3
+24
D 1
+24
D 2
+24
D 3

4.5

0V NPN



4.6



	1 2
AC	1 2 3

4.7

	A	/ mm² CEFR 40%	A (AC-3)
HF650-0R4-4	3.3	2.5	9
HF650-0R7-4	4.8	2.5	9
HF650-1R5-4	5.7	2.5	9
HF650-2R2-4	10.2	2.5	12
HF650-3R7-4	15	2.5	18
HF650-5R5-4	18	2.5	18
HF650-7R5-4	24	2.5	25
HF650-011-4	32	4	32
HF650-015-4	41	4	50
HF650-018-4	47	6	50
HF650-022-4	65	10	65
HF650-030-4	75	10	80
HF650-037-4	94	16	95
HF650-045-4	115	16	115
HF650-055-4	155	25	150
HF650-075-4	188	35	205
HF650-090-4	215	50	245
HF650-110-4	265	70	300
HF650-132-4	330	95	410
HF650-160-4	365	95	410
HF650-185-4	438	120	475
HF650-220-4	485	150	620
HF650-250-4	545	70*2	620
HF650-280-4	610	95*2	620
HF650-315-4	668	120*2	2*410
HF650-355-4	720	120*2	2*410
HF650-400-4	820	150*2	2*475
HF650-500-4	930	120*4	2*475

4.8

		2%		1%	
HF650-0R4-4	0.4 kW	2.2A	6.4 mH	2.2A	3.2mH
HF650-0R7-4	0.7 kW	4A	3.5 mH	4A	1.8 mH
HF650-1R5-4	1.5 kW	6A	2.4 mH	6A	1.2 mH
HF650-2R2-4	2.2 kW	7A	2.0 mH	7A	1.0 mH
HF650-3R7-4	3.7 kW	12A	1.1 mH	12A	0.6 mH
HF650-5R5-4	5.5kW	19A	743uH	19A	371 uH
HF650-7R5-4	7.5kW	22A	644 uH	22A	322 uH
HF650-011-4	11kW	28A	493 uH	28A	247 uH
HF650-015-4	15kW	38A	368 uH	38A	184 uH
HF650-018-4	18.5kW	49A	283 uH	49A	141 uH
HF650-022-4	22kW	57A	247 uH	57A	123 uH
HF650-030-4	30kW	76A	184 uH	76A	92 uH
HF650-037-4	37kW	88A	159 uH	88A	79 uH
HF650-045-4	45kW	113A	123 uH	113A	62 uH
HF650-055-4	55kW	131A	106 uH	131A	53 uH
HF650-075-4	75kW	178A	78 uH	178A	39 uH
HF650-090-4	90kW	227A	62 uH	227A	31 uH
HF650-110-4	110kW	259A	54 uH	259A	27 uH
HF650-132-4	132kW	320A	44 uH	320A	22 uH
HF650-160-4	160kW	398A	35 uH	398A	18 uH

HF650-185-4	185kW	446A	31 uH	446A	16 uH
HF650-220-4	220kW	528A	26 uH	528A	13 uH
HF650-250-4	250kW	573A	24 uH	573A	12 uH
HF650-280-4	280KW	657A	21 uH	657A	11 uH
HF650-315-4	315kW	735A	19 uH	735A	10 uH
HF650-355-4	355kW	805A	17 uH	805A	9 uH
HF650-400-4	400kW	856A	16 uH	856A	8 uH
HF650-500-4	500kW	1116A	13 uH	1116A	7 uH

4.9

160kW (100%

)

		Ω	Ω	KW 30% Kc	KW 50% Kc
HF650-0R4-4	0.4 kW	750	115	≥0.2	≥0.3
HF650-0R7-4	0.7 kW	750	115	≥0.2	≥0.35
HF650-1R5-4	1.5 kW	400	100	≥0.5	≥0.7
HF650-2R2-4	2.2 kW	250	78	≥0.8	≥1
HF650-3R7-4	3.7 kW	100	64	≥2.0	≥2.5
HF650-5R5-4	5.5kW	100	40	≥2.0	≥2.5
HF650-7R5-4	7.5kW	75	40	≥3.0	≥3.5
HF650-011-4	11kW	50	40	≥4.0	≥5.2
HF650-015-4	15kW	40	32	≥5	≥6.5

HF650-018-4	18.5kW	32	24	≥ 6	≥ 8.0
HF650-022-4	22kW	24	20	≥ 8	≥ 11
HF650-030-4	30kW	22	20	≥ 10	≥ 13
HF650-037-4	37kW	21	20	≥ 12	≥ 16
HF650-045-4	45kW	13	8	≥ 15	≥ 20
HF650-055-4	55kW	10	8	≥ 20	≥ 26
HF650-075-4	75kW	7.5	6	≥ 26	≥ 35
HF650-090-4	90kW	6.8	3.5	≥ 29	≥ 38
HF650-110-4	110kW	5.1	3.5	≥ 38	≥ 50
HF650-132-4	132kW	4.2	3.5	≥ 46	≥ 60
HF650-160-4	160kW	3.6	2.5	≥ 54	≥ 71

1 Kc

2 Kc a 20 Kc=10% - 20%

b Kc=30%

c Kc=40 - 50%

3

4.10 EMC

1 EMC

EMC electromagnetic compatibility

EMC

EMC

EMC

EMC

EMC

2 EMC

EMC

a

b PWM

c

d

3 EMC

EMC

EMC

5 EMC

a

360

b

4

3 1

PLC

20cm

20cm

90

c

EMC

d

50m

e

5.

5.1

HF650 F1 LOCAL/REMOTE

F2 RUN STOP

RUN STOP

LOCAL/REMOTE /

5.3

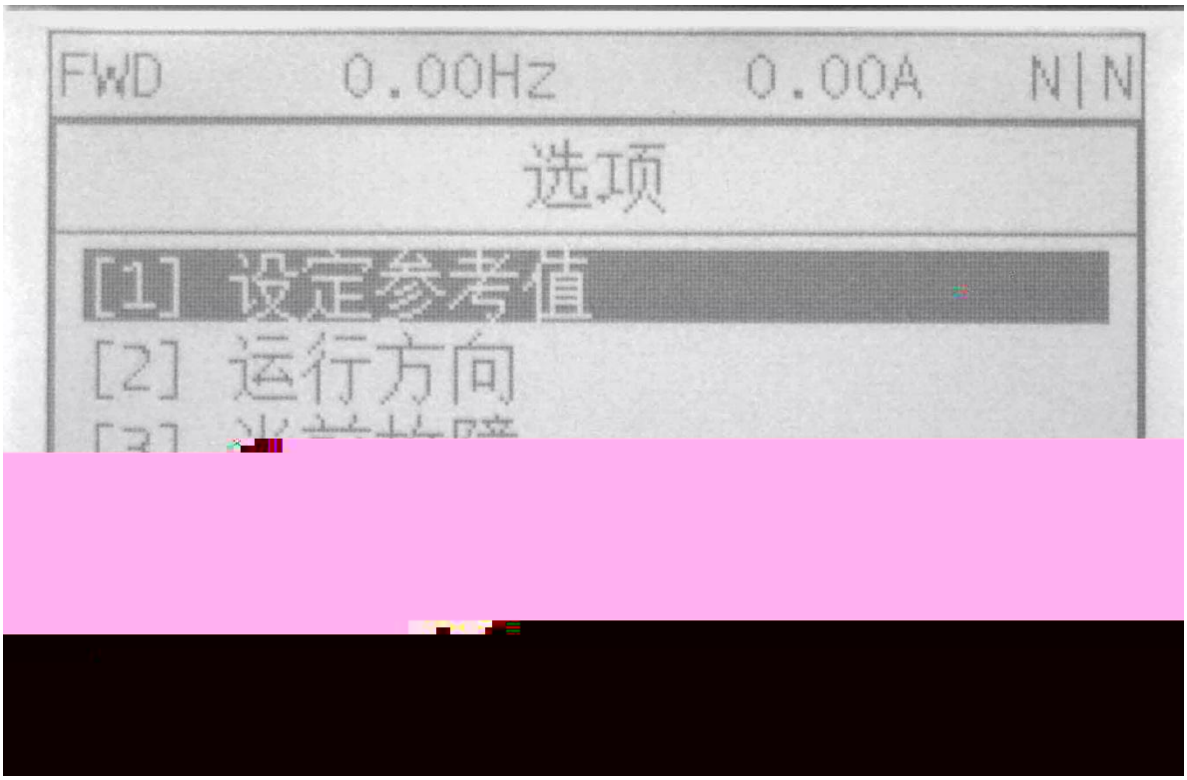
	FWD REV
	:HZ
	A
	N|N W E

3

F1 F2 “ ” “ ” “ ”

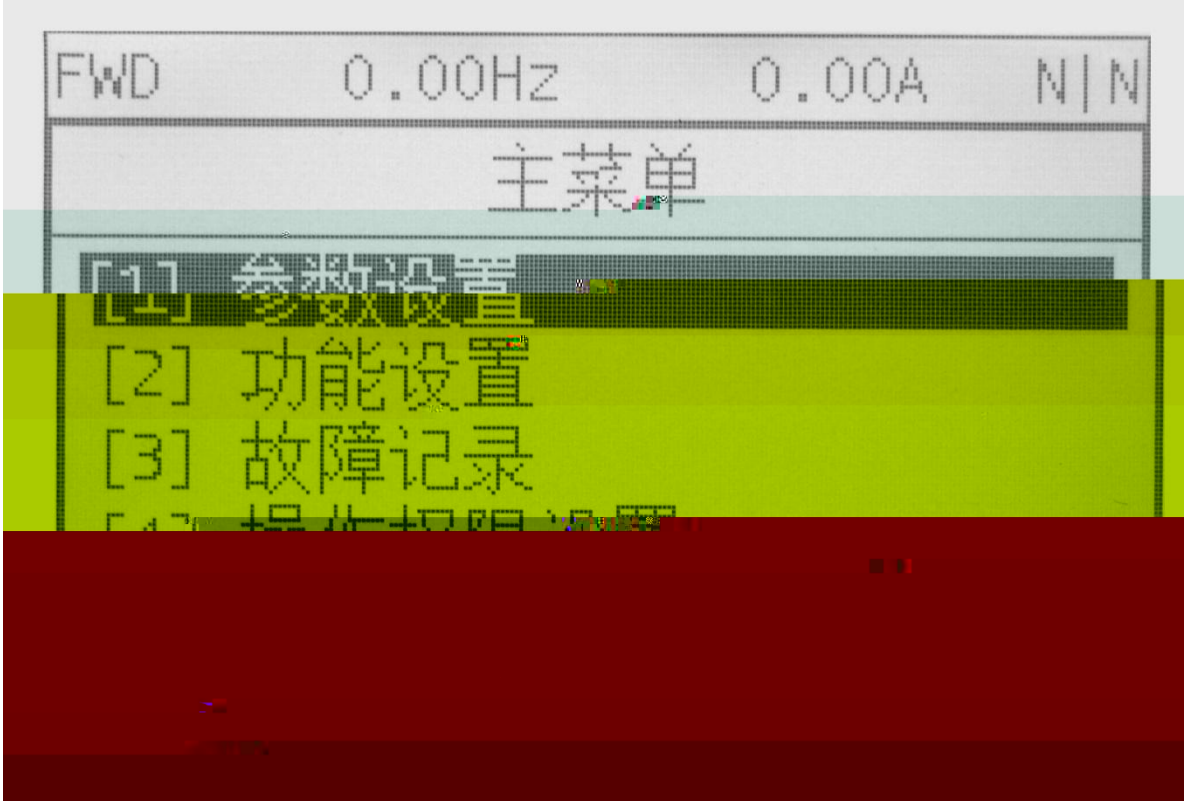
“ ” “ ”

