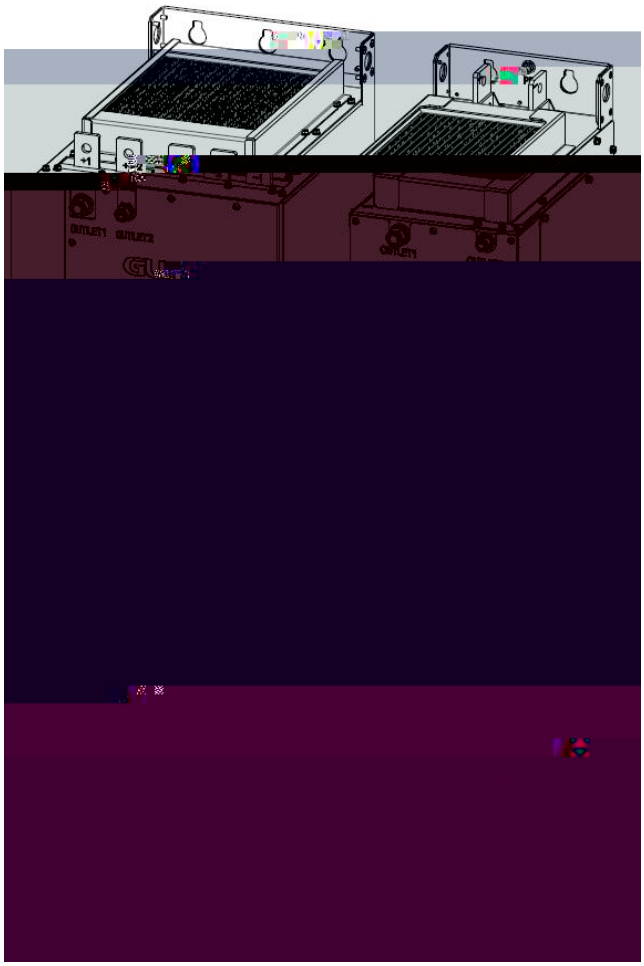
HF680NLC

690V 160~1935kW

1.07

Wuhan GUIDE Technology Co.,Ltd

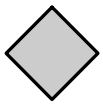


HF680NLC

10.
10.1
10.2
10.3
11.
11.1
11.2
11.3
11.4
11.5

1.

1.1



1

RCD

RCM RCD

RCM

B RCD RCD

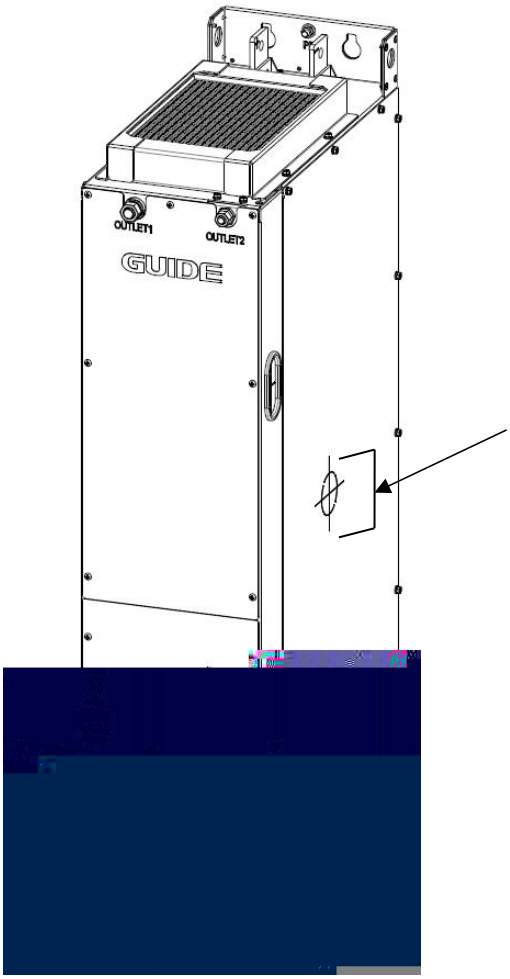
RCD RCD

2

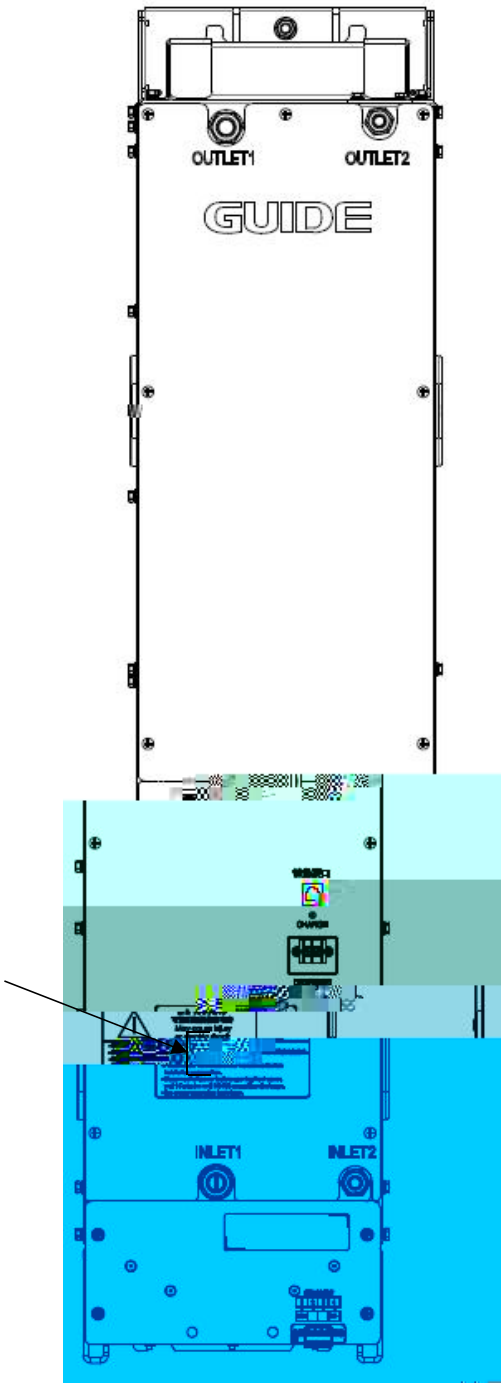
500V

5MΩ

3



HF680NLC-560-6



HF680NLC-560-6


警告 WARNING
可能引起损伤和电击
wait 15 minutes until DC BUS capacitors discharge.
Use proper grounding technique.

1.2

(1)

(2)

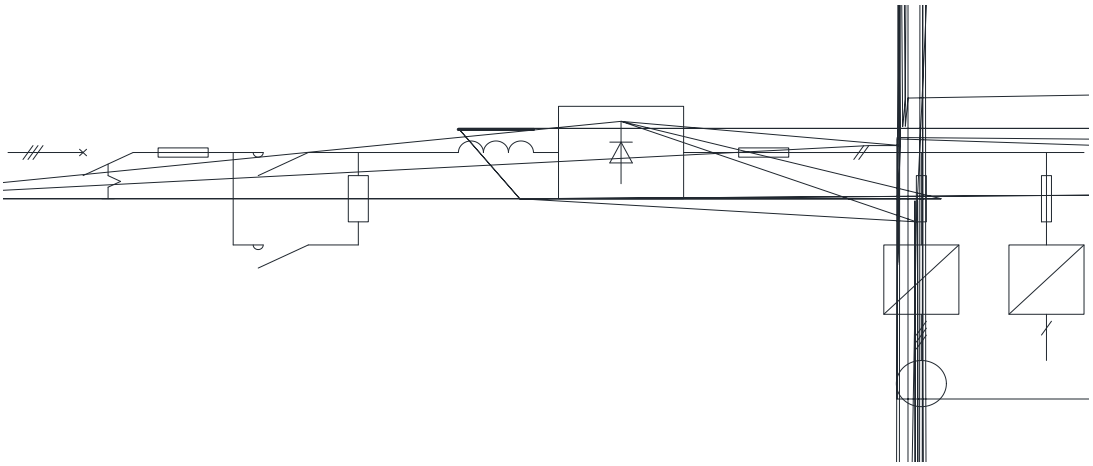
(3)

1.3

2.

2.1

HF680NLC



	GDHF-AKZY1	GDHF-AKZY1 LCD HF680NLC01M HF680NLC03M
2	2.8*8.8 2	2.8*8.8 2 HF680NLC01M HF680NLC03M 2
4	GDHF-KL4	GDHF-KL4 4 HF680NLC01M HF680NLC03M 4
	GDHF-FB01	1 HF680NLC01M
	GDHF-CFBX1	HF680NLC0M3 710kW~1250kW
	GDHF-CFBY1	HF680NLC03 710kW~1250kW
	GDHF-FB06	

2.4

1.

2.

3.

- R S T
- U V W
- + -

4.

5.

1.

2.

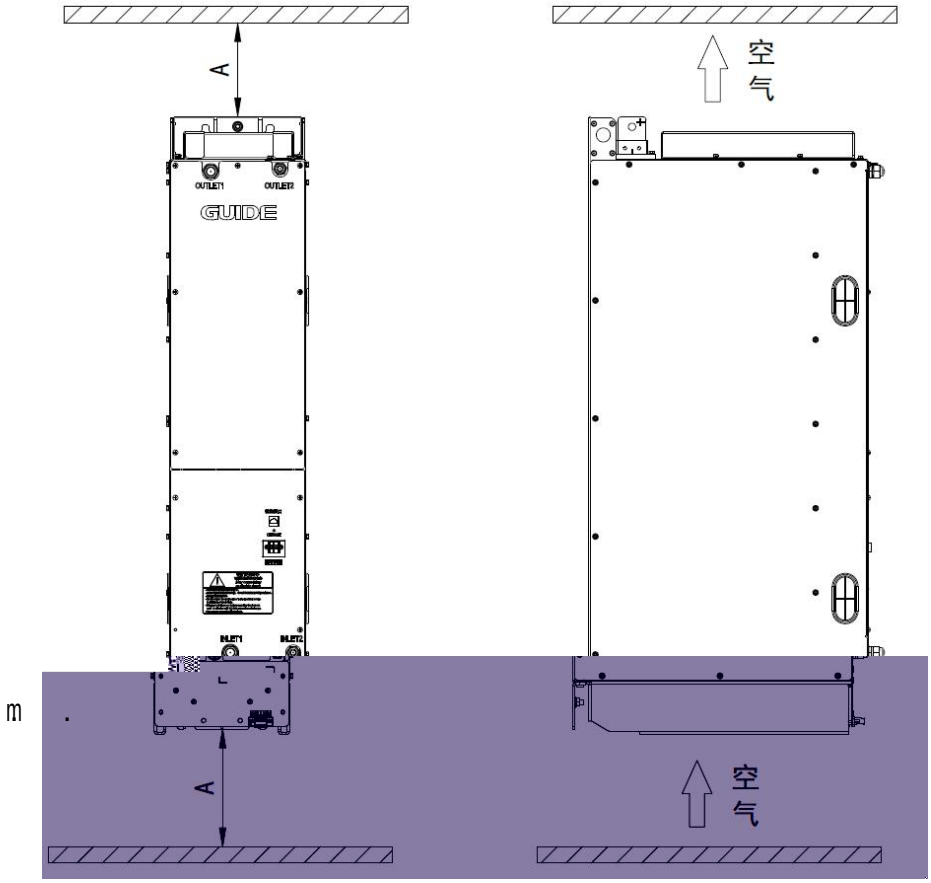
3.

4. 1.2

2.4.1

	10cm 5cm	6	
	0 +55 , +45 55 °C, (0.5% / 1) 0	-40 +70	-40 +70
	70 106 kPa 0.7 1.05	70 106 kPa 0.7 1.05	60 106 kPa 0.6 1.05
	1mm(5~13.2Hz) 7m/s2(13.2~100Hz)	1mm(5~13.2Hz) 7m/s2(13.2~100Hz)	3.5mm(2~9Hz) 10m/s2(9~200Hz) 15m/s2(200~ 500Hz)
		100m/s^2 11ms	100m/s^2 11ms
		250mm <100kg 100mm ≥100kg	250mm <100kg 100mm ≥100kg
	95%RH		
	1000 1000 100 1% 3000		
	2		
		/ / 6 4	
	( )	55	
		10	
	MPa	0.6	
	(kPa)	80~250	
	(mm)	: ø16 ø13; ø12 ø9	
		PA Teflon SMC T1613W T1209W	

2.4.2



m .