ENTER



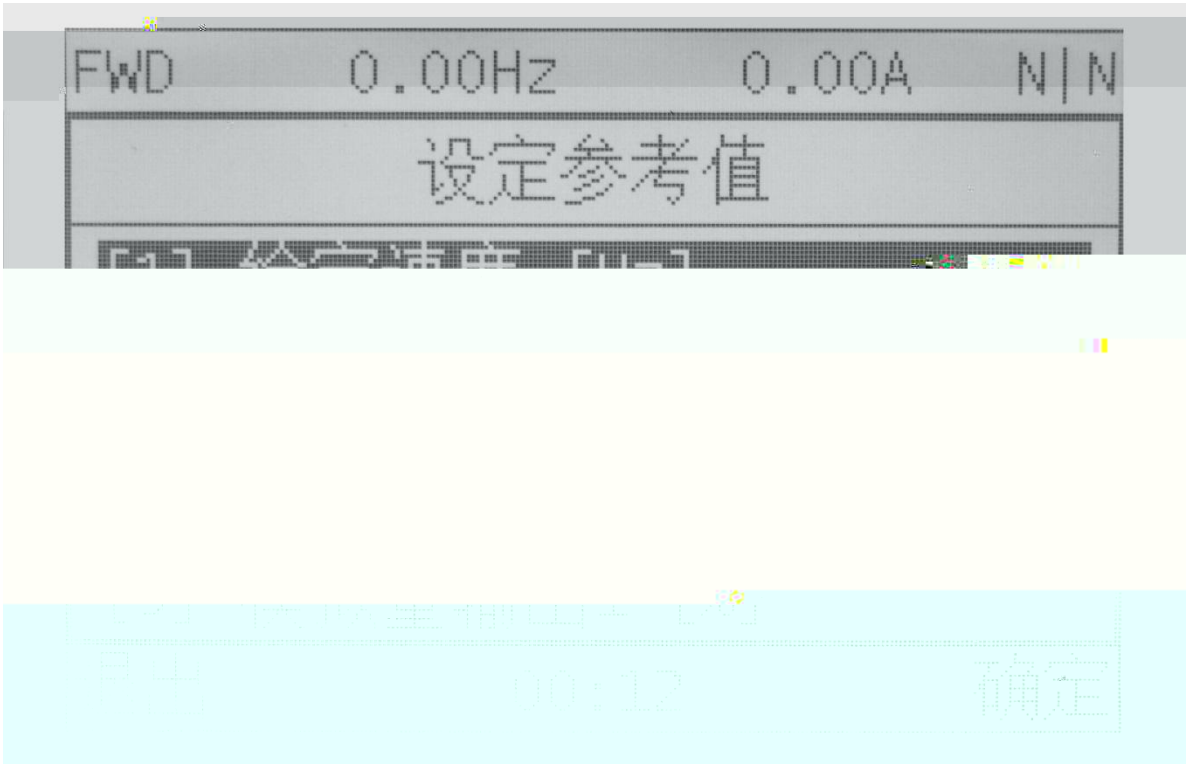
1	Reference Set	
2	Change Direction	
3	Current Error	
4	Current Warnning	

5	Reset Error	
6	Monitor Setting	
7	Firmware Version	
8	Menu Language	



1	Parameter Setting	
2	Function Setting	
3	Fault Record	
4	Access Permissions	
5	Display Setting	

5.4



1 Reference Set

Reference Set	Speed	[Hz]	Hz
		[%]	%
	Torque	[%]	%
	Torque limiter	[%]	%
	1	[%]	1
	2	[%]	2

2 Change Direction

3 Current Error

4 Current Warnning

5 Reset Error

6 Monitor Setting

7 Firmware Version

8 Menu Language

5.5

1 Parameter Setting

2 Function Setting

1	MotoTuning I	
2	MotoTuning II	
3	MotoTuning III	
4	DC-Link Tuning (AFE)	AFE

5	Shortcut Paras Setting	
6	Parameter Initialization	
7	Delete Fault Records	
8	System Restart	
9	Backup Parameter	
10	Recover Parameter	
11	Compare Parameter	

1

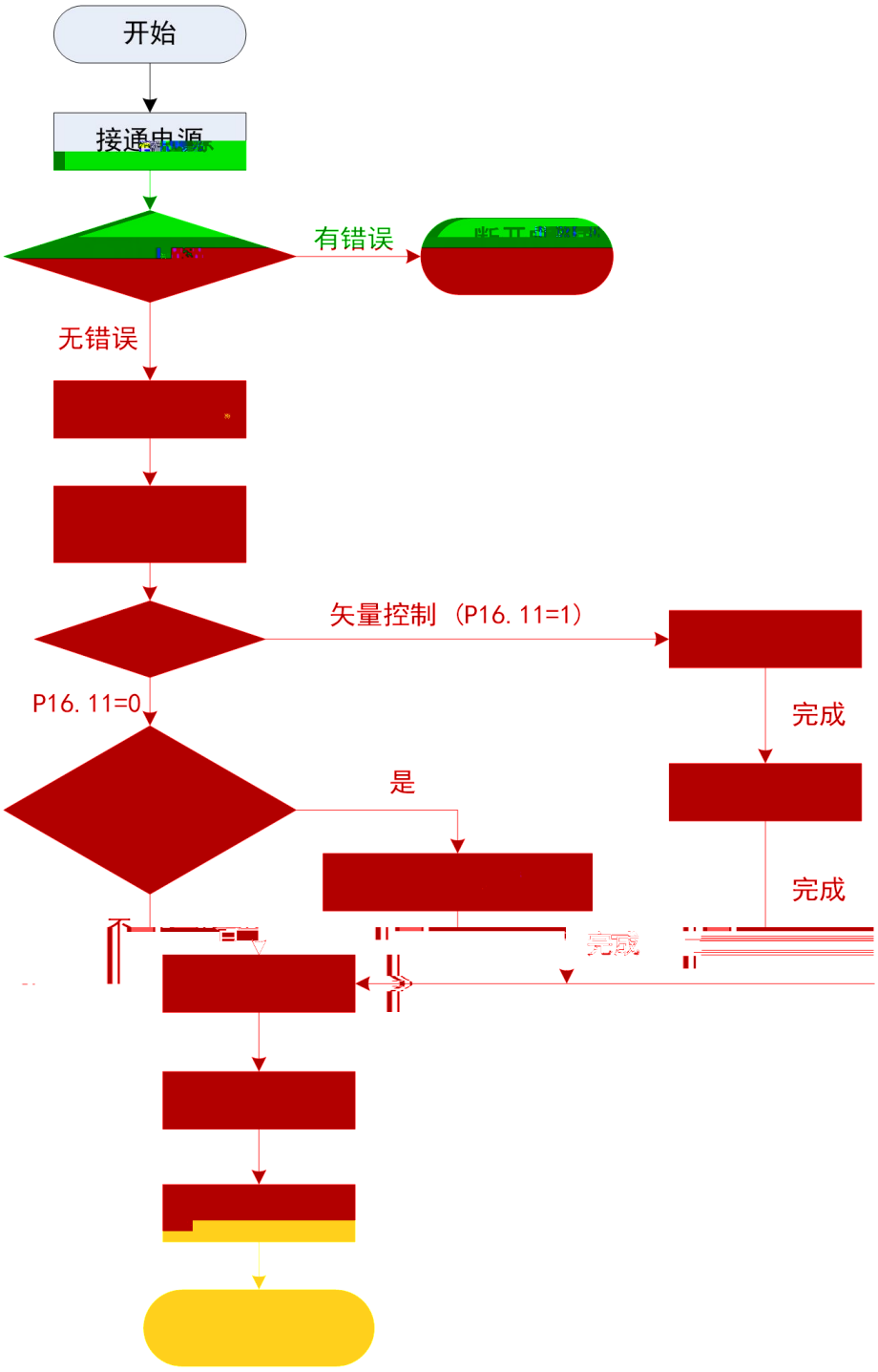
2

5

▼ ▲ “Enter”

6.

6.1



6.2.3

5.4 “

		DP]Mo]	
P8.3		]	1
P7.0	[1]	0~300[%]	180%
P7.4	[1]	0~300[%]	235%
P7.19	[1]	100.0 720.0[%]	120%

6.2.5

1

6.2.6

HF650

ظم

4

5 4 50Hz

6 STOP

6.2.8

1

2

3

4

5

6 STOP

1

2

1

2

6.2.9

7.

7.1 P0

P0.0		[0] [1]	0 1	0	
P0.1			0 26	14	
P0.3		[0]50HZ [1]60HZ	0 1	0	
P0.4					

7.2 P2

P2.0	[0] [1] [2]	0 2	0	8.1
P2.1	[0] [1]DP	0 1	0	
P2.2	[0] [1]	0 1	0	
P2.3		0 5	1	
P2.33		1 100min	10	10min

P3.4	5		0 32	7	
P3.5	6		0 32	8	
P3.6	7		0 32	0	
P3.7	8		0 32	0	
P3.12		[0] [1]	0 1	0	

0		
1		
2		
3		
4	.NC	
5		</RST
6	1 0	8.2
7	2 1	
8	3 2	
9	4 3	
10		8.10
11		
12		
13	.NC	
14		
15	.NC	
16		
17	0	1 0 00 1 01 2 10 3 11 4
18	1	

7.4 P4

P4.0	1		0 64	0	
P4.1	2		0 64	0	
P4.2	3		0 64	0	
P4.3	4		0 64	0	
P4.4	5		0 64	0	
P4.16	1		0 500	0	
P4.17	2		0 500	0	
P4.18	3		0 500	0	
P4.19	4		0 500	0	

0		
1		8.3
2		ON
3		8.3
4		
5		
6	1	[6] [9]
7	2	
8	3	
9	4	
10	FUNC 10	
11		
12		
13		
14		
15		
16	FUNC 16	
17	0	1

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

7.5 P5

P5.0	AI1	[0] [1]0 +10V [2]-10 +10V [3]0 20mA	0 3	1	
P5.1	AI1	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 [V]	8.4
P5.5	AI1	AI1	0.00 20.00 [mA]	0.000 [mA]	8.4
P5.6	AI1	AI1	-300.0 300.0 [%]	0.0 [%]	8.4
P5.7	AI1	AI1	-10.00 10.00 [V]	10.000 [V]	8.4
P5.8	AI1	AI1	0.00 20.00 [mA]	20.000 [mA]	8.4
P5.9	AI1	AI1	-300.0 300.0 [%]	100.0 [%]	8.4
P5.18	AI2	[0] [1]0 +10V [2]-10 +10V [3]0 20mA	0 3	3	

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 [%]	

7.6 P6

P6.0	AO1	7-1	0 14	2	
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	
P6.16	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		

7.7 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					

P7.22	[4]		4	100.0 [%]	720.0 [%]	120.0 [%]	8.6
P7.23	1	M1	1	0.00 [s]	3.00 [s]	0.50 [s]	8.6
P7.24	1	M					

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
P7.71	1	[0] [1]	0 1	0	8.6
P7.73		[0] [1]	0 1	0	
P7.74			300 500 [V]	460 [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]	

7.8 1 P8

P8.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
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	
P8.13		[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	0.0 300.0 [s]	4.00 [s]	8.7
P8.19	3		0.0 300.0 [%]	240.0 [%]	8.7

P8.20	3	P8.17 P8.19	0.0 300.0 [s]	7.00 [s]	8.7
P8.21	4		0.0 300.0 [%]	300.0 [%]	8.7
P8.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	8.7
P8.23	5		0.0 300.0 [%]	300.0 [%]	8.7
P8.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	8.7
P8.25	6		0.0 300.0 [%]	300.0 [%]	8.7
P8.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	8.7
P8.27	7		0.0 300.0 [%]	300.0 [%]	8.7
P8.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	8.7
P8.29	8		0.0 300.0 [%]	300.0 [%]	8.7
P8.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	8.7
P8.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	8.7
P8.33			0.1 10.0	1.0	8.7
P8.34	1		0.0 300.0 [%]	100.0 [%]	8.7
P8.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	8.7
P8.36	2		0.0 300.0 [%]	200.0 [%]	8.7
P8.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	8.7
P8.38	3		0.0 300.0 [%]	240.0 [%]	8.7

P8.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	8.7
P8.40	4		0.0 300.0 [%]	300.0 [%]	8.7
P8.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	8.7
P8.42	5		0.0 300.0 [%]	300.0 [%]	8.7
P8.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	8.7
P8.44	6		0.0 300.0 [%]	300.0 [%]	8.7
P8.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	8.7
P8.46	7		0.0 300.0 [%]	300.0 [%]	8.7
P8.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	8.7
P8.48	8		0.0 300.0 [%]	300.0 [%]	8.7
P8.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	8.7
P8.54			0.0 300.0 [%]	0.0 [%]	
P8.55		[0] [1]	0 1	0	
P8.56			0.00 300.00 [s]	3.00 [s]	
P8.57		[0] [1]	0 1	1	
P8.58			0.00 300.00 [s]	1.50 [s]	

7.9 2 P9

P9.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
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	
P9.13		[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
P9.18	2	P9.15 P9.17	0.0 300.0 [s]	4.00 [s]	8.7
P9.19	3		0.0 300.0 [%]	240.0 [%]	8.7

P9.39	3	P9.36	P9.38	0.0 300.0 [s]	7.00 [s]	8.7
P9.40	4			0.0 300.0 [%]	300.0 [%]	8.7
P9.41	4	P9.38	P9.40	0.0 300.0 [s]	10.00 [s]	8.7
P9.42	5			0.0 300.0 [%]	300.0 [%]	8.7
P9.43	5	P9.40	P9.42	0.0 300.0 [s]	10.00 [s]	8.7
P9.44	6			0.0 300.0 [%]	300.0 [%]	8.7
P9.45	6	P9.42	P9.44	0.0 300.0 [s]		

7.10 3 P10

P10.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P10.3		[0] [1]	0 1	0	8.7
P10.6			0.00 300.00 [s]	0.00 [s]	8.7
P10.7			0.00 300.00 [s]	0.00 [s]	8.7
P10.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P10.13		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	8.7
P10.14			0.1 10.0	1.0	8.7
P10.15	1		0.0 300.0 [%]	100.0 [%]	8.7
P10.16	1	P10.15	0.0 300.0 [s]	3.00 [s]	8.7
P10.17	2		0.0 300.0 [%]	200.0 [%]	8.7
P10.18	2	P10.15 P10.17	0.0 300.0 [s]	4.00 [s]	8.7
P10.19	3		0.0 300.0 [%]	240.0 [%]	8.7

P10.20	3	P10.17	P10.19	0.0 [s]	300.0 [s]	7.00 [s]	8.7
P10.21	4			0.0 [%]	300.0 [%]	300.0 [%]	8.7
P10.22	4	P10.19	P10.21	0.0 [s]	300.0 [s]	10.00 [s]	8.7
P10.23	5			0.0 [%]	30000 [%]	300.0 [%]	8.7
P10.24	5	P10.21	P10.23	0.0 [s]	300.0 [s]	10.00 [s]	8.7
P10.25	6			0.0 [%]	300.0 [%]	300.0 [%]	8.7
P10.26	6	P10.23	P10.25	0.0 [s]	300.0 [s]	10.00 [s]	8.7
P10.27	7			0.0 [%]	300.0 [%]	300.0 [%]	8.7
P10.28	7	P10.25	P10.27	0.0 [s]	300.0 [s]	10.00 [s]	8.7
P10.29	8						

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		

7.11 4 P11

P11.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
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	
P11.13		[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
P11.18	2	P11.15 P11.17	0.0 300.0 [s]	4.00 [s]	8.7
P11.19	3		0.0 300.0 [%]	240.0 [%]	8.7

P11.20	3	P11.17	P11.19	0.0 300.0 [s]	7.00 [s]	8.7
P11.21	4			0.0 300.0 [%]	300.0 [%]	8.7
P11.22	4	P11.19	P11.21	0.0 300.0 [s]	10.00 [s]	8.7
P11.23	5			0.0 300.0 [%]	300.0 [%]	8.7
P11.24	5	P11.21	P11.23	0.0 300.0 [s]	10.00 [s]	8.7
P11.25	6			0.0 300.0 [%]	300.0 [%]	8.7
P11.26	6	P11.23	P11.25	0.0 300.0 [s]	10.00 [s]	8.7
P11.27	7			0.0 300.0 [%]	300.0 [%]	8.7
P11.28	7	P11.25	P11.27	0.0 300.0 [s]	10.00 [s]	B ?ñ8.7
P11.29	8					

P11.39	3	P11.36	P11.38	0.0 [s]	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 [s]	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 [s]	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 [s]	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 [s]	300.0 [s]	10.00 [s]	8.7
P11.48	8			0.0 [%]	300.0 [%]		

7.12 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	3		0.0 3000.0	35.0	
P12.5	4		0.0 3000.0	50.0	
P12.6	5		0.0 3000.0	50.0	
P12.7	6		0.0 3000.0	50.0	
P12.8	7		0.0 3000.0	50.0	
P12.9	8		0.0 3000.0	50.0	
P12.10	9		0.0 3000.0	50.0	
P12.11	10		0.0 3000.0	50.0	
P12.12	11		0.0 3000.0	50.0	
P12.13	12		0.0 3000.0	50.0	
P12.14	13		0.0 3000.0	50.0	
P12.15	14		0.0 3000.0	50.0	
P12.16	15		0.0 3000.0	50.0	
P12.17	16		0.0 3000.0	50.0	
P12.22			0.0 20.0 [%]	2.0 [%]	8.8
P12.23			0.0 20.0 [%]	0.0 [%]	8.8
P12.24			0.0 200.0 [%]	30.0 [%]	8.8
P12.25			0.0 200.0 [%]	20.0 [%]	8.8
P12.26			0.00 2.00 [s]	0.00 [s]	8.8

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

7.13 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

7.14 3 P14

P14.0		[0] [1]	0	1	1	8.8
P14.1		[0][%] [1][Hz] [2][rpm]	0	2	1	
P14.2	1		0.0	3000.0	10.0	
P14.3	2		0.0	3000.0	20.0	
P14.4	3		0.0	3000.0	35.0	
P14.5	4		0.0	3000.0	50.0	
P14.6	5		0.0	3000.0	50.0	
P14.7	6		0.0	3000.0	50.0	
P14.8	7		0.0	3000.0	50.0	
P14.9						

P14.27			0.00 2.00 [s]	0.00 [s]	8.8
P14.28			0.00 2.00 [s]	0.07 [s]	8.8
P14.29			0.00 2.00 [s]	0.07 [s]	8.8
P14.32			0.0 20.0 [%]	0.0 [%]	8.8
P14.33			0.0 20.0 [%]	0.0 [%]	8.8
P14.34			0.00 2.00 [s]	0.00 [s]	8.8
P14.35			0.00 2.00 [s]	0.00 [s]	8.8
P14.36			0.00 2.00 [s]	0.50 [s]	8.8
P14.37			0.00 2.00 [s]	0.50 [s]	8.8

7.15 4 P15

P15.0		[0] [1]	0 1	1	8.8
P15.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P15.2	1		0.0 3000.0	10.0	
P15.3	2		0.0 3000.0	20.0	
P15.4	3		0.0 3000.0	35.0	
P15.5	4		0.0 3000.0	50.0	
P15.6	5		0.0 3000.0	50.0	
P15.7	6		0.0 3000.0	50.0	
P15.8	7		0.0 3000.0	50.0	
P15.9	8		0.0 3000.0	50.0	
P15.10	9		0.0 3000.0	50.0	
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

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	00	300	20 0	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	N6.40					

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 [%]	