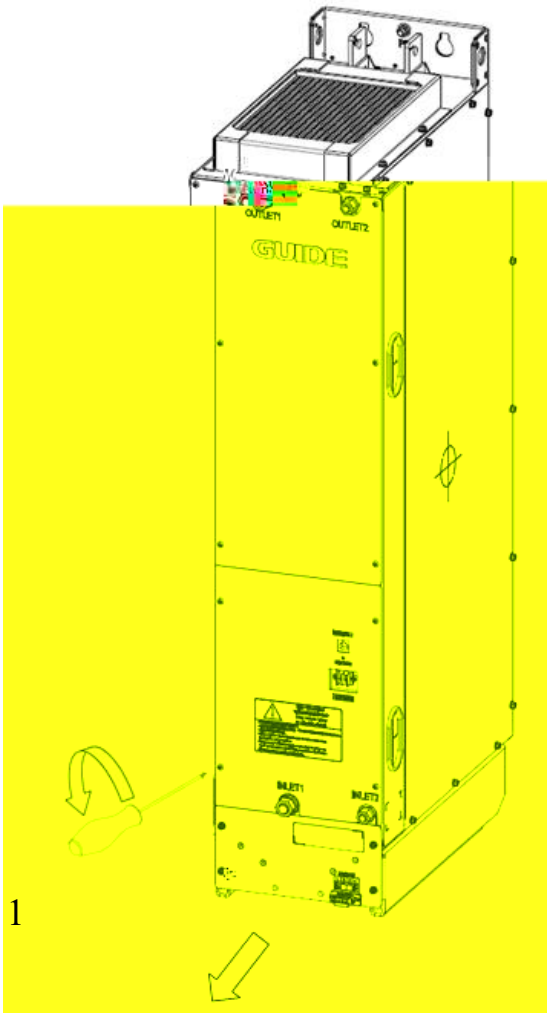
	A ≥ 250mm

0 Ḅ ر 5

2.4.3

1 1 11

2 2



HF680NLC-560-6

2.4.4

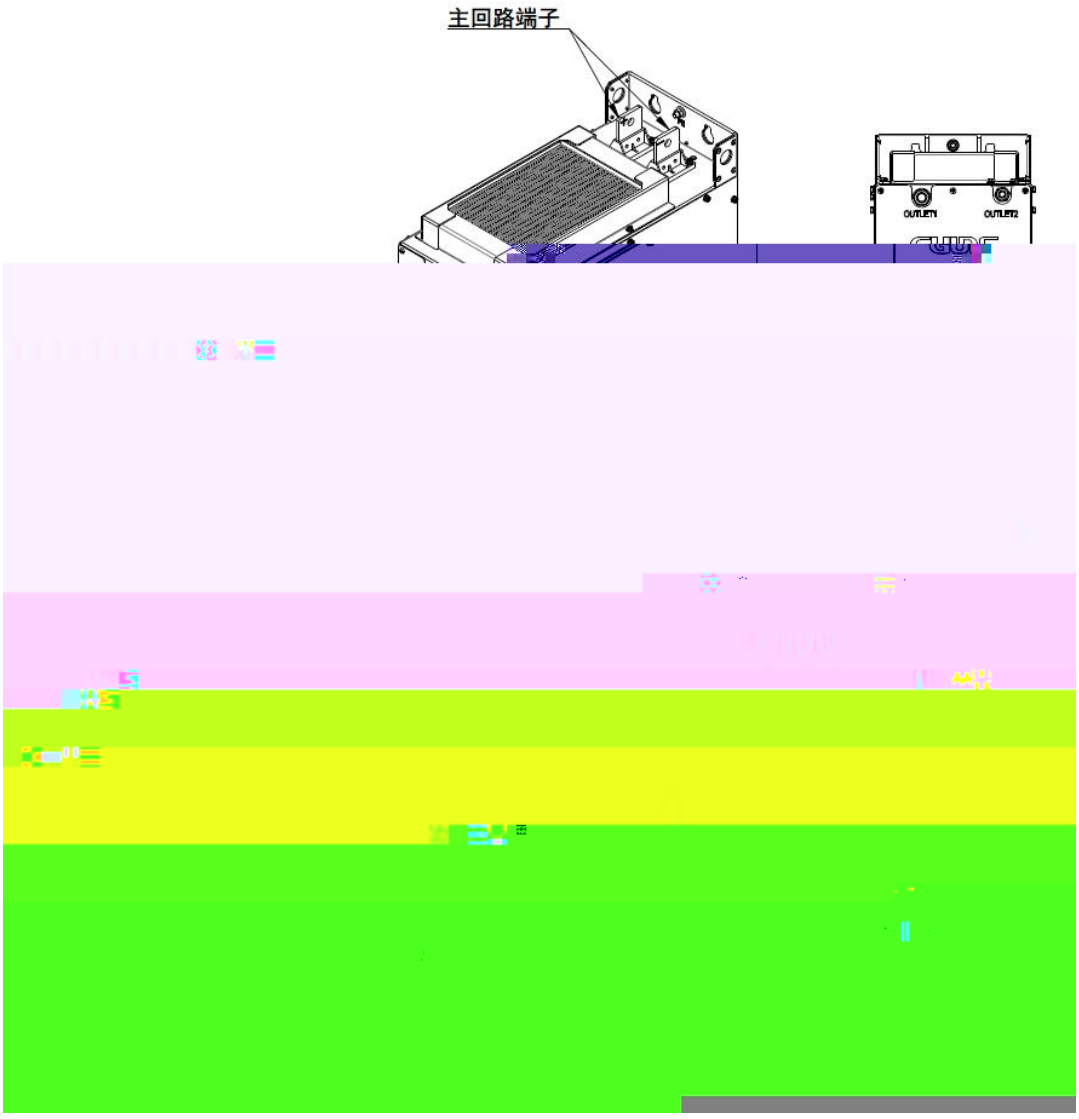
1 2 1

2 4 2

3

4 4 3

5

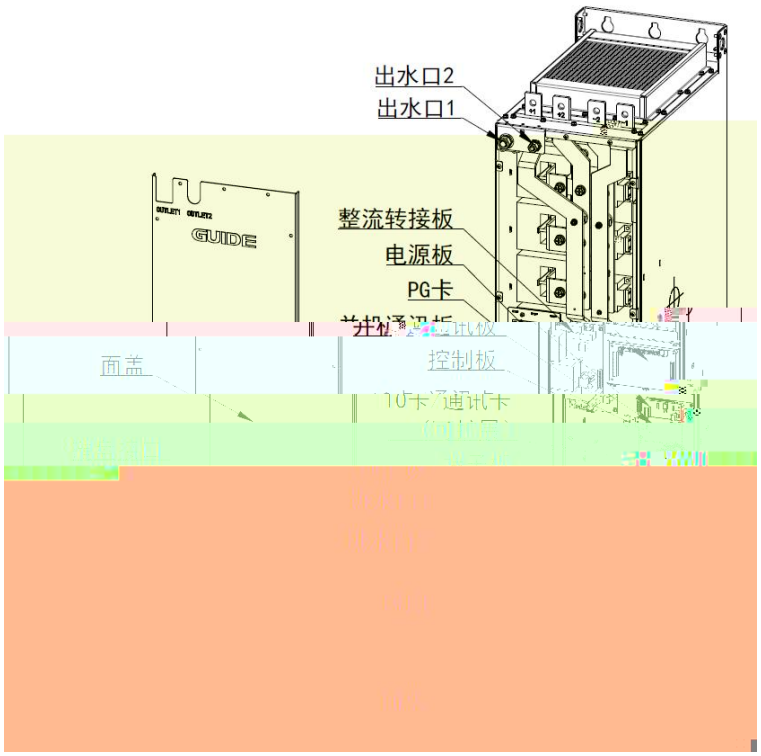


HF680NLC-560-6

3.

3.1

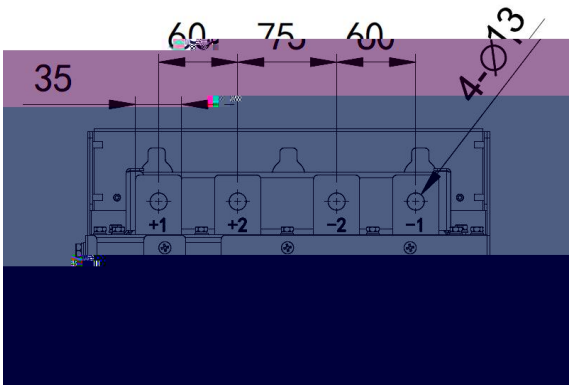
3.2

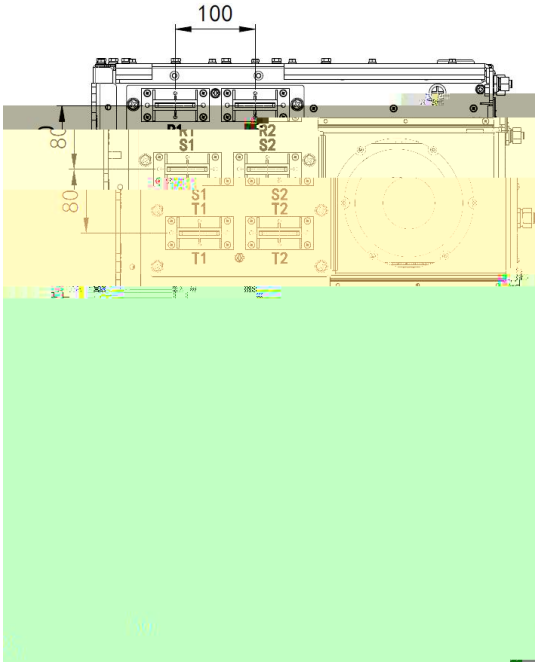


	MVSTBW 2.5/4-STF-5.08		
1 1	KFG2H1613-03	SMC	
1 1	T1613W	SMC	
2 2	KFG2H1209-03	SMC	
2 2	T1209W	SMC	

1

+1 +2	
-1 -2	
R1 R2 S1 S2 T1 T2	
PE	





2

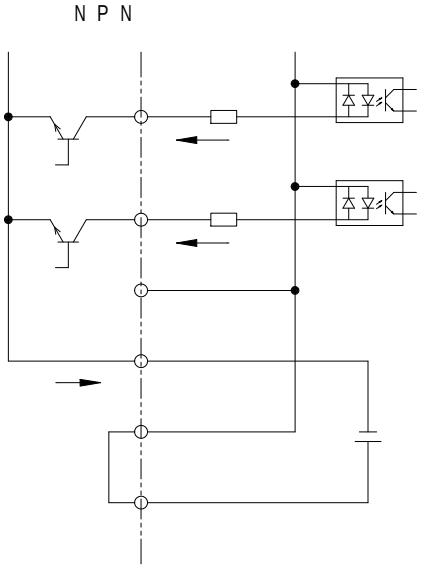
	+10V-GND	10V	+10V 50mA 1kΩ~5kΩ
	+24V-COM	24V	+24V 200mA
	PW		24V DI1~DI5 DO1 PW 24V
	AI1-GND	1	DC -10V~10V 100kΩ
	AI2-GND	2	-10VDC~10VDC/0mA~20mA J1 100kΩ 500Ω
	DI1- PW	1	3.3kΩ 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	AO1-GND	1	J2 0V~10V 0mA~20mA
	DO1-PW	1	0V~24V 0mA~50mA
	DO4A-DO4C	1	250VAC 3A 30VDC 1A
	DO4B-DO4C	2	
	DO5A-DO5C	3	

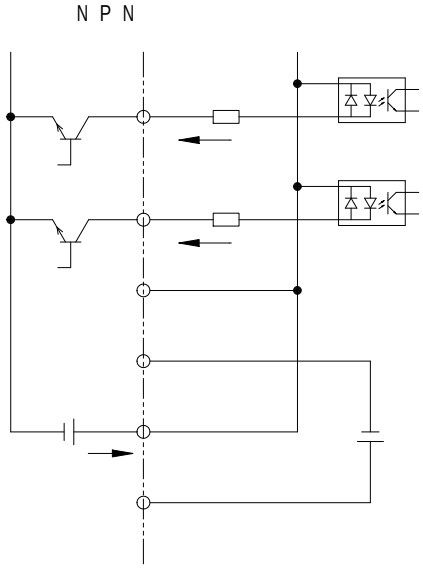
	J2	AO1	
	J1	AI2	

3

0V

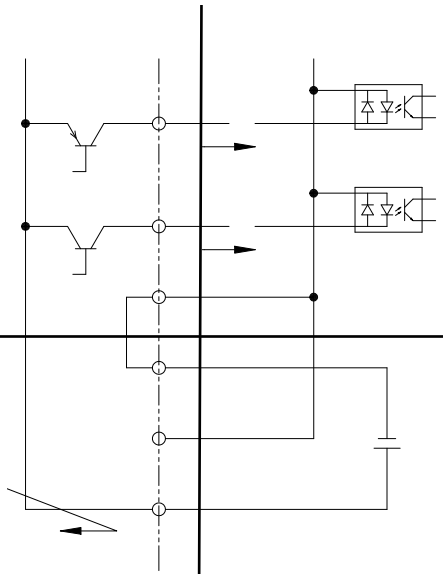
NPN



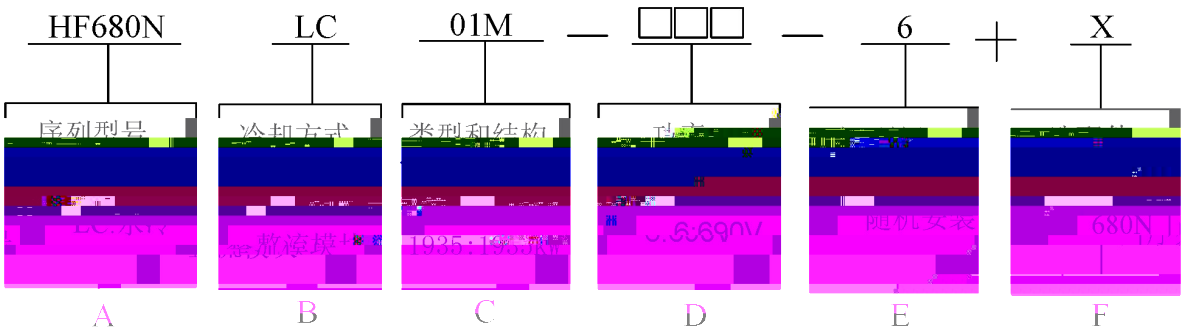


+24V

PNP



3.3



A	
B	LC
C	01M
D	1233 1233kW 1935 1935kW
E	6 690V
F	

Modbus RTU	MB01	GDHF-AMBX1	Modbus RTU
DP	DP01	GDHF-ADPX1	Profibus DP
PN	PN01	GDHF-APNX1	Profinet
CAN	CAN01	GDHF-ACNX1	CANopen

1 HF680NLC01M-1233-6+PN01 690V/1233kW Profinet

	A AC	A DC	kVA	A DC	A DC	
HF680NLC01M-1233-6	1143	1400	1370	1344	1120	P1
HF680NLC01M-1935-6	1796	2200	2150	2112	1760	

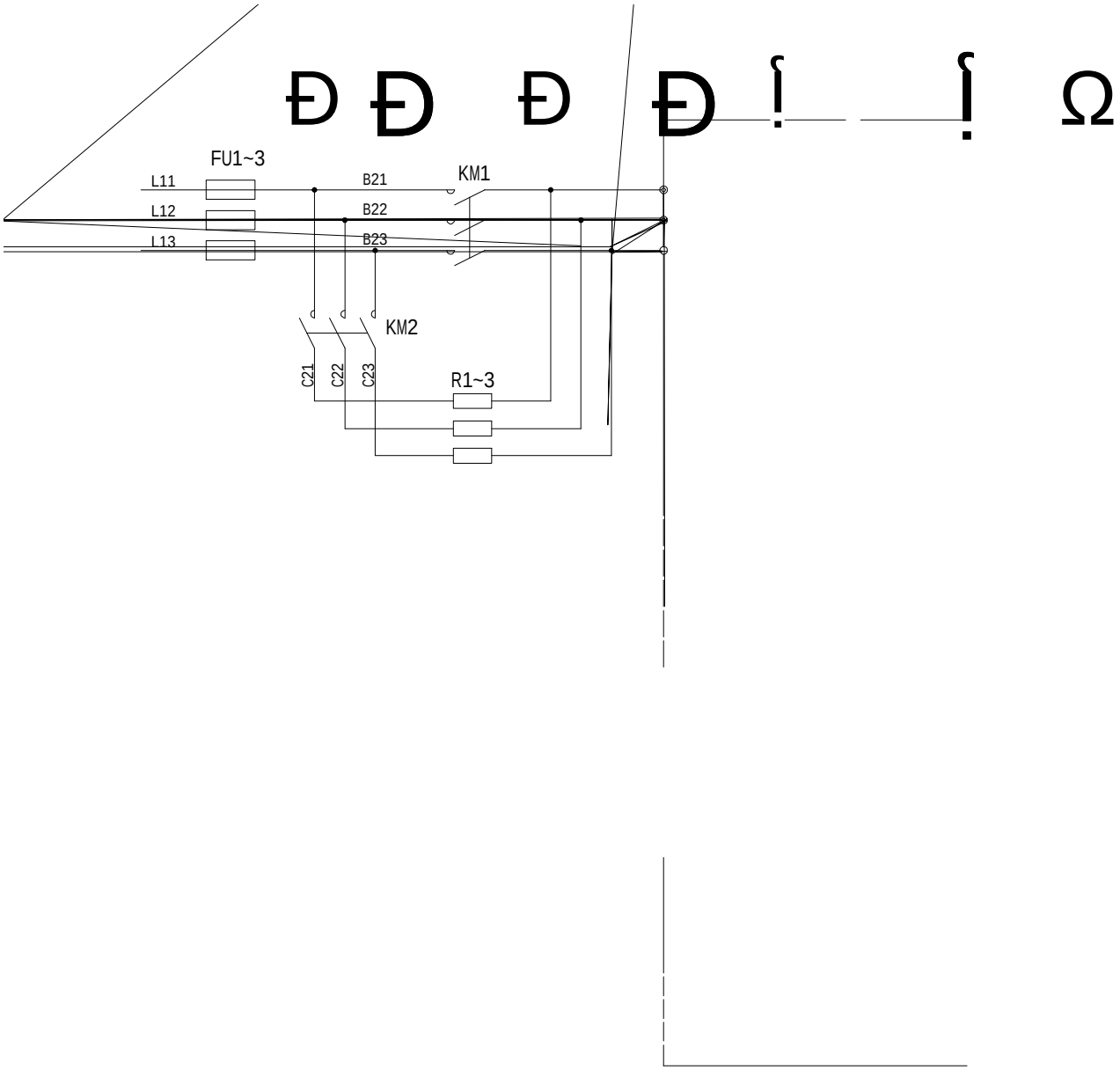
1935kW

	(kW)	(l)	(l/min)
HF680NLC01M-1233-6	8.22	2.2	21
HF680NLC01M-1935-6	12.9	2.2	26

1

2 LCD LCD

3.4



3.5

		660V 690V
		DC24V
		50 / 60Hz
		-15% +10%
		fLN ± 2 ± 4 ≤ 2 fLN/s
		Profibus DP
		98%
		120% 5 1 150% 5 1
		0 *1.414