7.17 2 V/F P17

P17.0			320 460 [V]	380 [V]	
P17.2			0.0 4000.0 [kW]	 [kW]	
P17.3			320 460 [V]	380 [V]	
P17.4			0.0 6500.0 [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	0.00 300.00 [Hz]	50.00 [Hz]	
P17.25			0.0 120.0 [%]	100.0 [%]	
P17.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	8.9
P17.27			0.0 200.0 [%]	100.0 [%]	8.9
P17.30			0.0 100.0 [%]	0.0 [%]	8.9
P17.33	V/F	V/F	0 6	2	8.9
P17.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P17.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P17.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P17.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P17.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P17.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P17.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P17.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P17.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P17.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P17.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P17.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P17.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	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			0.00 5.00 [Hz]	0.00 [Hz]	8.9
P17.59			0.0 1000.0 [%]	100.0 [%]	
P17.60			0.0 1000.0 [%]	100.0 [%]	
P17.61			0.0 1000.0 [%]	100.0 [%]	
P17.62			0.0 1000.0 [%]	100.0 [%]	
P17.64	V/F	V/F	0.0 1000.0 [%]	100.0 [%]	8.9
P17.66		V/F	0.0 1000.0 [%]	100.0 [%]	
P17.67			0.0 1000.0 [%]	100.0 [%]	
P17.68			0.0 1000.0 [%]	100.0 [%]	
P17.69			0.0 1000.0 [%]	100.0 [%]	
P17.70			0.0 1000.0 [%]	100.0 [%]	

7.18 3 V/F P18

P18.0			320 460 [V]	380 [V]	
P18.2			0.0 4000.0 [kW]	 [kW]	
P18.3			320 460 [V]	380 [V]	
P18.4			0.0 6500.0 [A]	 [A]	
P18.5			0.0 300.0 [Hz]	50.0 [Hz]	
P18.6			0 6000 [rpm]	1465 [rpm]	
P18.7			2 12 [pole]	4 [pole]	8.9
P18.9			0 7200 [rpm]	1500 [rpm]	8.9
P18.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P18.12			1.00 10.00 [kHz]	3.00 [kHz]	8.9
P18.14	V/F	[0] V/F [1] V/F [2]	0 3	0	8.9
P18.15		[0] [1]	0 1	0	8.9
P18.16			2 500 [ms]	500 [ms]	
P18.17	V/F	[0] [1]	0 1	0	
P18.18			10 1000 [ms]	200 [ms]	
P18.19		[0] [1]	0 1	0	

P18.22		0.00 [s]	100.00 [s]	0.00 [s]	8.9
P18.23	V/F				

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 [%]	

7.19 4 V/F P19

P19.0			320 460 [V]	380 [V]	
P19.2			0.0 4000.0 [kW]	 [kW]	
P19.3			320 460 [V]	380 [V]	
P19.4			0.0 6500.0 [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		[0] [1]	0 1	0	8.9
P19.16			2 500 [ms]	500 [ms]	
P19.17	V/F	[0] [1]	0 1	0	
P19.18			10 1000 [ms]	200 [ms]	
P19.19		[0] [1]	0 1	0	

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]	
P19.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P19.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P19.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P19.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P19.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P19.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P19.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P19.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P19.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P19.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P19.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P19.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	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			0.0 1000.0 [%]	100.0 [%]	
P19.61			0.0 1000.0 [%]	100.0 [%]	
P19.62			0.0 1000.0 [%]	100.0 [%]	
P19.64	V/F	V/F	0.0 1000.0 [%]	100.0 [%]	8.9
P19.66		V/F	0.0 1000.0 [%]	100.0 [%]	
P19.67			0.0 1000.0 [%]	100.0 [%]	
P19.68			0.0 1000.0 [%]	100.0 [%]	
P19.69			0.0 1000.0 [%]	100.0 [%]	
P19.70			0.0 1000.0 [%]	100.0 [%]	

7.20 1 P20

P20.0		[0] [1]	0 1	0	8.10
P20.1		[0] [1] 1 [2] 2 [3] [4] P20.3 [5]DP [6]MODBUS [7]	0 7	0	8.10
P20.2			0 7	0	
P20.3			-300.0 300.0 [%]	0.0 [%]	8.10
P20.5			0 1000 [ms]	0 [ms]	
P20.6			0.0 200.0 [%]	100.0 [%]	8.10
P20.7		[0] [1] P20.8 P20.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	8.10
P20.8		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P20.9		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P20.11			0 1000 [ms]	0 [ms]	
P20.12	2x		0.0 300.0 [%]	100.0 [%]	

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 [%]	

P20.31			0.0 100.0 [%]	5.0 [%]	
P20.32			0.0 100.0 [%]	5.0 [%]	
P20.34		[0] [1]	0 1	0	8.10
P20.35			0.0 100.0 [s]	0.0 [s]	
P20.36			50.0 150.0 [%]	110.0 [%]	
P20.37			0.0 150.0 [%]	100.0 [%]	8.10
P20.38			0.0 100.0 [%]	25.0 [%]	8.10
P20.39			0.0 120.0 [%]	100.0 [%]	8.10
P20.40			0.0 150.0 [%]	100.0 [%]	8.10
P20.41			0.0 150.0 [%]	135.0 [%]	
P20.42		[0] [1]	0 1	1	
P20.43			25 1000 [ms]	75 [ms]	
P20.44			25 1000 [ms]	250 [ms]	
P20.45			0.0 100.0 [%]	22.0 [%]	
P20.46			0.0 100.0 [%]	18.0 [%]	
P20.47			0.0 200.0 [%]	92.0 [%]	
P20.48			0.0 200.0 [%]	87.0 [%]	
P20.49			0.0 150.0 [%]	100.0 [%]	
P20.51			0.0 1000.0 [%]	100.0 [%]	
P20.52			0.0 1000.0 [%]	100.0 [%]	

7.21 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
P21.5			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
P21.11			0 1000 [ms]	0 [ms]	
P21.12	2x		0.0 300.0 [%]	100.0 [%]	

P21.13			20.0 500.0 [ms]	100.0 [ms]	8.10
P21.14		1	0 60000	1024	
P21.15		[0] [1]	0 1	0	8.10
P21.16			0.0 300.0 [%]	100.0 [%]	
P21.17			0.0 300.0 [%]	100.0 [%]	
P21.18			0.0 300.0 [%]	0.0 [%]	
P21.19			0.0 300.0 [%]	0.0 [%]	
P21.20		[0] [1]	0 1	0	
P21.21		[0] [1]	0 1	0	
P21.22			0.0 300.0 [%]	160.0 [%]	
P21.23			0.0 200.0 [%]	20.0 [%]	
P21.24			0.0 300.0 [%]	100.0 [%]	
P21.25			0.0 200.0 [%]	100.0 [%]	
P21.26			0.0 1000.0 [%]	0.0 [%]	8.10
P21.27			0.00 15.00 [%]	2.00 [%]	8.10
P21.28		[0] P21.16 P21.17 [1] [2] [3]DP	0 3	0	
P21.30		[0] P21.31 P21.32 [1] 1 [2] 2 [3]	0 3	0	

P21.31		0.0	1 0	5.0 [%]
P21.32		0.0	.0	5.0 [%]
P21.34	[0] [1]	0	1	0
P21.35	ḡ o			

7.22 3 P22

P22.0		[0] [1]	0 1	0	8.10
P22.1		[0] [1] 1 [2] 2 [3] [4] P22.3 [5]DP [6]MODBUS [7]	0 7	0	8.10
P22.2			0 7	0	
P22.3			-300.0 300.0 [%]	0.0 [%]	8.10
P22.5			0 1000 [ms]	0 [ms]	
P22.6			0.0 200.0 [%]	100.0 [%]	8.10
P22.7		[0] [1] P22.8 P22.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	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
P22.11			0 1000 [ms]	0 [ms]	
P22.12	2x		0.0 300.0 [%]	100.0 [%]	

P22.13			20.0 500.0 [ms]	100.0 [ms]	8.10
P22.14		1	0 60000	1024	
P22.15		[0] [1]	0 1	0	8.10
P22.16			0.0 300.0 [%]	100.0 [%]	
P22.17			0.0 300.0 [%]	100.0 [%]	
P22.18			0.0 300.0 [%]	0.0 [%]	
P22.19			0.0 300.0 [%]	0.0 [%]	
P22.20		[0] [1]	0 1	0	
P22.21		[0] [1]	0 1	0	
P22.22			0.0 300.0 [%]	160.0 [%]	
P22.23			0.0 200.0 [%]	20.0 [%]	
P22.24			0.0 300.0 [%]	100.0 [%]	
P22.25			0.0 200.0 [%]	100.0 [%]	
P22.26			0.0 1000.0 [%]	0.0 [%]	8.10
P22.27			0.00 15.00 [%]	2.00 [%]	8.10
P22.28		[0] P22.16 P22.17 [1] [2] [3]DP	0 3	0	
P22.30		[0] P22.31 P22.32 [1] 1 [2] 2 [3]	0 3	0	

P22.31		0.0 [%]	100.0 [%]	5.0 [%]	
P22.32		0.0 [%]	100.0 [%]	5.0 [%]	
P22.34	[0] [1]	0	1	0	8.10
P22.35		0.0 [s]	100.0 [s]	0.0 [s]	
P22.36		50.0 [%]	150.0 [%]	110.0 [%]	
P22.37		0.0 [%]	150.0 [%]	100.0 [%]	8.10
P22.38		0.0 [%]	100.0 [%]	25.0 [%]	8.10
P22.39		0.0 [%]	120.0 [%]	100.0 [%]	8.10
P22.40		0.0 [%]	150.0 [%]	100.0	

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
P22.64	2	2	0.0 100.0 [%]	0.0 [%]	8.10
P22.65	2	2	30 2000.0 ms	50 ms	
P22.98		( )	0.01 300.00 [s]	0.75 [s]	
P22.99			0.00 10.00 [%]	0.00 [%]	

7.23 4 P23

P23.0		[0] [1]	0 1	0	8.10
P23.1		[0] [1] 1 [2] 2 [3] [4] P23.3 [5]DP [6]MODBUS [7]	0 7	0	8.10
P23.2			0 7	0	
P23.3			-300.0 300.0 [%]	0.0 [%]	8.10
P23.5			0 1000 [ms]	0 [ms]	
P23.6			0.0 200.0 [%]	100.0 [%]	8.10
P23.7		[0] [1] P23.8 P23.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	8.10
P23.8		P23.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P23.9		P23.7 [1]	0.0 300.0 [%]	200.0 [%]	8.10
P23.11			0 1000 [ms]	0 [ms]	
P23.12	2x		0.0 300.0 [%]	100.0 [%]	

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 [%]	

N

7.1

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 [s]	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 [ms]	1000 [ms]	75 [ms]	
P23.44					

P23.53	Kp		0.0 1000.0 [%]	100.0 [%]	
P23.54	Ki		0.0 1000.0 [%]	100.0 [%]	
P23.55			0.0 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 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
P23.64	2	2	0.0 100.0 [%]	0.0 [%]	8.10
P23.65	2	2	30 2000.0 ms	50 ms	
P23.98		( )	0.01 300.00 [s]	0.75 [s]	
P23.99			0.00 10.00 [%]	0.00 [%]	