3.6

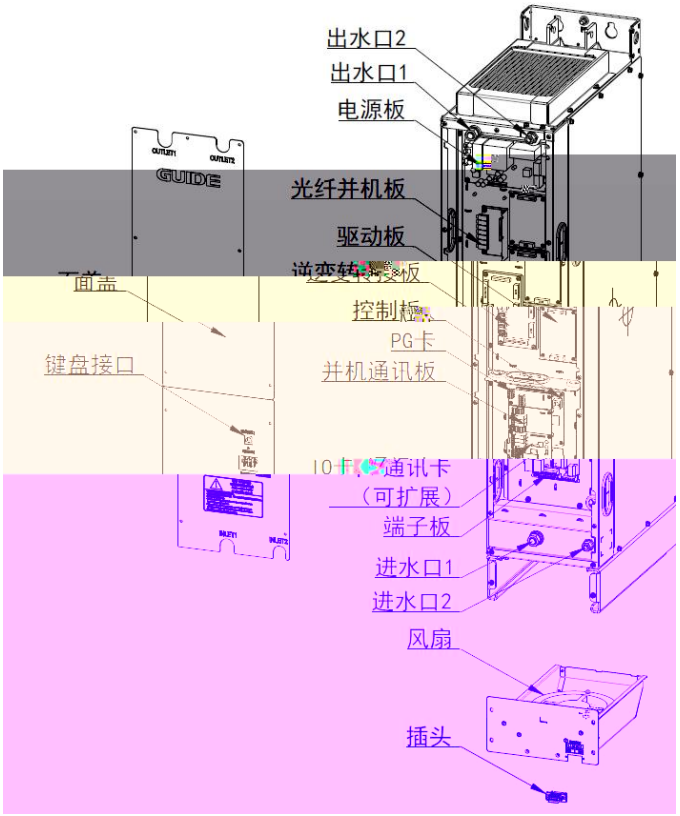
1 +

2 12

4.

4.1

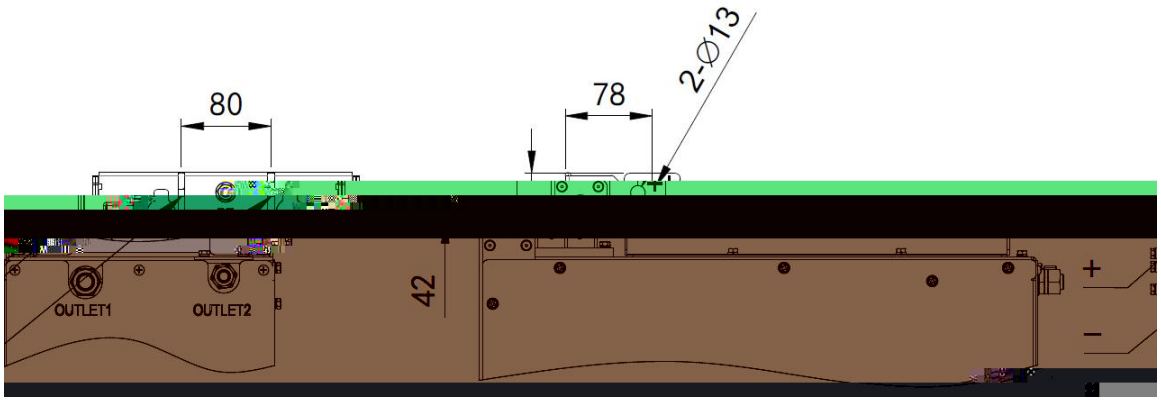
4.2

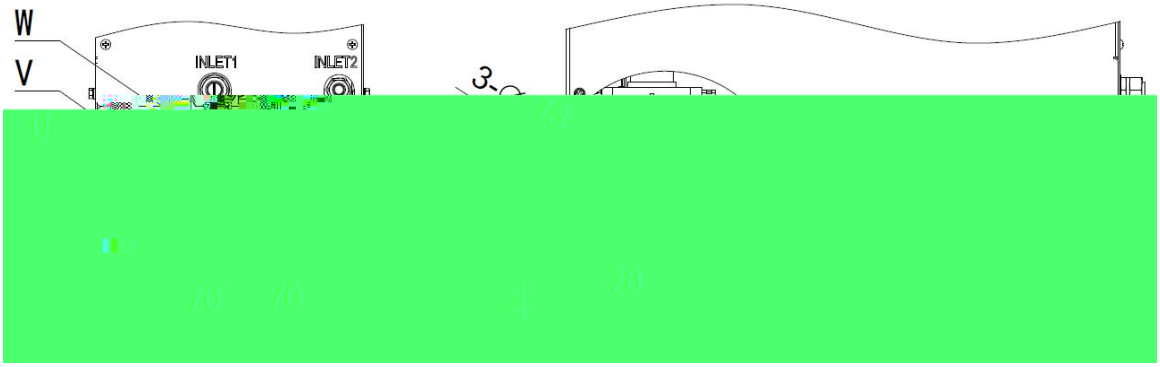


		MVSTBW 2.5/4-STF-5.08		
1	1	KFG2H1613-03	SMC	
1	1	T1613W	SMC	
2	2	KFG2H1209-03	SMC	
2	2	T1209W	SMC	

1

+	
-	
U V W	
PE	





2

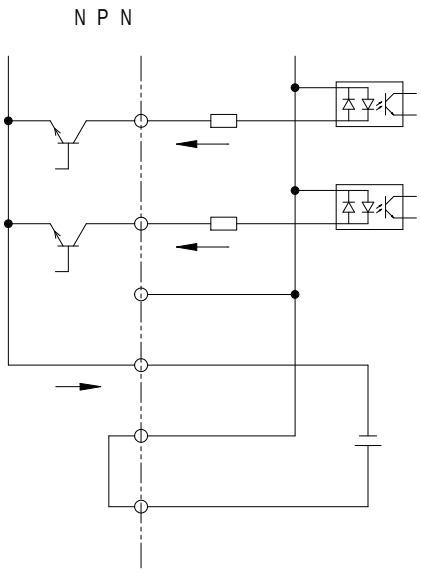
	+10V-GND	10V	+10V 50mA 1kΩ~5kΩ
	+24V-COM	24V	+24V 200mA
	PW		24V DI1~DI5 DO1 PW 24V
	AI1-GND	1	DC -10V~10V 100kΩ
	AI2-GND	2	-10VDC~10VDC/0mA~20mA J1 100kΩ 500Ω
	DI1- PW	1	3.3kΩ 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	AO1-GND	1	J2 0V~10V 0mA~20mA
	DO1-PW	1	0V~24V 0mA~50mA
	DO4A-DO4C	1	250VAC 3A COS =0.4 30VDC 1A
	DO4B-DO4C	2	
	DO5A-DO5C	3	250VAC 2A COS =0.4 30VDC 1A

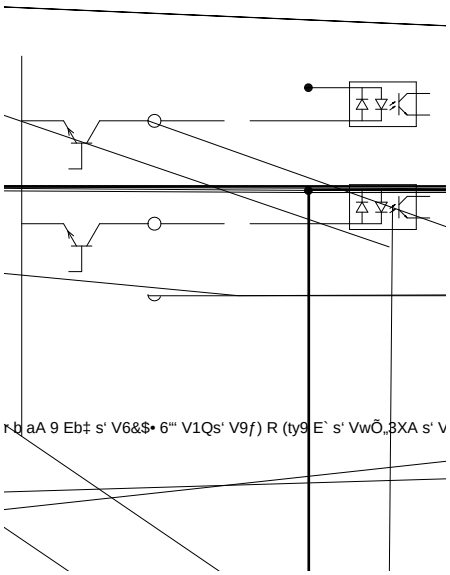
	J2	AO1	
	J1	AI2	

3

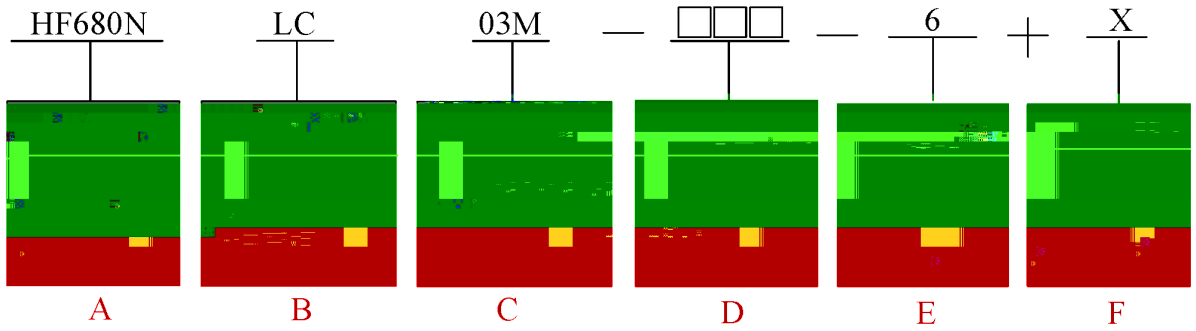
0V

NPN





4.3



A	HF680N
B	LC
C	03M 03C
D	160 160kW 1250 1250kW
E	6 690V
F	

Modbus RTU	MB01	GDHF-AMBX1	Modbus RTU
DP	DP01	GDHF-ADPX1	Profibus DP
PN	PN01	GDHF-APNX1	Profinet
CAN	CAN01	GDHF-ACNX1	CANopen

HF680NLC03M-250-6+PN01 690V/250kW Profinet

	[A]	[kW]		mm H*W*D	kg
HF680NLC03M-160-6	180	160	Q1	1100*253*525	140
HF680NLC03M-200-6	220	200			
HF680NLC03M-250-6	290	250			
HF680NLC03M-280-6	320	280			
HF680NLC03M-315-6	355	315			
HF680NLC03M-355-6	390	355			
HF680NLC03M-400-6	420	400			
HF680NLC03M-450-6	472	450			
HF680NLC03M-500-6	545	500			
HF680NLC03M-560-6	600	560			
HF680NLC03M-630-6	675	630			
HF680NLC03C-710-6	780	710			
HF680NLC03C-800-6	810	800			
HF680NLC03C-900-6	940	900			
HF680NLC03C-1000-6	1007	1000	2*Q1	/	/
HF680NLC03C-1120-6	1200	1120			
HF680NLC03C-1250-6	1300	1250			
HF680NLC03C-1350-6	1412	1350			
HF680NLC03C-1520-6	1589	1520			
HF680NLC03C-1710-6	1788	1710			

	(kW)	(l)	(l/min)
HF680NLC03M-160-6	2.2304	1.6	7
HF680NLC03M-200-6	2.446	1.6	7.5
HF680NLC03M-250-6	3.1808	1.6	9
HF680NLC03M-280-6	3.512	1.6	10
HF680NLC03M-315-6	3.9296	1.6	11
HF680NLC03M-355-6	4.2752	1.6	13
HF680NLC03M-400-6	4.628	1.6	14
HF680NLC03M-450-6	5.1464	1.6	16
HF680NLC03M-500-6	5.924	1.6	18

HF680NLC03M-560-6	6.4856	1.6	20
HF680NLC03M-630-6	7.285	1.6	23
HF680NLC03C-710-6	8.134	1.6	24
HF680NLC03C-800-6	9.215	1.6	24
HF680NLC03C-900-6	10.511	1.6	24

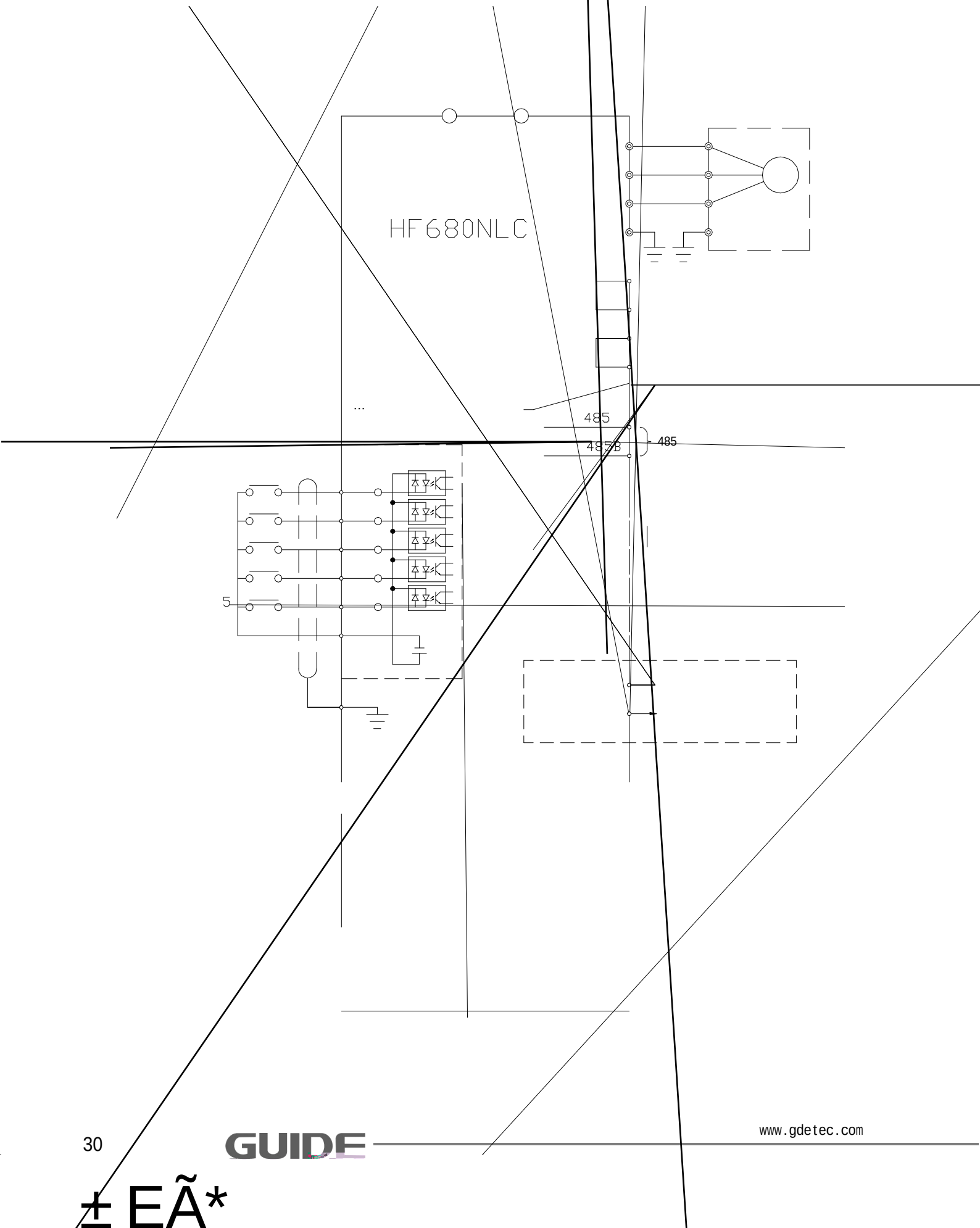
4.4

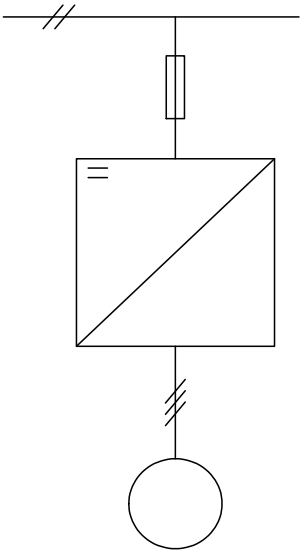
HF680NLC03M-160-6	OCL-200/250-6
HF680NLC03M-200-6	OCL-200/250-6
HF680NLC03M-250-6	OCL-200/250-6
HF680NLC03M-280-6	OCL-315/355-6
HF680NLC03M-315-6	OCL-315/355-6
HF680NLC03M-355-6	OCL-315/355-6
HF680NLC03M-400-6	OCL-400/450-6
HF680NLC03M-450-6	OCL-400/450-6
HF680NLC03M-500-6	OCL-500/560-6
HF680NLC03M-560-6	OCL-500/560-6
HF680NLC03M-630-6	OCL-630/710-6
HF680NLC03C-710-6	OCL-630/710-6
HF680NLC03C-800-6	OCL-800/900-6
HF680NLC03C-900-6	OCL-800/900-6

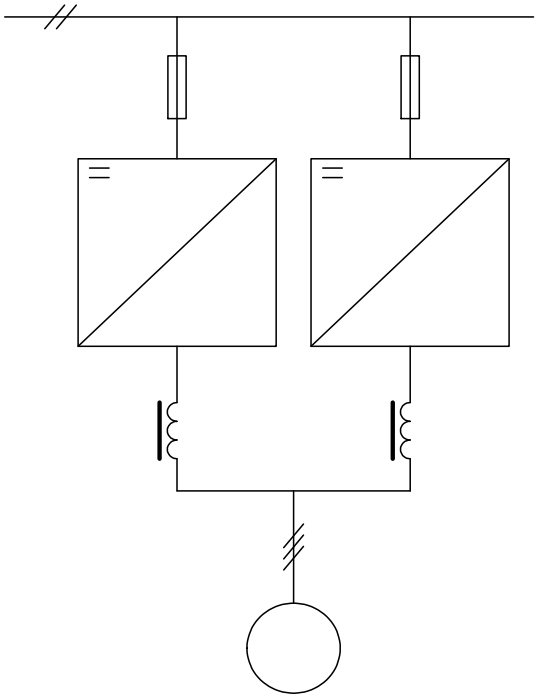
1 200%

2 50% HF680NLC03M

3 HF680NLC03M


HF680NLC
485
485B
485
5





	mm²	V/A
HF680NLC03M-160-6	95	1250/450
HF680NLC03M-200-6	95	1250/550
HF680NLC03M-250-6	95	1250/700
HF680NLC03M-280-6	120	1250/800
HF680NLC03M-315-6	150	1250/800
HF680NLC03M-355-6	2 × 70	1250/1000
HF680NLC03M-400-6	2 × 95	1250/1000
HF680NLC03M-450-6	2 × 95	1250/1250
HF680NLC03M-500-6	2 × 120	1250/1250
HF680NLC03M-560-6	2 × 120	1250/1400
HF680NLC03M-630-6	2 × 150	1250/1600
HF680NLC03M-710-6	3 × 120	1250/1800
HF680NLC03M-800-6	3 × 120	1250/1900
HF680NLC03M-900-6	3 × 150	1250/2200

900kW

4.5

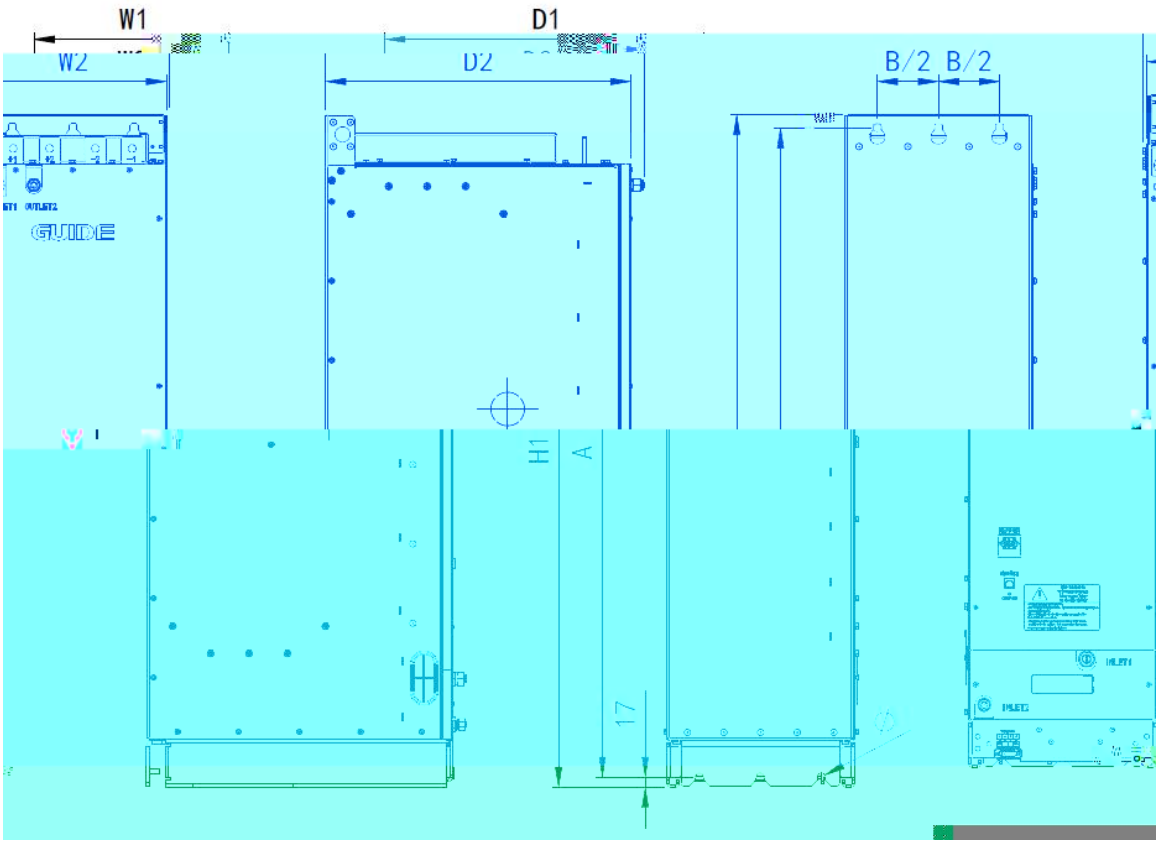
800V 1150V

24V

(V

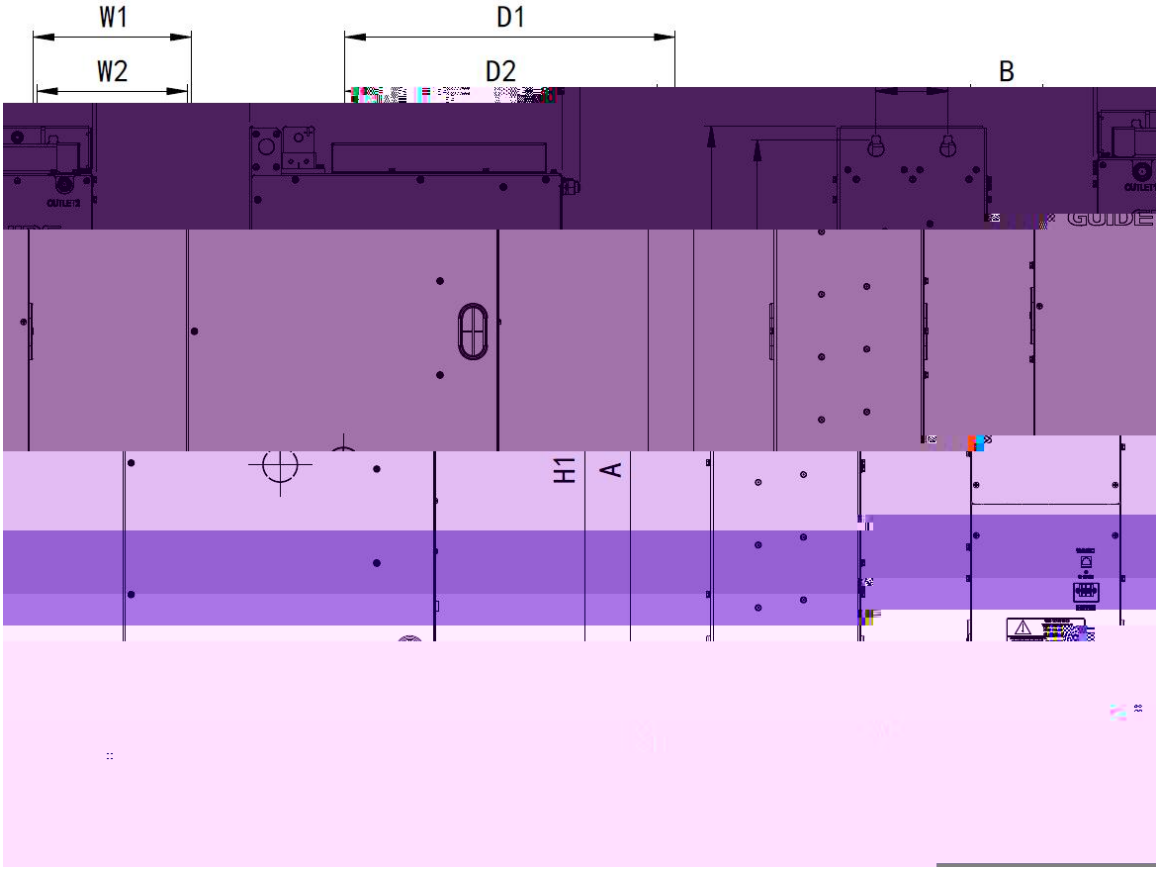
5.

5.1



	mm					mm			8.8	kg
	H1	W1	W2	D1	D2	A	B			
HF680NLC01M-1233-6	1100	320	307	525	500	1064	200	6-φ13	6-M12	260
HF680NLC01M-1935-6										

5.2



mm mm

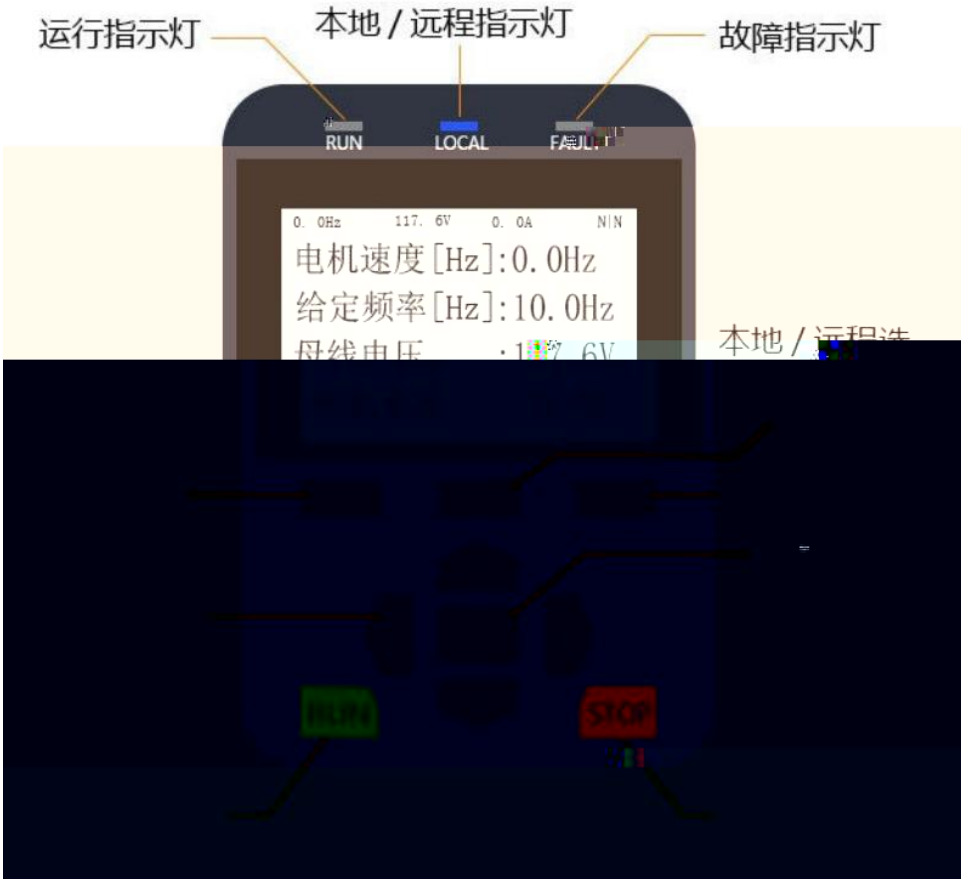
H1 8.8 kg

6.