7.24 MODBUS P32

P32.0	MODBUS	[0] [1]	0 1	0	
P32.1	MODBUS ID		1 255	1	
P32.2		[0]RS485 [1]RS232	0 1	0	
P32.3		[0] 9600 BPS [1] 14400 BPS [2] 19200 BPS [3] 38400 BPS [4] 56000 BPS [5] 57600 BPS [6] 115200 BPS	0 6	3	
P32.4		[0] None_8_1_CFG [1] Even_8_1_CFG [2] Odd_8_1_CFG [3] None_8_2_CFG [4] Even_8_2_CFG [5] Odd_8_2_CFG	0 5	0	
P32.5	Modbus	Modbus 0 Modbus	0 100 [s]	0 [s]	0s
P32.6	Modbus	0- 1-	0 1	0	

7.25 P33

P33.0	Profibus	[0] [1]	0 1	0	
P33.1		PLC	1 255	1	
P33.2		[0]PPO1 [1]PPO2 [2]PPO5 [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	[WO]	7-2	0 37	0	
P33.14	[WO]	[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	[W3]	7-2	0 37	0	
P33.20	[W3]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.21	[W4]	7-2	0 37	1	
P33.22	[W4]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.23	[W5]	7-2	0 37	18	
P33.24	[W5]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	2	
P33.25	[W6]	7-2	0 37	21	
P33.26	[W6]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	
P33.27	[W7]	7-2	0 37	22	
P33.28	[W7]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	
P33.29	[W8]	7-2	0 37	23	
P33.30	[W8]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	

P33.31	[W9]	7-2	0 37	0	
P33.32	[W9]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.33	[W10]	7-2	0 37	0	
P33.34	[W10]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.35	[W11]	7-2	0 37	0	
P33.36	[W11]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.37	[W12]	7-2	0 37	0	
P33.38	[W12]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.39	[W13]	7-2	0 37	0	
P33.40	[W13]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.41	[W14]	7-2	0 37	0	
P33.42	[W14]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.43	[W15]	7-2	0 37	0	

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	[W8]	7-3	0 48	14	

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	

7-2

0	
1	0
2	1
3	2
4	3
5	4
6	[32]
7	[32]
8	32_MSW
9	32_LSW
10	
11	
12	0 @32bit
13	1 @32bit
14	2 @32bit
15	3 @32bit
16	4 @32bit
17	5 @32bit
18	[Hz]
19	[rpm]
20	[%]
21	[%]
22	[%]
23	[Hz]
24	
25	
26	1[%]
27	2[%]
28	
29	
30 37	SET_W12 19

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	Mwh
42	Kwh
43	Mwh
44	Kwh
45 48	AW26 29

8.

8.1

400kW 800kW 400kW

P2.0

8.2

1

P12.0 [0] [1]

A. [0]

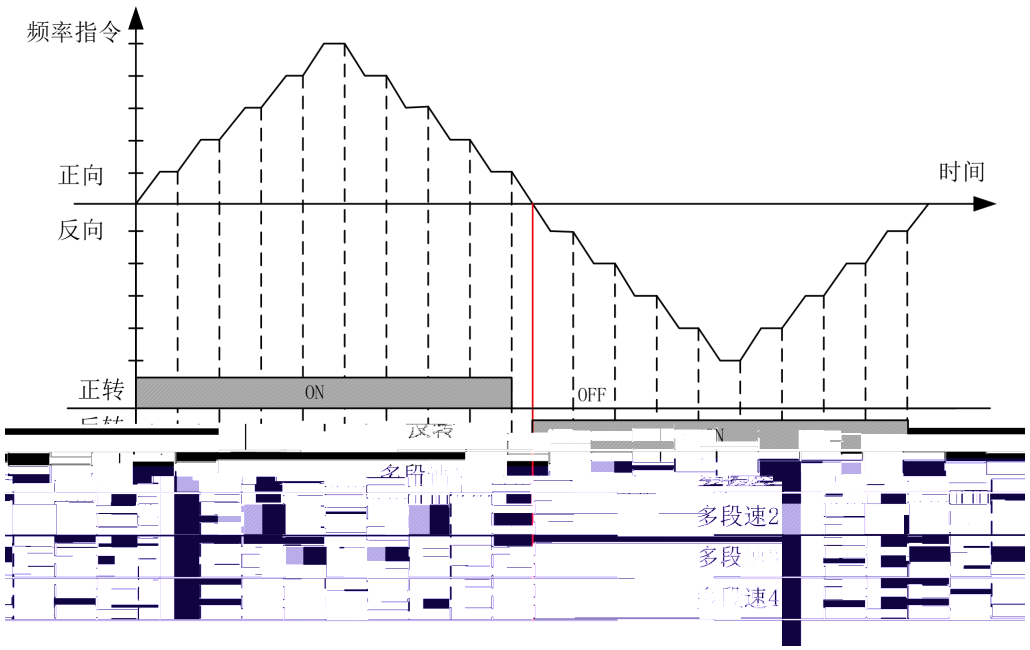
[1] [2] ---1

[6] 1 0 ---2

[7] 2 1 ---3

[8] 3 2 ---4

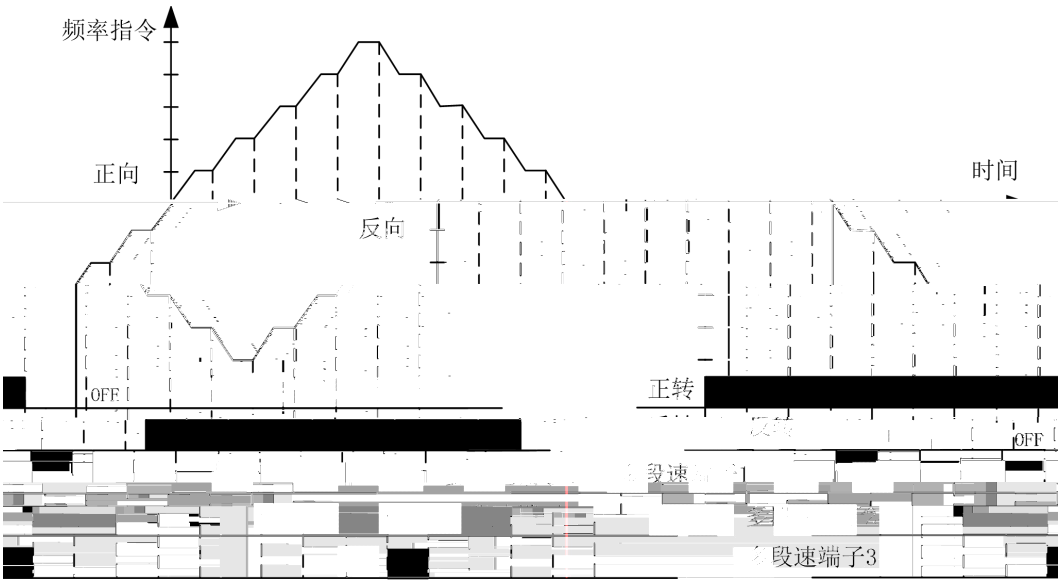
[9] 4 3 ---5



B. [1]

4 16 (8421)

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



2

DI 22 “ ”

10Hz E106 “ 1 ”

10Hz 2s

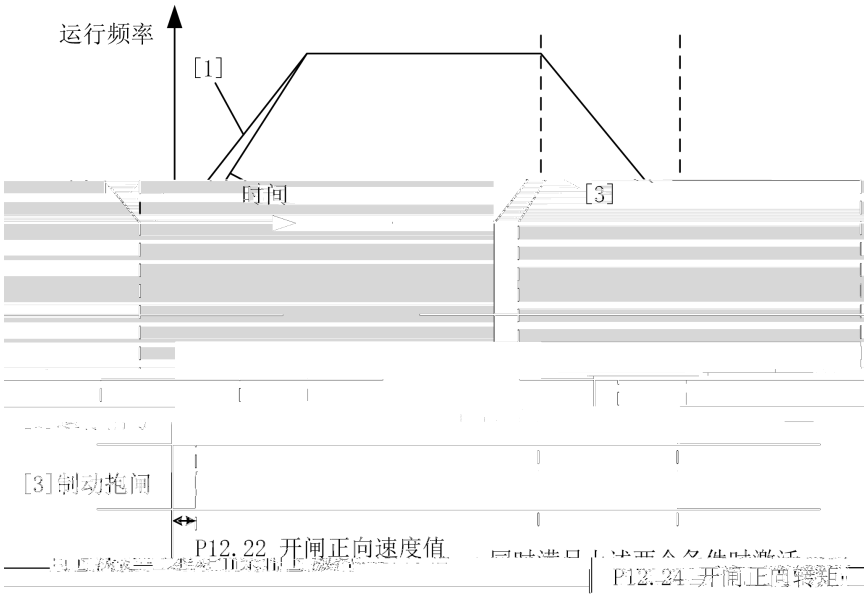
E107 “ 2 ”

8.3

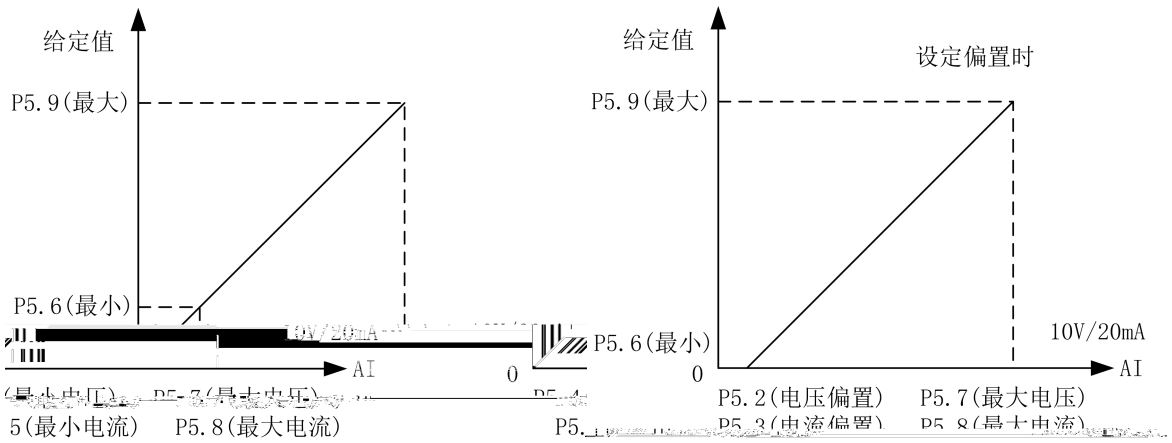
/

[1] [3] [3]

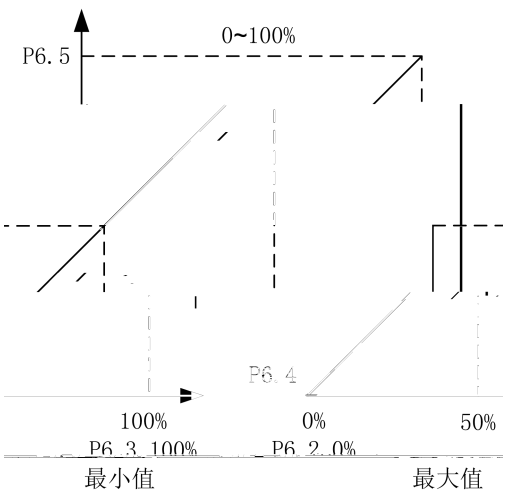
[1] [3]


运行频率
[1]
时间
[3]
[3]制动抱闸
P12.22 开闸正向速度值
P12.24 开闸正向转矩

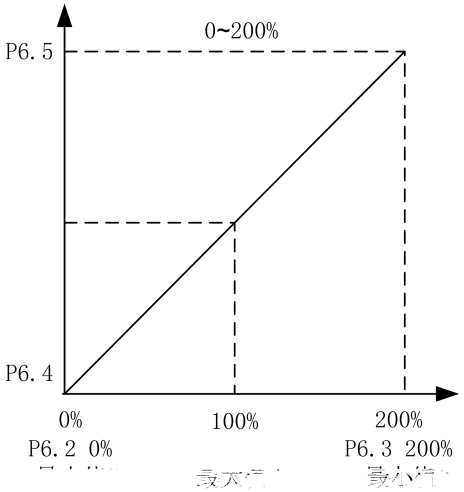
8.4


给定值
P5.9(最大)
P5.6(最小)
AI
0
5(最小电流)
P5.8(最大电流)
给定值
设定偏置时
P5.9(最大)
P5.6(最小)
10V/20mA
AI
0
P5.2(电压偏置)
P5.7(最大电压)

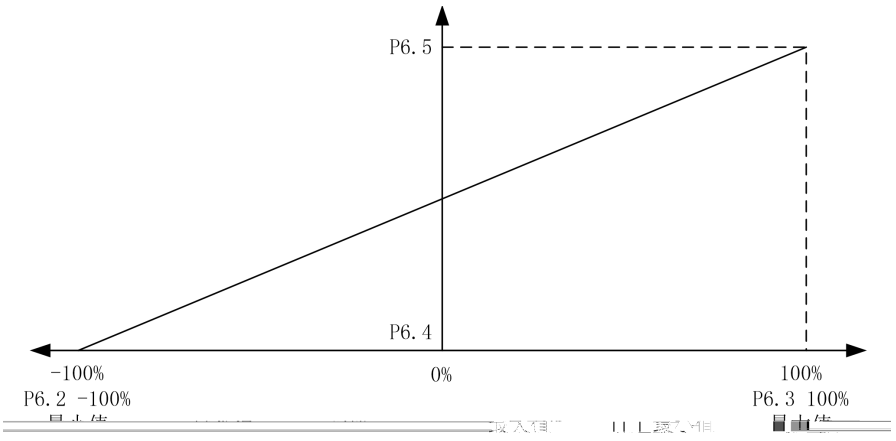
8.5



(a) 0~100%



b 0~200%



c -100~100%

8.6

1

P7.0 P7.1 P7.2 P7.3

2

P7.4 P7.5 P7.6 P7.7 P7.4 P16.4

3

P7.8 P7.9 P7.10 P7.11 $I_a + I_b + I_c$

P16.4 $\frac{I_a + I_b + I_c}{} > P$ P

4

P7.12 P7.13 P7.12

P7.13

5

P7.14 IGBT P7.14

P7.15 IGBT P7.15

6

P7.19 P7.20 P7.21 P7.22 P7.19

P7.19 P7.22

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

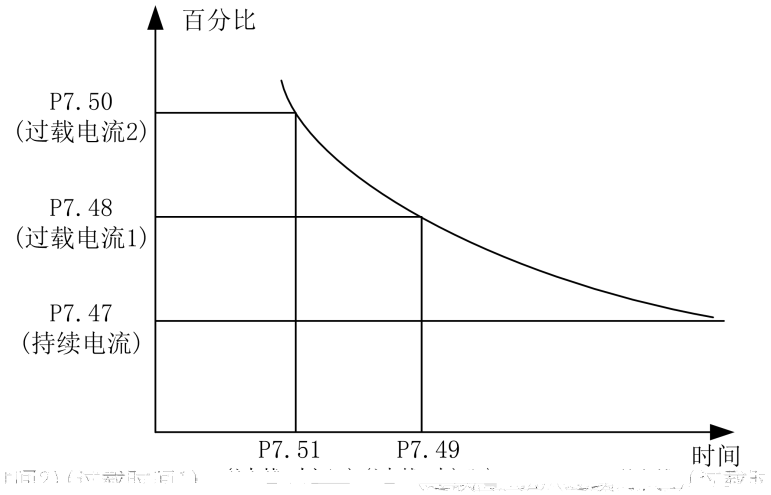
9

P7.33

P7.33

10

P7.48 P7.50



11

P7.64 P7.65 P7.66 HF650

37KW-160kW P7.64 1

P7.65

P7.66 P7.66

≥P7.65 P16.0 380V P7.65 0V 597V P7.66

20V 617V

= √ + +

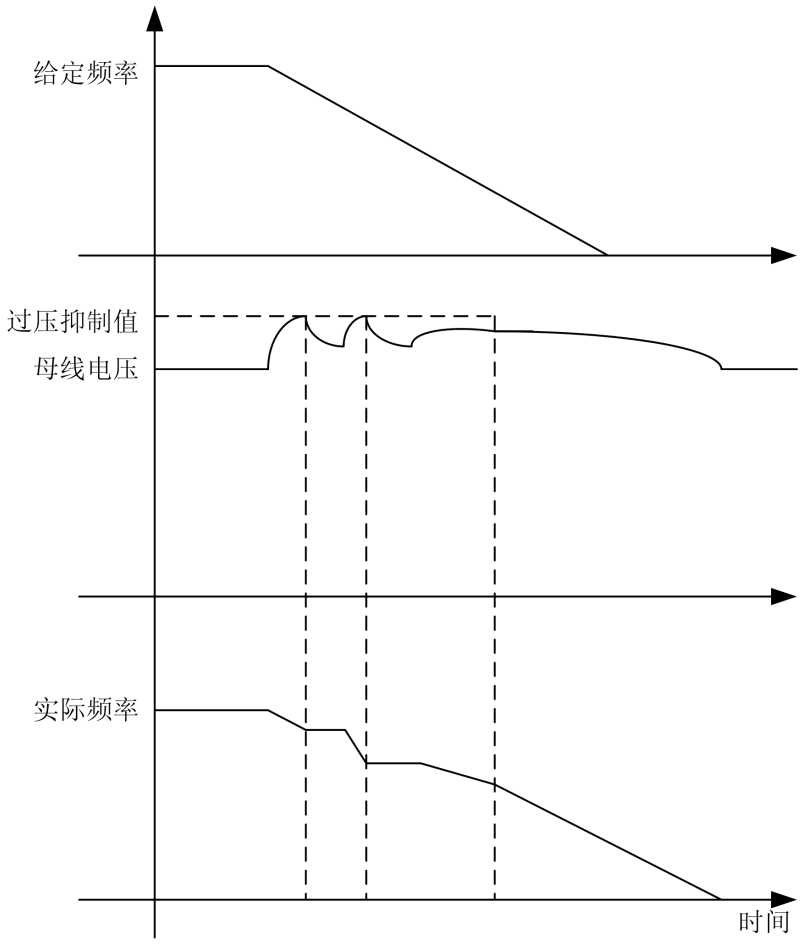
= √ + +

12

P7.69 P7.70 P7.71 P7.69

0 P16.0 380V P7.70 0V

611V = √ + +



P7.71 P7.71

8.7

1

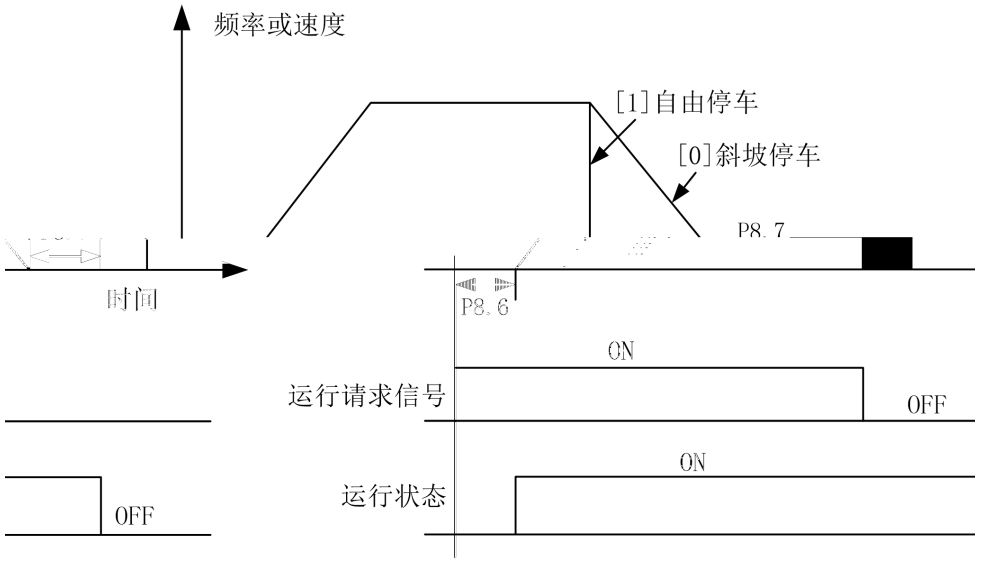
P8.3

[0]

[1]