6.1 LCD

HF680NLC F1

LOCAL/REMOTE F2 RUN STOP /RESET ENTER



6.1.1 LCD

▼

▲

ENTER

RUN STOP

LOCAL/REMOTE /

LCD

“ ” “ ” 2

|

	“ - ”
	:V
	A
	N|N W E

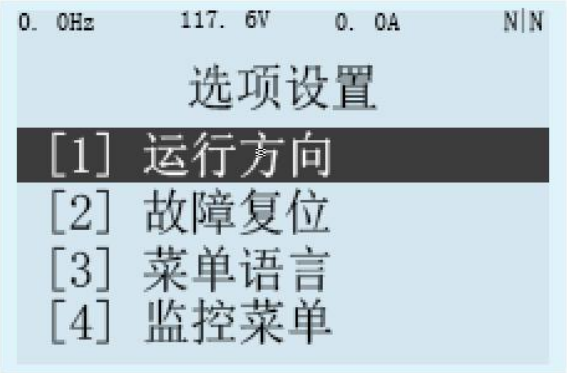
4

ENTER F1/F2

6.1.2 LCD

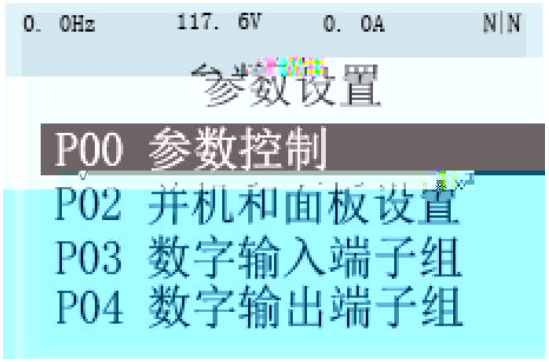
1	Option Set	
2	Parameter Setting	/
3	Reference Set	
4	Function Setting	
5	Fault Record	
6	Security	

6.1.3 LCD



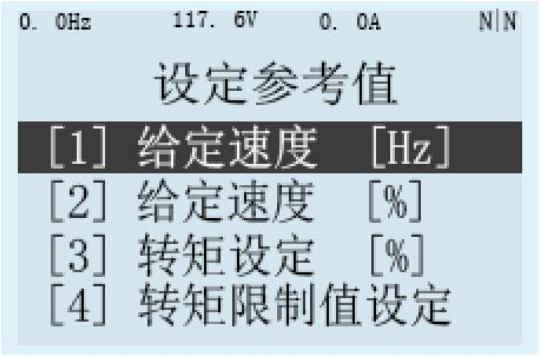
1	Choose Direction	
2	Reset Error	
3	Menu Language	
4	Monitor Setting	
5	LCD Contrast	
6	Time Setting	
7	Version	
8	OLD COM	

1 LCD



Parameter Setting

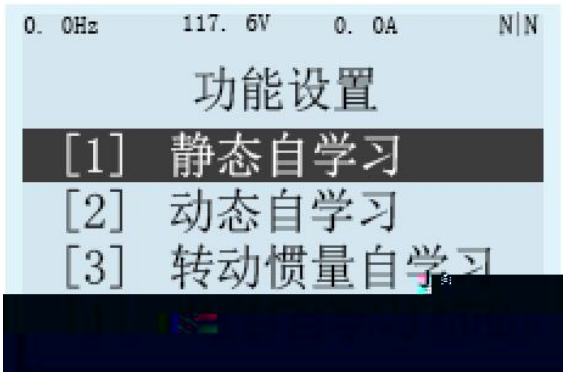
2 LCD



Reference Set

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

3 LCD



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	
12	Backup Para DSP DSP	DSP
13	Restore Para DSP DSP	DSP

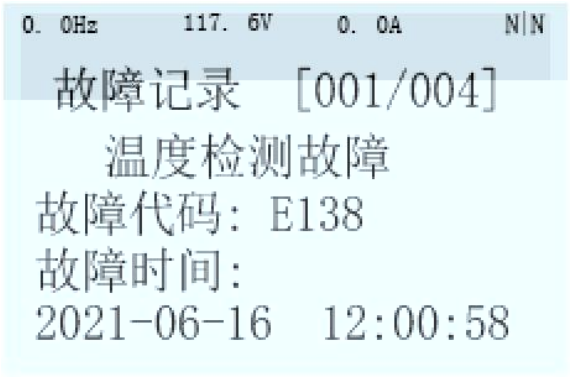
1

2 5

▼

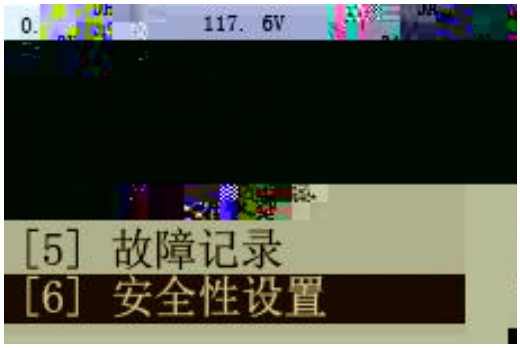
▲ “Enter”

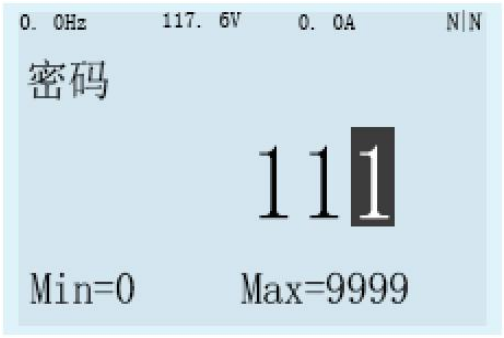
4 LCD



Fault Record

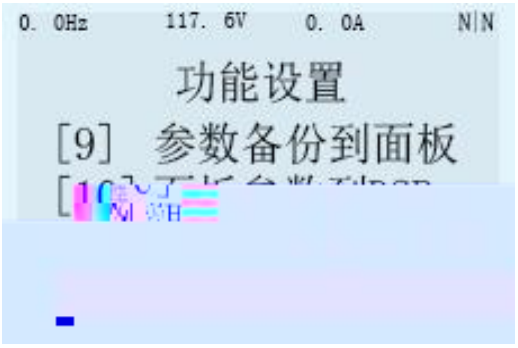
5 LCD

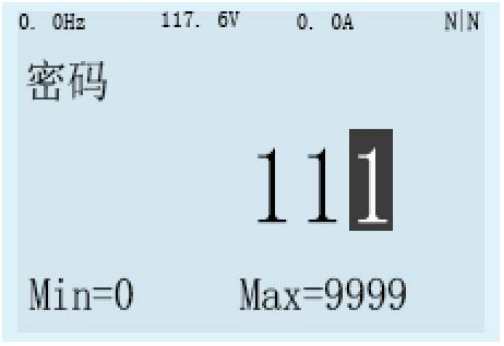




1. Access Permissions

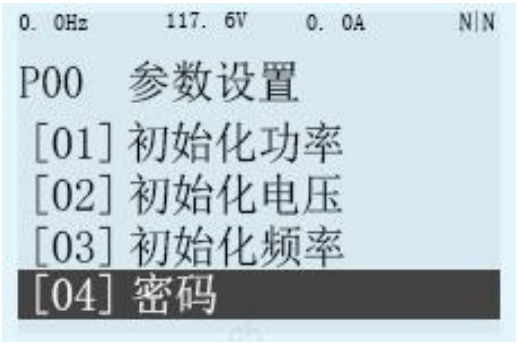
“ENTER” “ ” “ ” “[12] ”

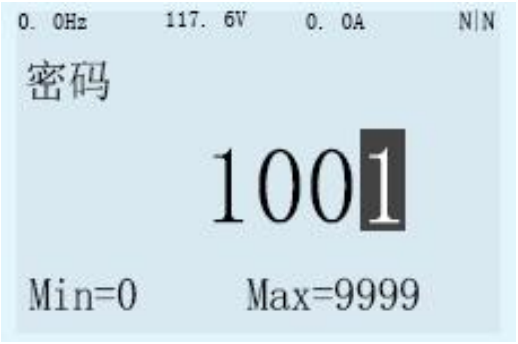




2. “ ” “ ” “ ENTER ”

“ ENTER ” “ ”





3.

“ ” ” P00 ” “ [04] ”

“ ENTER ”

7.

7.1

7.1.1

DI1 DI2 DI4

DO2

DO4 DO

DO5

1

690V 220V

P0.1

P0.1

“ DO4A ” “ DO4C ” “ DO5A ” “ DO5C ”

DO2 PLC

1

P3.0-P3.7 0 PLC DI “ ”

“ H:L ” DI 1

P3.0	1	
P3.1	20	
P3.3	5	
P4.1 DO2	2	

P4.3 DO4	0	DO
P4.4 DO5	32	
P7.0	180%	
P7.4	200%	
P7.12	1200V	
P8.6	0	
P16.0	690V	
P16.4		1233kW 1143A
P16.11	3	
P16.12	3	3K
P24.7	0V	ADJ

690V Local/Remote Local Run

2s

“ AFE ” 49-51Hz “

AFE ”

970V A B

C Stop

+ - + -

Local/Remote Remote PLC

2

690V 220V

http://www.guide.com

P0.1

P0.1

P16.11 0 V/F P4.1 57 P4.3 58 P4.4 59

100.15 100.16 100.17 1

DO2 PLC DO4 DO5

100.15 100.16 100.17 0

参数	名称	值	单位
100.15	DO 功能本地测试 1	1	
100.16	DO 功能本地测试 2	0	
100.17	DO 功能本地测试 3	0	

P3.0-P3.7 0 PLC DI  DI

DI 1

参数	名称	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
101.5	数字量输入端子 [01 ~ 16]																
101.6	数字量输出端子 [01 ~ 16]																

P3.0	1	
P3.1	20	
P3.3	5	
P4.1 DO2	2	
P4.3 DO4	0	DO
P4.4 DO5	32	
P7.0	180%	
P7.4	200%	
P7.12	1200V	
P8.6	0s	

P16.0	690V	
P16.2		1233kW 1233kW
P16.4		1233kW 1143A
P16.11	3	
P24.7	0V	ADJ

690V “ / ” “ ”

运行

103.23

2s 103.31 AFE

49-51Hz 103.30 AFE

103.23 970V

102.54 102.55 102.56

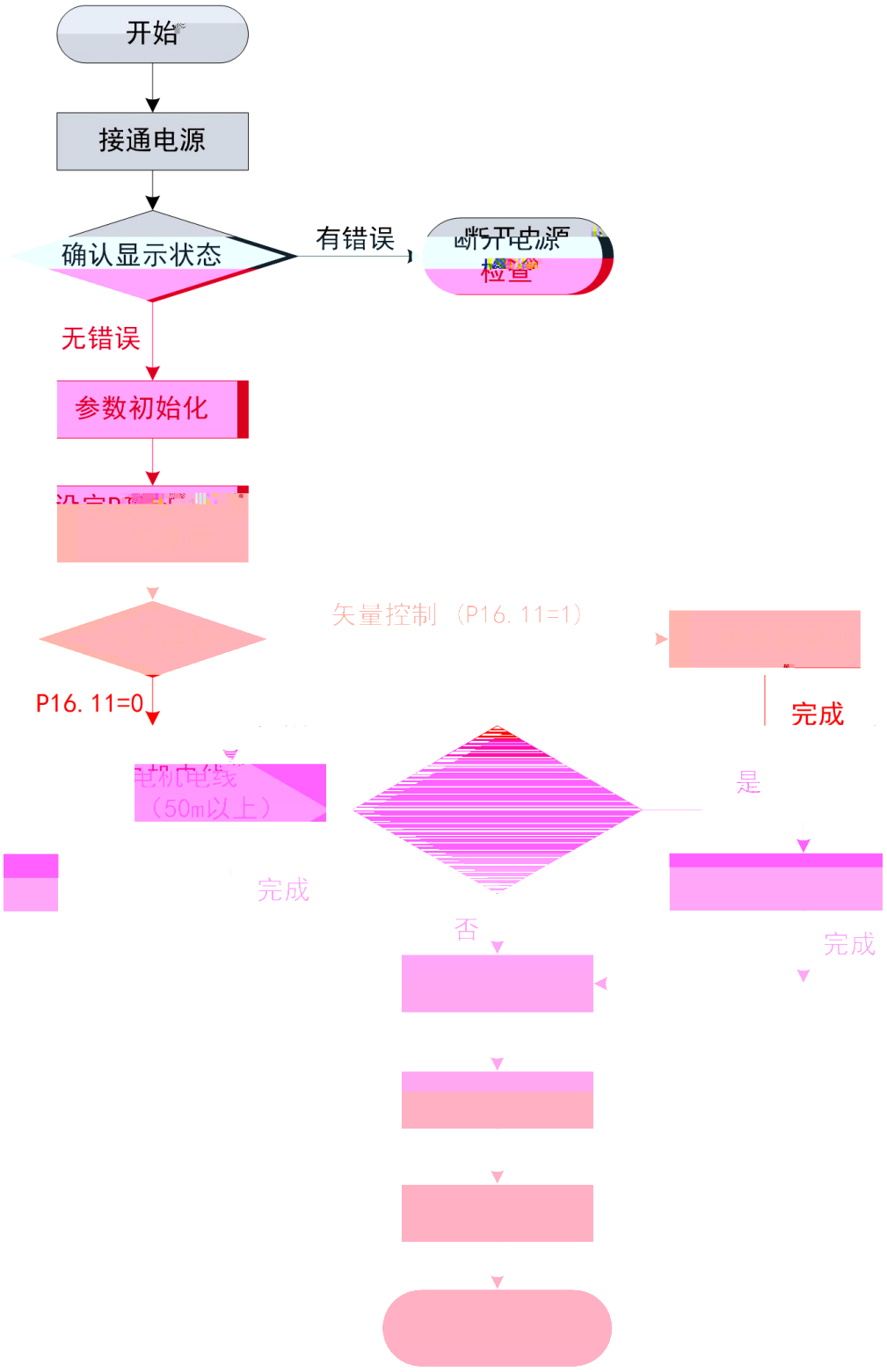
停止

+ - + -

“ / ” “ ”

PLC

7.2



/

V/F P16.11=0 V/F

P16.11=2 P16.11=1

7.3

7.3.1

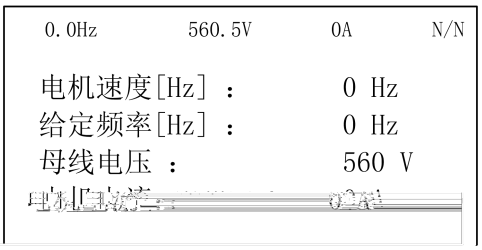
1 ±5V

2 U,V,W

3

4 PG PG

7.3.2



7.3.3

6

7.3.4

	[0]		
	[1]		
P8.0	[2]DP		1
	[3]MODBUS		
	[4]		
P8.3	[0]		1
	[1]		
P8.6	0 300s		0
P8.7		0 300s	0
	[0]I/O		
	[1] 1		
	[2]]M2DBUS 2		
P8.10	[3]		

P16.0		690V
P16.2		
P16.3		
P16.4		
P16.5		
P16.6		
P16.7		(120×P16.5 / P16.6)
P16.9		(120×P16.5 / P16.7)
P16.11		[0]V/F [1] [2]

7.3.5

1

P16.11 [1] [2]

[0] V/F

2

V/F (P20.74)

P20.74

P20.78 P20.79 P20.84

“

” “ ”

3

P20.79 P20.84

P20.85~P20.97

“

” “ ”

4

50%

P20.98 P20.98

7.3.6

HF680NLC

	7.5% 50% 50%
	1/5
	P16
	V/F

7.3.7

1

2 LOCAL/REMOTE LOCAL LOCAL

3 RUN RUN

5Hz

4

5 4 50Hz

6 STOP

7.3.8

1

2

3

4

5

6 STOP

1

2

1

2

7.3.9

8.