P8.6 P8.6

P8.7

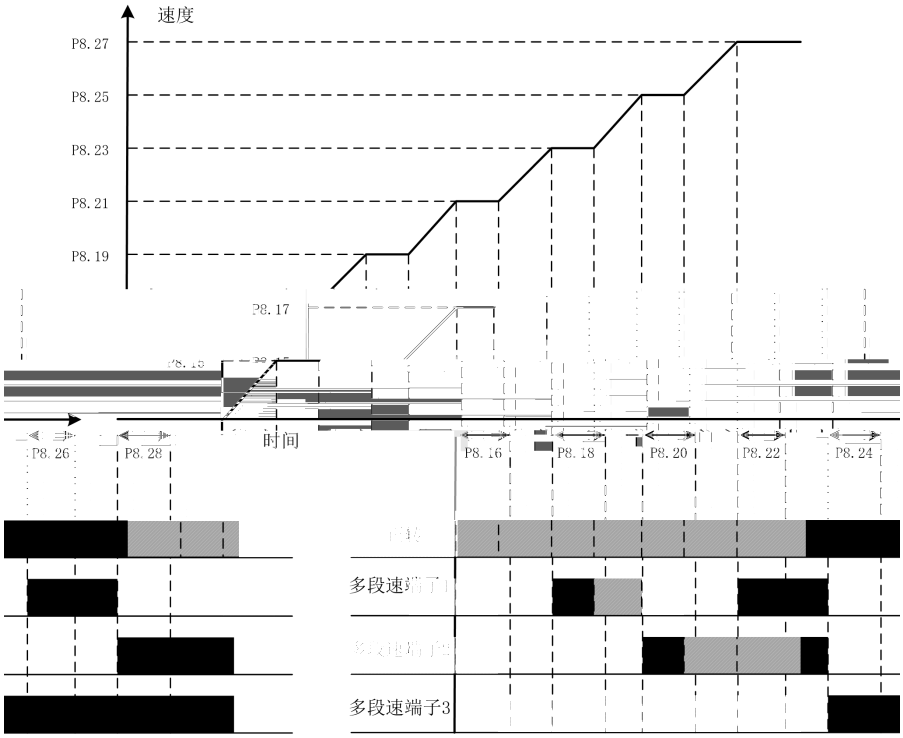


2

P8.14

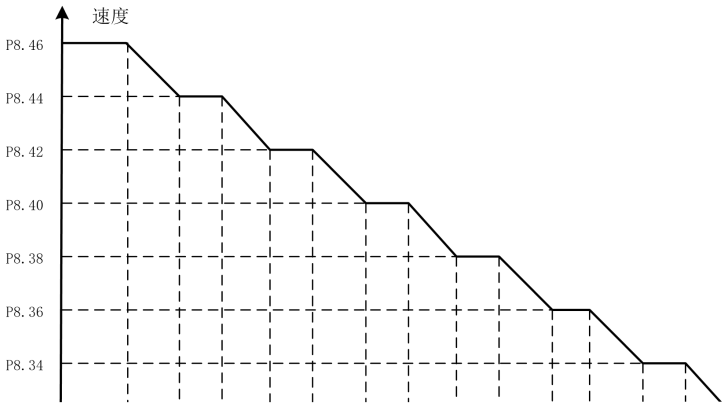
P8.14 P8.33

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%



P8.34<P8.36<P8.38<P8.40<P8.42<P8.44<P8.46

P8.34	P8.36	P8.38	P8.40	P8.42	P8.44	P8.46
10%	20%	30%	50%	60%	80%	100%

3

PROFIBUS MODBUS

P8.13 P8.32

1 =P8.14×P8.16×(×0.001)

1 =P8.33×P8.35×(×0.001)

8.8

1

P12.2 P12.17

P12.0=[1]

	1	2	3	4

1	0	0	0	0
2	1	0	0	0
3	0	1	0	0
	1	1	0	0
5	0	0	1	0
6	1	0	1	0
7	0	1	1	0
8	1	1	1	0
9	0	0	0	1
10	1	0	0	1
11	0	1	0	1
12	1	1	0	1
13	0	0	ñ’@ñ Q ’lp• @	1
14	1	0	1	1
15	0	1	1	1
16	1	1	1	1

0 OFF 1 ON

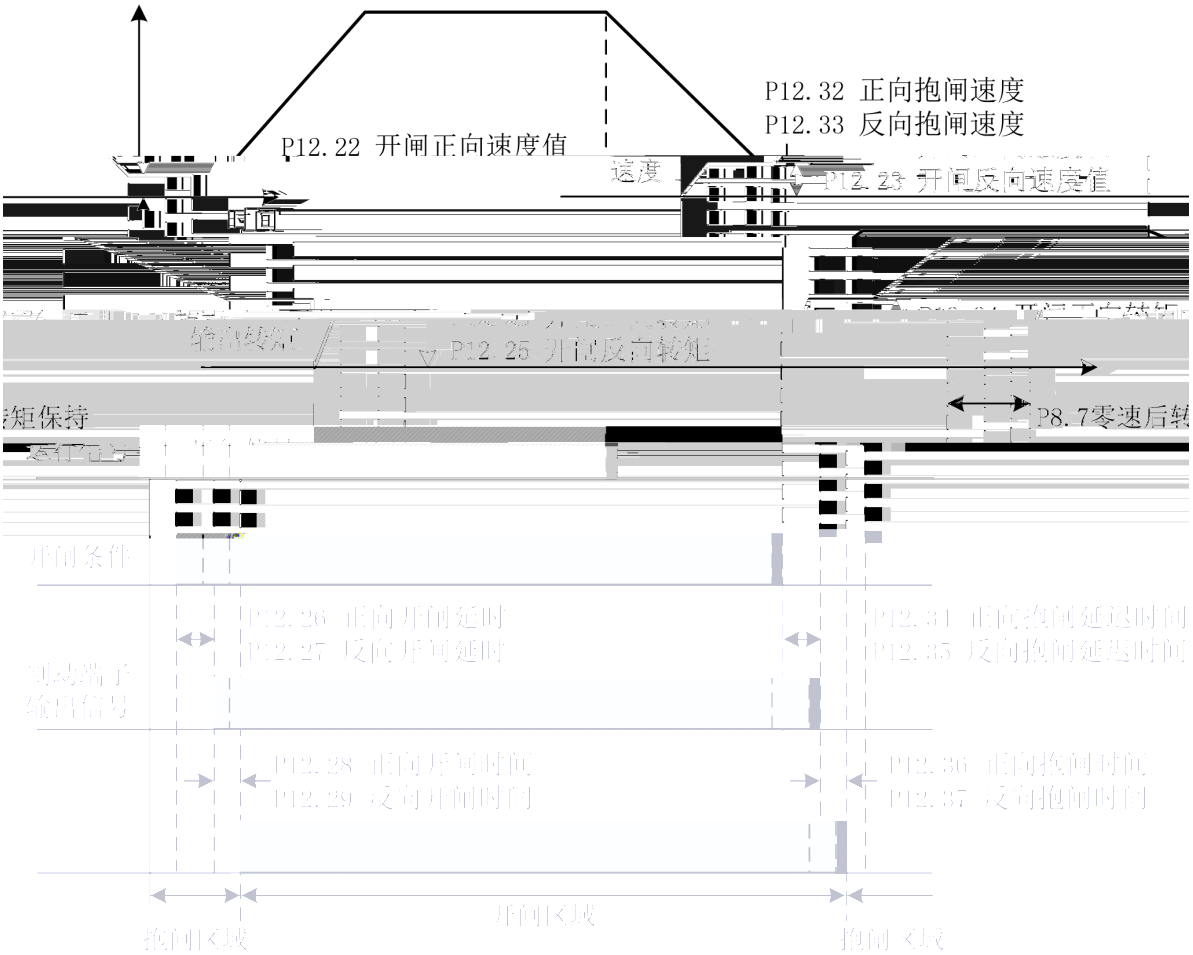
2

P12.22 P12.37

[3]

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

12.24



8.9 V/F

1

P16.0 P16.9

P16.7 120 × P16.5/P16.6 P16.9

120 × P16.5/P16.7

P16.2 P16.4

2

P16.12

0.5Hz~2Hz >50Hz

1kHz			
5kHz			
10kHz			

	kHz
0.4kW 30kW	5
37kW 132kW	3
160kW 400kW	2

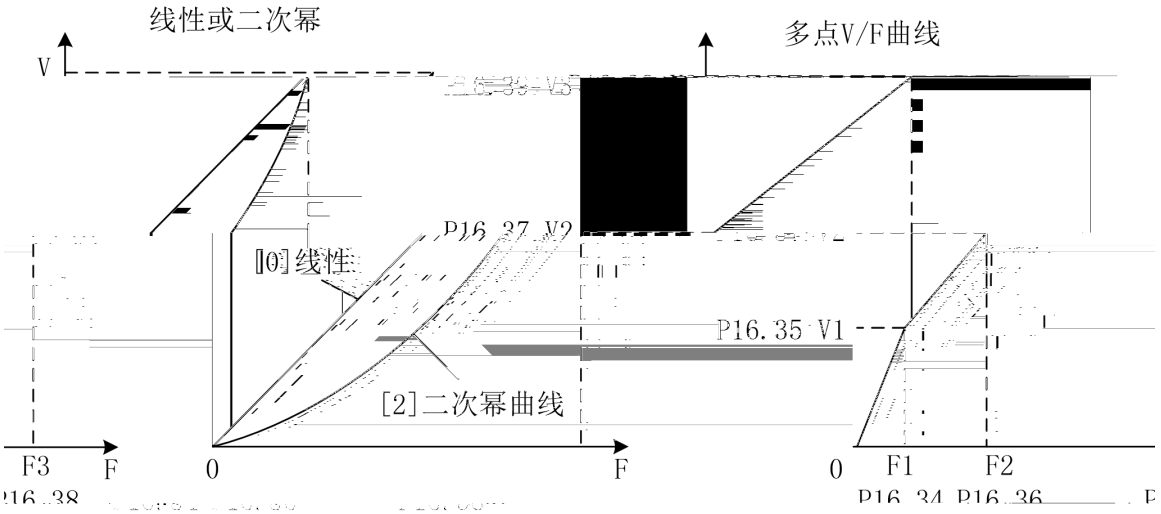
3 V/F

P16.14 V/F P16.11=0

[0] V/F

[1] V/F P16.33 P16.45 V/F

[2]



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

V1 V2 V3 F1 F2 F3

4

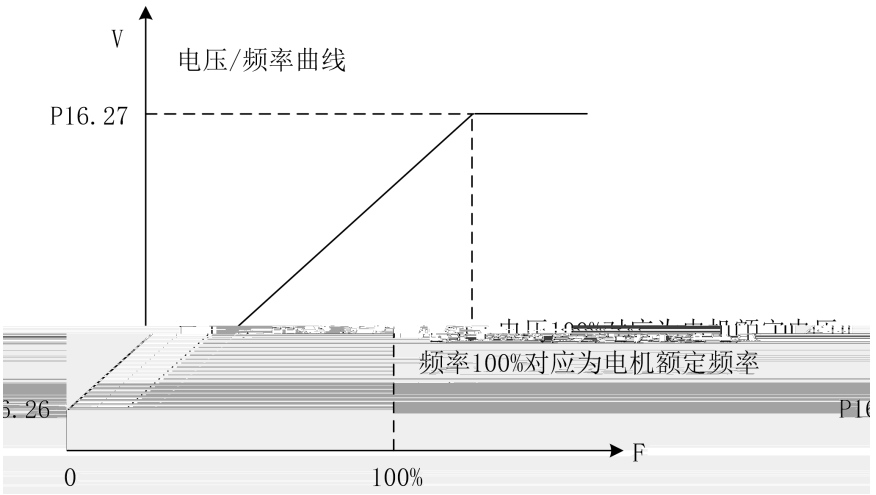
P16.15 V/F

V/F

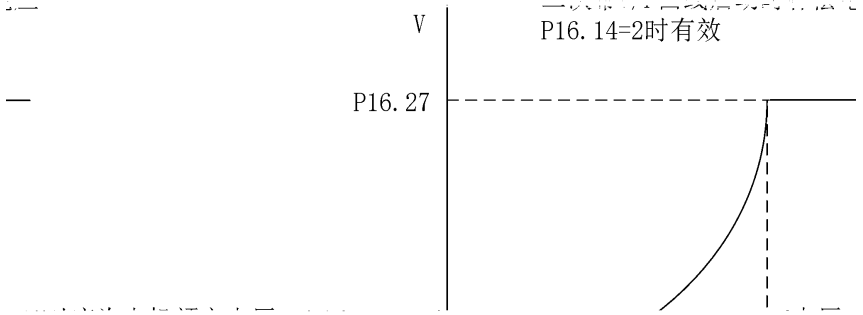
5

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

P16.27



P16.14=[2] V/F P16.30 P16.30 P16.27



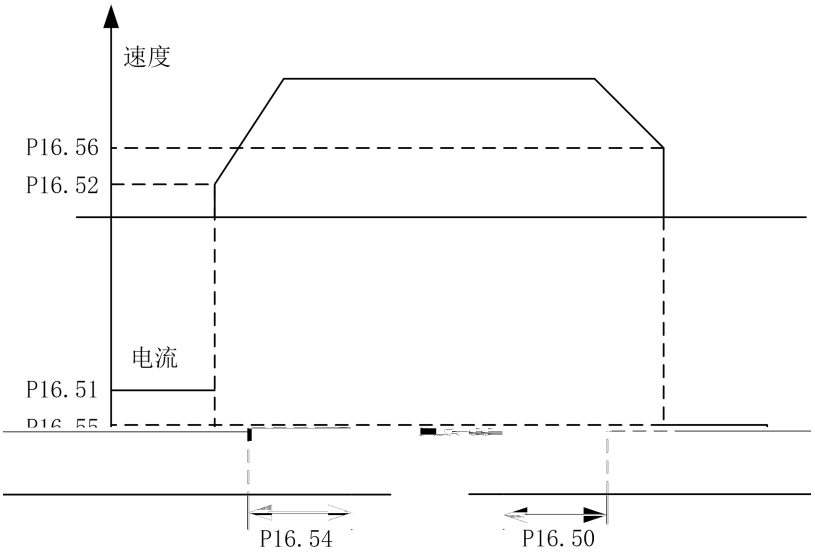
6

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

P12.24 P12.25 0%

3

P20.7

P20.8 P20.9 P20.7=1

4

P20.15 A B

A B U V W

[0]

[1] A B

5

GDHF-PGD2 PG

GDHF-PGD2 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

HF650 P20.34 [1]

HF650 P20.34 [0]

6 DROOP

DROOP DROOP

P20.60 0

DROOP P20.61 DROOP

7 1

8 2

P20.1 P20.2 [0]

9

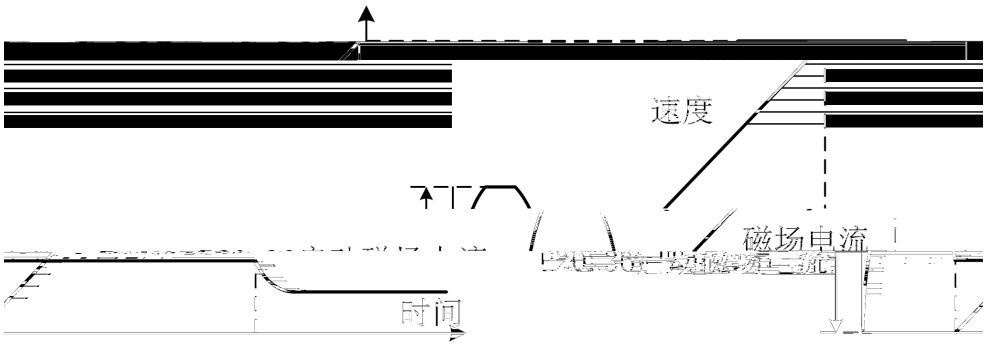
PGD1

PLC DI

DP CW0.10 “1”

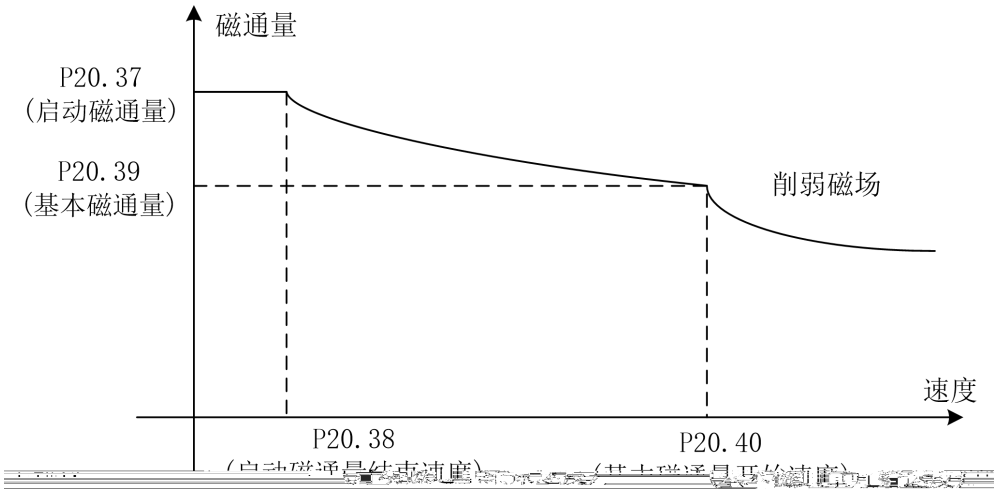
10

P20.36



11

P20.37 P20.40



12

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

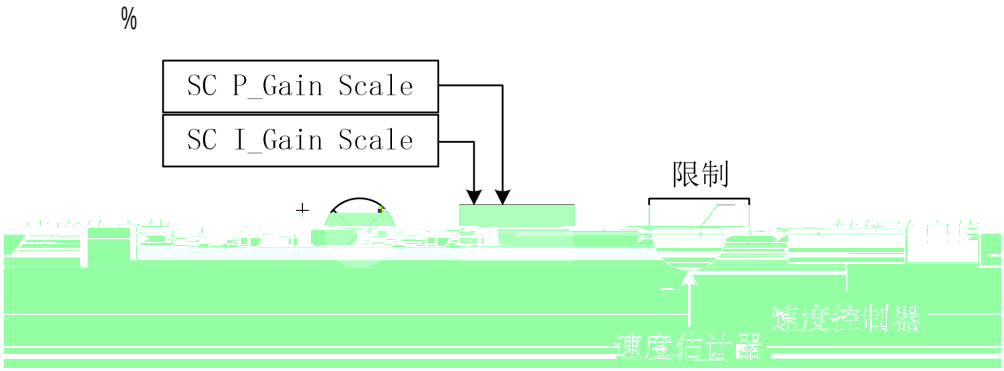
P20.58

P20.59

13

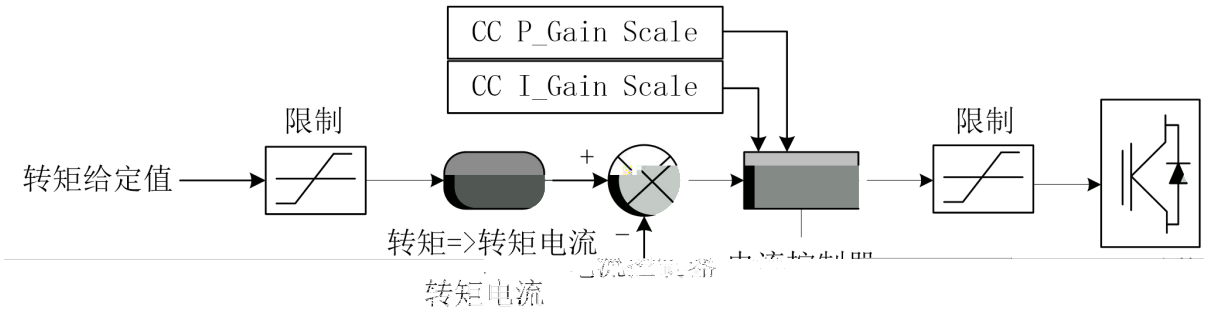
P20.55 ,

P20.56 ,



14

P20.62 P20.63 %


CC P_Gain Scale
CC I_Gain Scale
限制
限制
转矩给定值
+
−
转矩=>转矩电流
转矩电流

8.11

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/BALARM	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

[E111]	OL	P7.48(1) P7.49(1) P7.48 P7.49
[E112]	ZC	P7.8
[E113]	MIP	
[E114]	MOP	
[E115]	OS	P7.19 P7.19
[E116]	SLVC Fail	P7.23
[E117]	MOTOR STALL	P20.14 P20.15
[E118]	PG ERROR	P20.14 P20.15
[E119]	SPEED ABNORMAL	P20.14 P20.15 P7.31 P7.32
[E120]	IGBT OT	
[E138]	TEMP_SENSINGFAIL	
[E139]	Pre_Charging Fail	P7.95
[E140]	LineUV	
[E141]	Line OPEN	
[E142]	LineDetectionError	

		DI
[E143]	LineSWFail	
[E144]	LineSW SHORT	
[E145]	(AFE) Line OV	P16.0
[E146]	(AFE) Line Over_Freq	
[E152]	U IGBT PDP[U]	IGBT IGBT
[E154]	V IGBT PDP[V]	IGBT IGBT
[E155]	W IGBT PDP[W]	IGBT IGBT
[E156]	Hardware OC	
[E157]	PDP[DB]	
[E160]	SLAVE FAO	

[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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10.

1.

2.

3.

4.

1. CMOS

2.

3.

10.1

10.2

	1. 2.	1. > 40 < 95% 2.
	1. 2.	1. 2.
	1. 2. 3.	1. 2. 3.
	1. 2.	1. 2.
	1. 2.	1. 2.

10.3

	2	1 2
PCB		

10.4

5

5

(400-0077-570)

1 40

2 80%

3 24 /

10.5

1

4

2

1

2

3

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6

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