8.1

8.1.1

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

8.1.2

0		
1		
5		</RST
14		
15	.NC	
20		

8.1.3

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	[32]

0		
1		
2		ON
32		

8.1.4

8.1.5

P8.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P8.6			0.00 300.00 [s]	0.00 [s]	IGBT

8.1.6

P16.0			560 760 [V]	690 [V]	
P16.2			0.0 4000.0 [kW]	[kW]	
P16.4			0.0 6500.0 [A]	[A]	
P16.11		[0]V/F [1] [2] [3] [4]	0 4	0	[3]
P16.12			3 8 [kHz]	3 [kHz]	3 8kHz

8.2

8.2.1 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	

8.2.2 P3

P3.0	1		0 32	1	
P3.1	2		0 32	2	
P3.2	3		0 32	5	
P3.3	4		0 32	6	
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

Ĵ Ĉ

4	.NC	
5		</RST
6	1 0	8.2
7	2 1	
8	3 2	
9	4 3	
10		
11		
12		
13	.NC	
14		
15	.NC	
16		
17	0	1 0 00 1 01 2 10 3 11 4
18	1	
19	AFE	AFE
20		
21		
22		
23		
24		
25	FUNC 25	
26		
27	FUNC 27	
28		
29	FUNC 29	

8.2.3 P4

16	FUNC 16				
17		0	1		
18		1	2		
19		2	3		
20		3	4		
21	FUNC 21				
22					
23					
24 31	FUNC 24 FUNC 31				
32					
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

8.2.4 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]	9.4
P5.3	AI1	AI1	-20.00 20.00 [mA]	0.000 [mA]	9.4
P5.4	AI1	AI1	-10.00 10.00 [V]	0.000 [V]	9.4
P5.5	AI1	AI1	0.00 20.00 [mA]	0.000 [mA]	9.4
P5.6	AI1	AI1	-300.0 300.0 [%]	0.0 [%]	9.4
P5.7	AI1	AI1	-10.00 10.00 [V]	10.000 [V]	9.4
P5.8	AI1	AI1	0.00 20.00 [mA]	20.000 [mA]	9.4
P5.9	AI1	AI1	-300.0 300.0 [%]	100.0 [%]	9.4
P5.18	AI2	[0] [1]0 +10V [2]-10 +10V [3]0 20mA	0 3	3	

P5.19 AI2

8.2.5 P6

P6.0	AO1	7-1	0 14	2	
P6.1	1		0 1000	0	9.5
P6.2	AO1	AO1	-300.0 300.0 [%]	0.0 [%]	9.5
P6.3	AO1	AO1	-300.0 300.0 [%]	100.0 [%]	9.5
P6.4	AO1 [mA V]	AO1	0.0 100.0 [%]	0.0 [%]	9.5
P6.5	AO1 [mA V]	AO1	0.0 100.0 [%]	100.0 [%]	9.5
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	/AFE	/ AFE
7		
8	(%)	( )
9		
10		
11	(%)	(150)
12	DP	Profibus
13		P6.7 P6.21
14		

8.2.6 P7

P7.0	[1]	1	0.0 300.0 [%]	180.0 [%]	9.6
P7.1	[2]	2	0.0 300.0 [%]	180.0 [%]	9.6
P7.2	[3]	3	0.0 300.0 [%]	180.0 [%]	9.6
P7.3	[4]	4	0.0 300.0 [%]	180.0 [%]	9.6
P7.4	[1]	1	0.0 300.0 [%]	235.0 [%]	9.6
P7.5	[2]	2	0.0 300.0 [%]	235.0 [%]	9.6
P7.6	[3]	3	0.0 300.0 [%]	235.0 [%]	9.6
P7.7	[4]	4	0.0 300.0 [%]	235.0 [%]	9.6
P7.8	[1]	1	0.0 100.0 [%]	20.0 [%]	9.6
P7.9	[2]	2	0.0 100.0 [%]	20.0 [%]	9.6
P7.10	[3]	3	0.0 100.0 [%]	20.0 [%]	9.6
P7.11	[4]	4	0.0 100.0 [%]	20.0 [%]	9.6
P7.12			800 1250 [V]	1200 [V]	9.6
P7.13			400 750 [V]	550 [V]	9.6
P7.14			60.0 130.0 [ ]	87.5 [ ]	9.6
P7.15			50.0 130.0 [ ]	80.0 [ ]	9.6
P7.19	[1]	1	100.0 720.0 [%]	120.0 [%]	9.6
P7.20	[2]	2	100.0 720.0 [%]	120.0 [%]	9.6

P7.21	[3]	3	100.0 720.0 [%]	120.0 [%]	9.6
P7.22	[4]	4	100.0 720.0 [%]	120.0 [%]	9.6
P7.23	1 M1	1	0.00 3.00 [s]	0.50 [s]	9.6
P7.24	1 M2	2	0.00 3.00 [s]	0.50 [s]	9.6
P7.25	1 M3	3	0.00 3.00 [s]	0.50 [s]	9.6
P7.26	1 M4	4	0.00 3.00 [s]	0.50 [s]	9.6
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 [%]	9.6
P7.48	1	1	0.0 300.0 [%]	150.0 [%]	9.6
P7.49	1	1	0.00 60.00 [s]	60.00 [s]	9.6
P7.50	2	2	0.0 300.0 [%]	200.0 [%]	9.6
P7.51	2	2	0.00 5.00 [s]	5.00 [s]	9.6
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]	
P7.69		[0] [1]	0 1	0	9.6
P7.70			-25 100 [V]	0 [V]	9.6
P7.71	1	[0] [1]	0 1	0	9.6
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			0.0 3000.0 [s]	15.0 [s]	
P7.96			0.00 100.00 [s]	0.00 [s]	

8.2.7 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	9.7
P8.6		IGBT	0.00 300.00 [s]	0.00 [s]	9.7
P8.7			0.00 300.00 [s]	0.00 [s]	9.7
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	9.7
P8.14			0.1 10.0	1.0	9.7
P8.15	1		0.0 300.0 [%]	100.0 [%]	9.7
P8.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	9.7

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]	9.7
P8.21	4		0.0 300.0 [%]	300.0 [%]	9.7
P8.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	9.7
P8.23	5		0.0 300.0 [%]	300.0 [%]	9.7
P8.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	9.7
P8.25	6		0.0 300.0 [%]	300.0 [%]	9.7
P8.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	9.7
P8.27	7		0.0 300.0 [%]	300.0 [%]	9.7
P8.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	9.7
P8.29	8		0.0 300.0 [%]	300.0 [%]	9.7
P8.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	9.7
P8.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	9.7
P8.33			0.1 10.0	1.0	9.7
P8.34	1		0.0 300.0 [%]	100.0 [%]	9.7
P8.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	9.7

P8.36	2		0.0 300.0 [%]	200.0 [%]	9.7
P8.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	9.7
P8.38	3		0.0 300.0 [%]	240.0 [%]	9.7
P8.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	9.7
P8.40	4		0.0 300.0 [%]	300.0 [%]	9.7
P8.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	9.7
P8.42	5		0.0 300.0 [%]	300.0 [%]	9.7
P8.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	9.7
P8.44	6		0.0 300.0 [%]	300.0 [%]	9.7
P8.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	9.7
P8.46	7		0.0 300.0 [%]	300.0 [%]	9.7
P8.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	9.7
P8.48	8		0.0 300.0 [%]	300.0 [%]	9.7
P8.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	9.7
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]	

8.2.8 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	9.7
P9.6			0.00 300.00 [s]	0.00 [s]	9.7
P9.7			0.00 300.00 [s]	0.00 [s]	9.7
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	9.7
P9.14			0.1 10.0	1.0	9.7
P9.15	1		0.0 300.0 [%]	100.0 [%]	9.7
P9.16	1	P9.15	0.0 300.0 [s]	3.00 [s]	9.7
P9.17	2		0.0 300.0 [%]	200.0 [%]	9.7

P9.18	2	P9.15 P9.17	0.0 300.0 [s]	4.00 [s]	9.7
P9.19	3		0.0 300.0 [%]	240.0 [%]	9.7
P9.20	3	P9.17 P9.19	0.0 300.0 [s]	7.00 [s]	9.7
P9.21	4		0.0 300.0 [%]	300.0 [%]	9.7
P9.22	4	P9.19 P9.21	0.0 300.0 [s]	10.00 [s]	9.7
P9.23	5		0.0 300.0 [%]	300.0 [%]	9.7
P9.24	5	P9.21 P9.23	0.0 300.0 [s]	10.00 [s]	9.7
P9.25	6		0.0 300.0 [%]	300.0 [%]	9.7
P9.26	6	P9.23 P9.25	0.0 300.0 [s]	10.00 [s]	9.7
P9.27	7		0.0 300.0 [%]	300.0 [%]	9.7
P9.28	7	P9.25 P9.27	0.0 300.0 [s]	10.00 [s]	9.7
P9.29	8		0.0 300.0 [%]	300.0 [%]	9.7
P9.30	8	P9.27 P9.29	0.0 300.0 [s]	10.00 [s]	9.7
P9.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	9.7
P9.33			0.1 10.0	1.0	9.7
P9.34	1		0.0 300.0 [%]	100.0 [%]	9.7
P9.35	1	P9.34	0.0 300.0 [s]	3.00 [s]	9.7
P9.36	2		0.0 300.0 [%]	200.0 [%]	9.7

P9.37	2	P9.34 P9.36	0.0 300.0 [s]	4.00 [s]	9.7
P9.38	3		0.0 300.0 [%]	240.0 [%]	9.7
P9.39	3	P9.36 P9.38	0.0 300.0 [s]	7.00 [s]	9.7
P9.40	4		0.0 300.0 [%]	300.0 [%]	9.7
P9.41	4	P9.38 P9.40	0.0 300.0 [s]	10.00 [s]	9.7
P9.42	5		0.0 300.0 [%]	300.0 [%]	9.7
P9.43	5	P9.40 P9.42	0.0 300.0 [s]	10.00 [s]	9.7
P9.44	6		0.0 300.0 [%]	300.0 [%]	9.7
P9.45	6	P9.42 P9.44	0.0 300.0 [s]	10.00 [s]	9.7
P9.46	7		0.0 300.0 [%]	300.0 [%]	9.7
P9.47	7	P9.44 P9.46	0.0 300.0 [s]	10.00 [s]	9.7
P9.48	8		0.0 300.0 [%]	300.0 [%]	9.7
P9.49	8	P9.46 P9.48	0.0 300.0 [s]	10.00 [s]	9.7
P9.54			0.0 300.0 [%]	0.0 [%]	
P9.55		[0] [1]	0 1	0	
P9.56			0.00 300.00 [s]	3.00 [s]	
P9.57		[0] [1]	0 1	1	
P9.58			0.00 300.00 [s]	1.50 [s]	

8.2.9 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	9.7
P10.6			0.00 300.00 [s]	0.00 [s]	9.7
P10.7			0.00 300.00 [s]	0.00 [s]	9.7
P10.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P10.11					
P10.13		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	9.7
P10.14			0.1 10.0	1.0	9.7
P10.15	1		0.0 300.0 [%]	100.0 [%]	9.7
P10.16	1	P10.15	0.0 300.0 [s]	3.00 [s]	9.7
P10.17	2		0.0 300.0 [%]	200.0 [%]	9.7

P10.18	2	P10.15 P10.17	0.0 300.0 [s]	4.00 [s]	9.7
P10.19	3		0.0 300.0 [%]	240.0 [%]	9.7
P10.20	3	P10.17 P10.19	0.0 300.0 [s]	7.00 [s]	9.7
P10.21	4		0.0 300.0 [%]	300.0 [%]	9.7
P10.22	4	P10.19 P10.21	0.0 300.0 [s]	10.00 [s]	9.7
P10.23	5		0.0 300.0 [%]	300.0 [%]	9.7
P10.24	5	P10.21 P10.23	0.0 300.0 [s]	10.00 [s]	9.7
P10.25	6		0.0 300.0 [%]	300.0 [%]	9.7
P10.26	6	P10.23 P10.25	0.0 300.0 [s]	10.00 [s]	9.7
P10.27	7		0.0 300.0 [%]	300.0 [%]	9.7
P10.28	7	P10.25 P10.27	0.0 300.0 [s]	10.00 [s]	9.7
P10.29	8		0.0 300.0 [%]	300.0 [%]	9.7
P10.30	8	P10.27 P10.29	0.0 300.0 [s]	10.00 [s]	9.7
P10.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	9.7
P10.33			0.1 10.0	1.0	9.7
P10.34	1		0.0 300.0 [%]	100.0 [%]	9.7
P10.35	1	P10.34	0.0 300.0 [s]	3.00 [s]	9.7
P10.36	2		0.0 300.0 [%]	200.0 [%]	9.7

P10.37	2	P10.34 P10.36	0.0 300.0 [s]	4.00 [s]	9.7
P10.38	3		0.0 300.0 [%]	240.0 [%]	9.7
P10.39	3	P10.36 P10.38	0.0 300.0 [s]	7.00 [s]	9.7
P10.40	4		0.0 300.0 [%]	300.0 [%]	9.7
P10.41	4	P10.38 P10.40	0.0 300.0 [s]	10.00 [s]	9.7
P10.42	5		0.0 300.0 [%]	300.0 [%]	9.7
P10.43	5	P10.40 P10.42	0.0 300.0 [s]	10.00 [s]	9.7
P10.44	6		0.0 300.0 [%]	300.0 [%]	9.7
P10.45	6	P10.42 P10.44	0.0 300.0 [s]	10.00 [s]	9.7
P10.46	7		0.0 300.0 [%]	300.0 [%]	9.7
P10.47	7	P10.44 P10.46	0.0 300.0 [s]	10.00 [s]	9.7
P10.48	8		0.0 300.0 [%]	300.0 [%]	9.7
P10.49	8	P10.46 P10.48	0.0 300.0 [s]	10.00 [s]	9.7
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]	

8.2.10 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	9.7
P11.6			0.00 300.00 [s]	0.00 [s]	9.7
P11.7			0.00 300.00 [s]	0.00 [s]	9.7
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	9.7
P11.14			0.1 10.0	1.0	9.7
P11.15	1		0.0 300.0 [%]	100.0 [%]	9.7
P11.16	1	P11.15	0.0 300.0 [s]	3.00 [s]	9.7
P11.17	2		0.0 300.0 [%]	200.0 [%]	9.7

P11.18	2	P11.15 P11.17	0.0 300.0 [s]	4.00 [s]	9.7
P11.19	3		0.0 300.0 [%]	240.0 [%]	9.7
P11.20	3	P11.17 P11.19	0.0 300.0 [s]	7.00 [s]	9.7
P11.21	4		0.0 300.0 [%]	300.0 [%]	9.7
P11.22	4	P11.19 P11.21	0.0 300.0 [s]	10.00 [s]	9.7
P11.23	5		0.0 300.0 [%]	300.0 [%]	9.7
P11.24	5	P11.21 P11.23	0.0 300.0 [s]	10.00 [s]	9.7
P11.25	6		0.0 300.0 [%]	300.0 [%]	9.7
P11.26	6	P11.23 P11.25	0.0 300.0 [s]	10.00 [s]	9.7
P11.27	7		0.0 300.0 [%]	300.0 [%]	9.7
P11.28	7	P11.25 P11.27	0.0 300.0 [s]	10.00 [s]	9.7
P11.29	8		0.0 300.0 [%]	300.0 [%]	9.7
P11.30	8	P11.27 P11.29	0.0 300.0 [s]	10.00 [s]	9.7
P11.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	9.7
P11.33			0.1 10.0	1.0	9.7
P11.34	1		0.0 300.0 [%]	100.0 [%]	9.7
P11.35	1	P11.34	0.0 300.0 [s]	3.00 [s]	9.7
P11.36	2		0.0 300.0 [%]	200.0 [%]	9.7

P11.37	2	P11.34 P11.36	0.0 300.0 [s]	4.00 [s]	9.7
P11.38	3		0.0 300.0 [%]	240.0 [%]	9.7
P11.39	3	P11.36 P11.38	0.0 300.0 [s]	7.00 [s]	9.7
P11.40	4		0.0 300.0 [%]	300.0 [%]	9.7
P11.41	4	P11.38 P11.40	0.0 300.0 [s]	10.00 [s]	9.7
P11.42	5		0.0 300.0 [%]	300.0 [%]	9.7
P11.43	5	P11.40 P11.42	0.0 300.0 [s]	10.00 [s]	9.7
P11.44	6		0.0 300.0 [%]	300.0 [%]	9.7
P11.45	6	P11.42 P11.44	0.0 300.0 [s]	10.00 [s]	9.7
P11.46	7		0.0 300.0 [%]	300.0 [%]	9.7
P11.47	7	P11.44 P11.46	0.0 300.0 [s]	10.00 [s]	9.7
P11.48	8		0.0 300.0 [%]	300.0 [%]	9.7
P11.49	8	P11.46 P11.48	0.0 300.0 [s]	10.00 [s]	9.7
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]	

8.2.11 1 P12

P12.0		[0] [1]	0 1	1	9.8
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 [%]	9.8
P12.23			0.0 20.0 [%]	0.0 [%]	9.8
P12.24			0.0 200.0 [%]	30.0 [%]	9.8
P12.25			0.0 200.0 [%]	20.0 [%]	9.8
P12.26			0.00 2.00 [s]	0.00 [s]	9.8

P12.27			0.00 2.00 [s]	0.00 [s]	9.8
P12.28			0.00 2.00 [s]	0.07 [s]	9.8
P12.29			0.00 2.00 [s]	0.07 [s]	9.8
P12.32			0.0 20.0 [%]	0.0 [%]	9.8
P12.33			0.0 20.0 [%]	0.0 [%]	9.8
P12.34			0.00 2.00 [s]	0.00 [s]	9.8
P12.35			0.00 2.00 [s]	0.00 [s]	9.8
P12.36			0.00 2.00 [s]	0.50 [s]	9.8
P12.37			0.00 2.00 [s]	0.50 [s]	9.8

8.2.12 2 P13

P13.0		[0] [1]	0 1	1	9.8
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 [%]	9.8
P13.23			0.0 20.0 [%]	0.0 [%]	9.8
P13.24			0.0 200.0 [%]	30.0 [%]	9.8
P13.25			0.0 200.0 [%]	20.0 [%]	9.8
P13.26			0.00 2.00 [s]	0.00 [s]	9.8

P13.27			0.00 2.00 [s]	0.00 [s]	9.8
P13.28			0.00 2.00 [s]	0.07 [s]	9.8
P13.29			0.00 2.00 [s]	0.07 [s]	9.8
P13.32			0.0 20.0 [%]	0.0 [%]	9.8
P13.33			0.0 20.0 [%]	0.0 [%]	9.8
P13.34			0.00 2.00 [s]	0.00 [s]	9.8
P13.35			0.00 2.00 [s]	0.00 [s]	9.8
P13.36			0.00 2.00 [s]	0.50 [s]	9.8
P13.37			0.00 2.00 [s]	0.50 [s]	9.8

8.2.13 3 P14

P14.0		[0] [1]	0	1	1	9.8
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					

P14.27			0.00 2.00 [s]	0.00 [s]	9.8
P14.28			0.00 2.00 [s]	0.07 [s]	9.8
P14.29			0.00 2.00 [s]	0.07 [s]	9.8
P14.32			0.0 20.0 [%]	0.0 [%]	9.8
P14.33			0.0 20.0 [%]	0.0 [%]	9.8
P14.34			0.00 2.00 [s]	0.00 [s]	9.8
P14.35			0.00 2.00 [s]	0.00 [s]	9.8
P14.36			0.00 2.00 [s]	0.50 [s]	9.8
P14.37			0.00 2.00 [s]	0.50 [s]	9.8

8.2.14 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					

P15.27			0.00 2.00 [s]	0.00 [s]	9.8
P15.28			0.00 2.00 [s]	0.07 [s]	9.8
P15.29			0.00 2.00 [s]	0.07 [s]	9.8
P15.32			0.0 20.0 [%]	0.0 [%]	9.8
P15.33			0.0 20.0 [%]	0.0 [%]	9.8
P15.34			0.00 2.00 [s]	0.00 [s]	9.8
P15.35			0.00 2.00 [s]	0.00 [s]	9.8
P15.36			0.00 2.00 [s]	0.50 [s]	9.8
P15.37			0.00 2.00 [s]	0.50 [s]	9.8

8.2.15 1 V/F P16

P16.0			560 760 [V]	690 [V]	
P16.2			0.0 3000.0 [kW]	 [kW]	
P16.3			0 700 [V]	690 [V]	
P16.4			0.0 3000.0 [A]	 [A]	
P16.5			0.0 300.0 [Hz]	50.0 [Hz]	
P16.6			0 6000 [rpm]	1465 [rpm]	
P16.7			2 12 [pole]	4 [pole]	9.9
P16.9			0 7200 [rpm]	1500 [rpm]	9.9
P16.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P16.12		2 5kHz	1.00 10.00 [kHz]	3.00 [kHz]	9.9
P16.14	V/F	[0] V/F [1] V/F [2]	0 3	0	9.9
P16.15		[0] [1]	0 1	0	9.9
P16.16			2 500 [ms]	500 [ms]	
P16.17	V/F	[0] [1]	0 1	0	
P16.18			10 1000 [ms]	200 [ms]	

P16.19	[0]	0 1	0	
P16.22		0.00 100.00 [s]	0.00 [s]	9.9
P16.23				

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]	9.9
P16.51			0.0 150.0 [%]	70.0 [%]	9.9
P16.52			0.00 5.00 [Hz]	0.00 [Hz]	9.9
P16.54			0.00 300.00 [s]	0.00 [s]	9.9
P16.55			0.0 150.0 [%]	75.0 [%]	9.9
P16.56			0.00 5.00 [Hz]	0.00 [Hz]	9.9
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 [%]	9.9
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 [%]	

8.2.16 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]	9.9
P17.9			0 7200 [rpm]	1500 [rpm]	9.9
P17.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P17.12			1.00 10.00 [kHz]	3.00 [kHz]	9.9
P17.14	V/F	[0] V/F [1] V/F [2]	0 3	0	9.9
P17.15		[0] [1]	0 1	0	9.9
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]	9.9
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 [%]	9.9
P17.27			0.0 200.0 [%]	100.0 [%]	9.9
P17.30			0.0 100.0 [%]	0.0 [%]	9.9
P17.33	V/F	V/F	0 6	2	9.9
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 [%]	
P17.46	V/F @		0 300	0	
P17.47	@		0 300	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]	9.9
P17.51			0.0 150.0 [%]	70.0 [%]	9.9
P17.52			0.00 5.00 [Hz]	0.00 [Hz]	9.9
P17.54			0.00 300.00 [s]	0.00 [s]	9.9
P17.55			0.0 150.0 [%]	75.0 [%]	9.9
P17.56			0.00 5.00 [Hz]	0.00 [Hz]	9.9
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 [%]	9.9
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 [%]	

8.2.17 3 V/F P18

P18.0			560 760 [V]	690 [V]	
P18.2			0.0 3000.0 [kW]	 [kW]	
P18.3			0 700 [V]	690 [V]	
P18.4			0.0 3000.0 [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]	9.9
P18.9			0 7200 [rpm]	1500 [rpm]	9.9
P18.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P18.12			1.00 10.00 [kHz]	3.00 [kHz]	9.9
P18.14	V/F	[0] V/F [1] V/F [2]	0 3	0	9.9
P18.15		[0] [1]	0 1	0	9.9
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			0.00 100.00 [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			0.0 120.0 [%]	100.0 [%]	
P18.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	9.9
P18.27			0.0 200.0 [%]	100.0 [%]	9.9
P18.30			0.0 100.0 [%]	0.0 [%]	9.9
P18.33	V/F	V/F	0 6	2	9.9
P18.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P18.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P18.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P18.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P18.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P18.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P18.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P18.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P18.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P18.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P18.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P18.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P18.46	V/F @		0 300	0	
P18.47	@		0 300	0	

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]	9.9
P18.51			0.0 150.0 [%]	70.0 [%]	9.9
P18.52			0.00 5.00 [Hz]	0.00 [Hz]	9.9
P18.54			0.00 300.00 [s]	0.00 [s]	9.9
P18.55			0.0 150.0 [%]	75.0 [%]	9.9
P18.56			0.00 5.00 [Hz]	0.00 [Hz]	9.9
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 [%]	9.9
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 [%]	

8.2.18 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]	9.9
P19.9		0 7200 [rpm]	1500 [rpm]	9.9
P19.11	[0]V/F [1] [2] [3] [4]	0 4	0	
P19.12		1.00 10.00 [kHz]	3.00 [kHz]	9.9
P19.14 V/F	[0] V/F [1] V/F [2]	0 3	0	9.9
P19.15	[0] [1]	0 1	0	9.9
P19.16				

P19.22				00 100. [s]	[s]	9.9
P19.23		V/F		0.00 300. [Hz]	0.00 [Hz]	
P19.24		V/F		0.00 300.00 [Hz]	[Hz]	
P19.25				0.0 120.0 [%]	100.0 [%]	
P19.26	V/F		V/F	0.00 10.00 [%]	0.75 [%]	9.9
P19.27				0.0 200.0 [%]	100.0 [%]	9.9
P19.30				0.0 100.0 [%]	0.0 [%]	9.9
P19.33	V/F		V/F	0 6	2	9.9
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 -		

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]	9.9
P19.51			0.0 150.0 [%]	70.0 [%]	9.9
P19.52			0.00 5.00 [Hz]	0.00 [Hz]	9.9
P19.54			0.00 300.00 [s]	0.00 [s]	9.9
P19.55			0.0 150.0 [%]	75.0 [%]	9.9
P19.56			0.00 5.00 [Hz]	0.00 [Hz]	9.9
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 [%]	9.9
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 [%]	

8.2.19 1 P20

P20.0

3

P20.12			0.0 2000.0 [%]	100.0 [%]	9.10
P20.13			20.0 500.0 [ms]	100.0 [ms]	9.10
P20.14		1	0 60000	1024	
P20.15	[0] [1]				

P20.30		[0] P20.31 P20.32 [1] 1 [2] 2 [3]	0 3	0	
P20.31			0.0 100.0 [%]	5.0 [%]	
P20.32			0.0 100.0 [%]	5.0 [%]	
P20.34		[0] [1]	0 1	0	9.10
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 [%]	9.10
P20.38			0.0 100.0 [%]	25.0 [%]	9.10
P20.39			0.0 120.0 [%]	100.0 [%]	9.10
P20.40			0.0 150.0 [%]	100.0 [%]	9.10
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 [%]	
P20.53	Kp		0.0 1000.0 [%]	100.0 [%]	
P20.54	Ki		0.0 1000.0 [%]	100.0 [%]	
P20.55			0.0 1000.0 [%]	100.0 [%]	9.10
P20.56			0.0 1000.0 [%]	100.0 [%]	9.10
P20.57		[0] [1]	0 1	0	9.10
P20.58			0.0 125.0 [%]	100.0 [%]	9.10
P20.59			1.0 25.0 [%]	2.5 [%]	9.10
P20.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	9.10
P20.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	9.10
P20.62			0.0 1000.0 [%]	100.0 [%]	9.10
P20.63			0.0 1000.0 [%]	100.0 [%]	9.10
P20.66	1	1	0.0 1000.0 [%]	100.0 [%]	
P20.67	2	2	0.0 1000.0 [%]	100.0 [%]	
P20.69			0.00 2.00 [%]	1.00 [%]	
P20.70			0.00 2.00 [%]	1.00 [%]	
P20.71		[0] [1]	0 1	0	
P20.72		[0] [1]	0 1	1	
P20.73		[0] × 1 [1] × 10	0 1	0	

P20.74			0.00 650.00 [mOhm]	0.00 [mOhm]	
P20.75			0.70 1.00	0.90	
P20.76	1	1	90.0 110.0 [%]	100.0 [%]	
P20.77	2	2	90.0 110.0 [%]	100.0 [%]	
P20.78			0.00 650.00 [mOhm]	0.00 [mOhm]	
P20.79			0.00 65.50 [mH]	0.000 [mH]	
P20.80	1	1	0.800 1.350	1.140	
P20.81	2	2	0.800 1.350	0.940	
P20.82	3	3	0.800 1.350	1.080	
P20.83	4	4	0.800 1.350	0.950	
P20.84			0.00 655.00 [mH]	0.00 [mH]	
P20.85	85%	85%	40.0 150.0 [%]	108.0 [%]	
P20.86	87.5%	87.5%	40.0 150.0 [%]	106.5 [%]	
P20.87	90%	90%	40.0 150.0 [%]	105.0 [%]	
P20.88	92.5%	92.5%	40.0 150.0 [%]	103.5 [%]	
P20.89	95%	95%	40.0 150.0 [%]	102.0 [%]	
P20.90	102.5%	102.5%	40.0 150.0 [%]	99.0 [%]	
P20.91	105%	105%	40.0 150.0 [%]	96.5 [%]	
P20.92	110%	110%	40.0 150.0 [%]	93.0 [%]	
P20.93	115%	115%	40.0 150.0 [%]	88.5 [%]	
P20.94	120%	120%	40.0 150.0 [%]	83.0 [%]	
P20.95	125%	125%	40.0 150.0 [%]	77.0 [%]	
P20.96	130%	130%	40.0 150.0 [%]	70.5 [%]	
P20.97	135%	135%	40.0 150.0 [%]	63.5 [%]	

P20.98		( )	0.01 300.00 [s]	0.75 [s]	
P20.99			0.00 10.00 [%]	0.00 [%]	

8.2.20 2 P21

P21.0		[0] [1]	0 1	0	9.10
P21.1		[0] [1] 1 [2] 2 [3] [4] P21.3 [5]DP [6]MODBUS [7]	0 7	0	9.10
P21.2			0 7	0	
P21.3			-300.0 300.0 [%]	0.0 [%]	9.10
P21.4	@		0 300	0	
P21.5			0 1000 [ms]	0 [ms]	
P21.6			0.0 200.0 [%]	100.0 [%]	9.10
P21.7		[0] [1] P21.8 P21.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	9.10
P21.8		P21.7 [1]	0.0 300.0 [%]	200.0 [%]	9.10
P21.9		P21.7 [1]	0.0 300.0 [%]	200.0 [%]	9.10

P21.10			0 300	0	
P21.11			0 1000 [ms]	0 [ms]	
P21.12			0.0 2000.0 [%]	100.0 [%]	9.10
P21.13			20.0 500.0 [ms]	100.0 [ms]	9.10
P21.14		1	0 60000	1024	
P21.15		[0] [1]	0 1	0	9.10
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 [%]	9.10
P21.27			0.00 15.00 [%]	2.00 [%]	9.10
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			0.0 100.0 [%]	5.0 [%]	
P21.32			0.0 100.0 [%]	5.0 [%]	
P21.34		[0] [1]	0 1	0	9.10
P21.35			0.0 100.0 [s]	0.0 [s]	
P21.36			50.0 150.0 [%]	110.0 [%]	
P21.37			0.0 150.0 [%]	100.0 [%]	9.10
P21.38			0.0 100.0 [%]	25.0 [%]	9.10
P21.39			0.0 120.0 [%]	100.0 [%]	9.10
P21.40			0.0 150.0 [%]	100.0 [%]	9.10
P21.41			0.0 150.0 [%]	135.0 [%]	
P21.42		[0] [1]	0 1	1	
P21.43			25 1000 [ms]	75 [ms]	
P21.44			25 1000 [ms]	250 [ms]	
P21.45			0.0 100.0 [%]	22.0 [%]	
P21.46			0.0 100.0 [%]	18.0 [%]	
P21.47			0.0 200.0 [%]	92.0 [%]	
P21.48			0.0 200.0 [%]	87.0 [%]	

P21.49			0.0 150.0 [%]	100.0 [%]	
P21.51			0.0 1000.0 [%]	100.0 [%]	
P21.52			0.0 1000.0 [%]	100.0 [%]	
P21.53	Kp		0.0 1000.0 [%]	100.0 [%]	
P21.54	Ki		0.0 1000.0 [%]	100.0 [%]	
P21.55			0.0 1000.0 [%]	100.0 [%]	9.10
P21.56			0.0 1000.0 [%]	100.0 [%]	9.10
P21.57		[0] [1]	0 1	0	9.10
P21.58			0.0 125.0 [%]	100.0 [%]	9.10
P21.59			1.0 25.0 [%]	2.5 [%]	9.10
P21.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	9.10
P21.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	9.10
P21.62			0.0 1000.0 [%]	100.0 [%]	9.10
P21.63			0.0 1000.0 [%]	100.0 [%]	9.10
P21.66	1	1	0.0 1000.0 [%]	100.0 [%]	
P21.67	2	2	0.0 1000.0 [%]	100.0 [%]	
P21.69			0.00 2.00 [%]	1.00 [%]	
P21.70			0.00 2.00 [%]	1.00 [%]	
P21.71		[0] [1]	0 1	0	
P21.72		[0] [1]	0 1	1	
P21.73		[0] × 1 [1] × 10	0 1	0	

P21.74			0.00 650.00 [mOhm]	0.00 [mOhm]	
P21.75			0.70 1.00	0.90	
P21.76	1	1	90.0 110.0 [%]	100.0 [%]	
P21.77	2	2	90.0 110.0 [%]	100.0 [%]	
P21.78			0.00 650.00 [mOhm]	0.00 [mOhm]	
P21.79			0.00 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			0.00 655.00 [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%	40.0 150.0 [%]	93.0 [%]	
P21.93	115%	115%	40.0 150.0 [%]	88.5 [%]	
P21.94	120%	120%	40.0 150.0 [%]	83.0 [%]	
P21.95	125%	125%	40.0 150.0 [%]	77.0 [%]	
P21.96	130%	130%	40.0 150.0 [%]	70.5 [%]	
P21.97	135%	135%	40.0 150.0 [%]	63.5 [%]	

P21.98		( )	0.01 300.00 [s]	0.75 [s]	
P21.99			0.00 10.00 [%]	0.00 [%]	

8.2.21 3 P22

P22.0		[0] [1]		0 1 0	9.10
P22.1		[0] [1] 1 [2] 2 [3] [4] P22.3 [5]DP [6]MODBUS [7]		0 7 0	9.10
P22.2				0 7 0	
P22.3				-300.0 300.0 [%] 0.0 [%]	9.10
P22.4	@			0 300 0	
P22.5				0 1000 [ms] 0 [ms]	
P22.6				0.0 200.0 [%] 100.0 [%]	9.10
P22.7		[0] [1] P22.8 P22.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]		0 7 0	9.10
P22.8		P22.7 [1]		0.0 300.0 [%] 200.0 [%]	9.10
P22.9		P22.7 [1]		0.0 300.0 [%] 200.0 [%]	9.10

P22.10			0 300	0	
P22.11			0 1000 [ms]	0 [ms]	
P22.12			0.0 2000.0 [%]	100.0 [%]	9.10
P22.13			20.0 500.0 [ms]	100.0 [ms]	9.10
P22.14		1	0 60000	1024	
P22.15	[0] [1]		0 1	0	9.10
P22.16					

P2

P22.49			0.0 150.0 [%]	100.0 [%]	
P22.51			0.0 1000.0 [%]	100.0 [%]	
P22.52			0.0 1000.0 [%]	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 [%]	9.10
P22.56			0.0 1000.0 [%]	100.0 [%]	9.10
P22.57		[0] [1]	0 1	0	9.10
P22.58			0.0 125.0 [%]	100.0 [%]	9.10
P22.59			1.0 25.0 [%]	2.5 [%]	9.10
P22.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	9.10
P22.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	9.10
P22.62			0.0 1000.0 [%]	100.0 [%]	9.10
P22.63			0.0 1000.0 [%]	100.0 [%]	9.10
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 [%]	

8.2.22 4 P23

[0]
[1]

0 1 0

[1]

P23.10	0 300	0
P23.11	0 1000 [ms]	0 [ms]
P23.12	0.0 2000.0 [%]	

P23.30		[0] P23.31 P23.32 [1] 1 [2] 2 [3]	0 3	0	
P23.31			0.0 100.0 [%]	5.0 [%]	
P23.32			0.0 100.0 [%]	5.0 [%]	
P23.34		[0] [1]	0 1	0	9.10
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 [%]	9.10
P23.38			0.0 100.0 [%]	25.0 [%]	9.10
P23.39			0.0 120.0 [%]	100.0 [%]	9.10
P23.40			0.0 150.0 [%]	100.0 [%]	9.10
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 [%]	1000.0 [%]	100.0 [%]	
P23.54	Ki		0.0 [%]	1000.0 [%]	100.0 [%]	
P23.55			0.0 [%]	1000.0 [%]	100.0 [%]	9.10
P23.56			0.0 [%]	1000.0 [%]	100.0 [%]	9.10
P23.57		[0] [1]	0	1	0	9.10
P23.58						

P23.74					0.00 [mOhm]	650.00 [mOhm]	0.00 [mOhm]
P23.75					0.70	1.00	0.90
P23.76		1		1	90.0 [%]	110.0 [%]	100.0 [%]
P23.77		2		2	90.0 [%]	110.0 [%]	100.0 [%]
P23.78					0.00 [mOhm]	650.00 [mOhm]	0.00 [mOhm]
P23.79					0.00 [mH]	65.50 [mH]	0.000 [mH]
P23.80	1		1		0.800	1.350	1.140
P23.81	2		2		0.800	1.350	0.940
P23.82	3		3		0.800	1.350	1.080
P23.83	4		4		0.800	1.350	0.950
P23.84					0.00 [mH]	655.00 [mH]	0.00 [mH]
P23.85		85%	85%		40.0 [%]	150.0 [%]	108.0 [%]
P23.86		87.5%	87.5%		40.0 [%]	150.0 [%]	106.5 [%]
P23.87		90%	90%		40.0 [%]	150.0 [%]	105.0 [%]
P23.88		92.5%	92.5%		40.0 [%]	150.0 [%]	

P23.98		( )	0.01 300.00 [s]	0.75 [s]	
P23.99			0.00 10.00 [%]	0.00 [%]	

8.2.23 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	

8.2.24 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	[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	

P33.70	[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

9.

9.1

450kW 900kW 450kW

P2.0

9.2

P12.0 [0] [1]

1 [0]

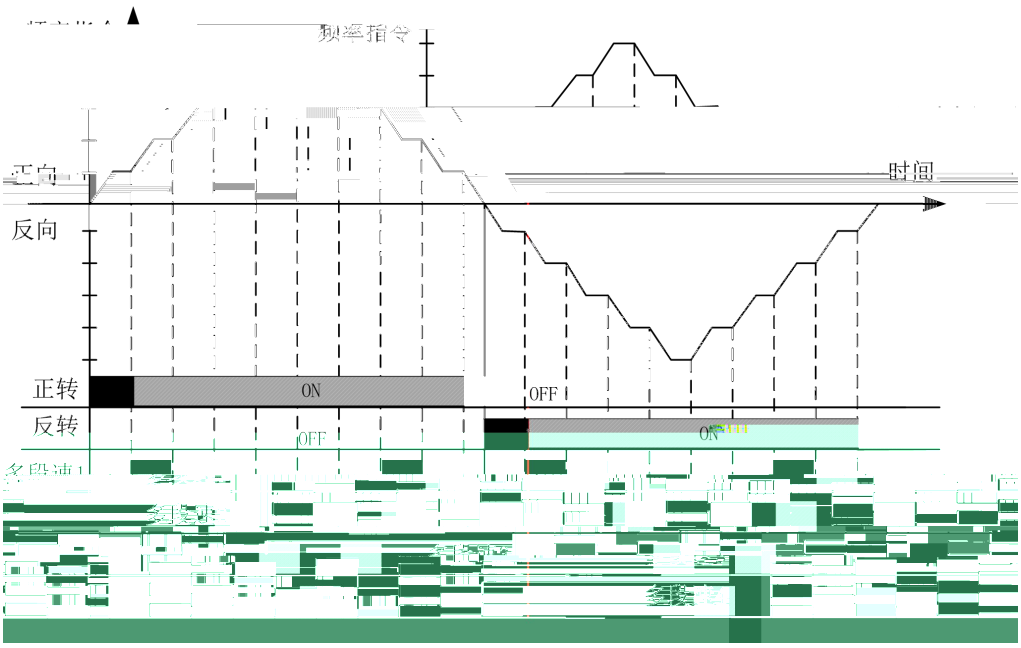
[1] [2] ---1

[6] 1 0 ---2

[7] 2 1 ---3

[8] 3 2 ---4

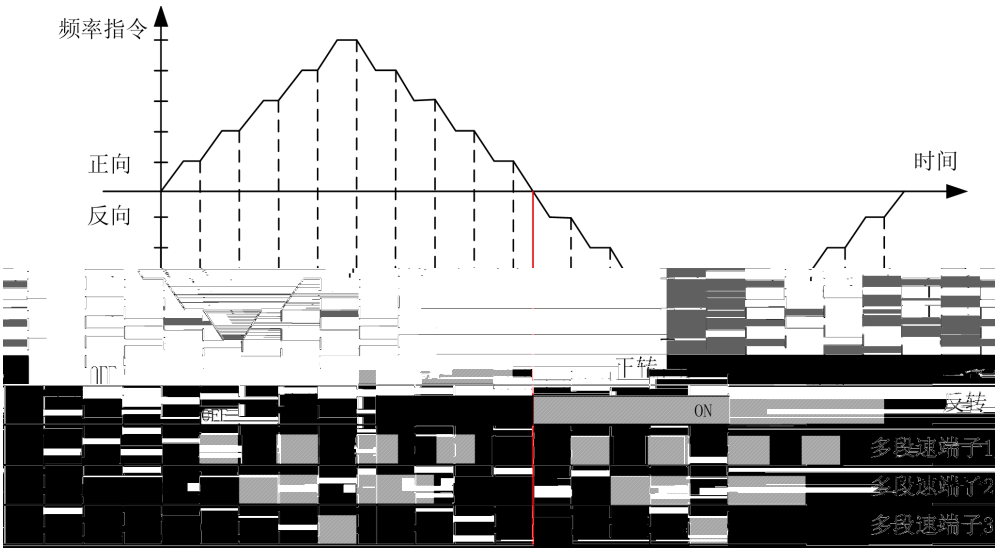
[9] 4 3 ---5



2 [1]

4 16 (8421)

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

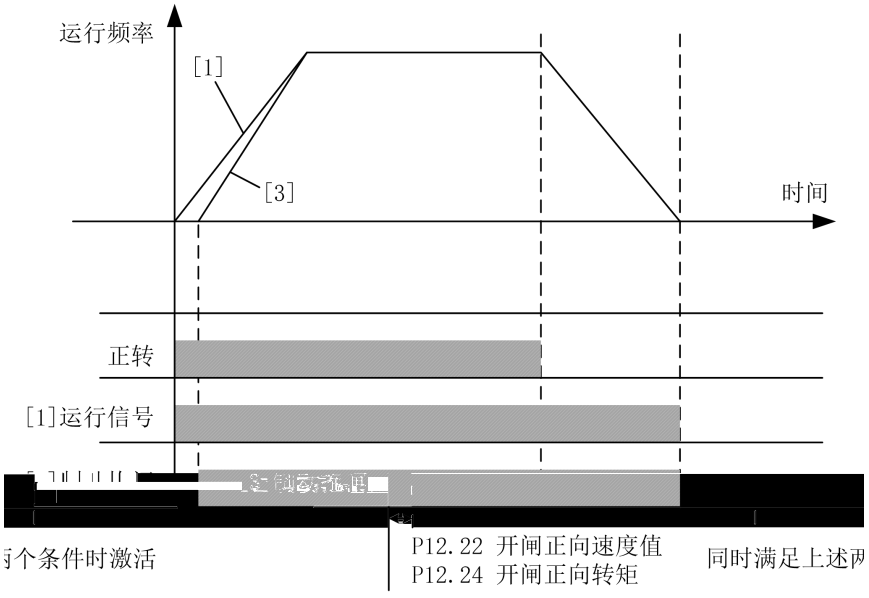


9.3

/

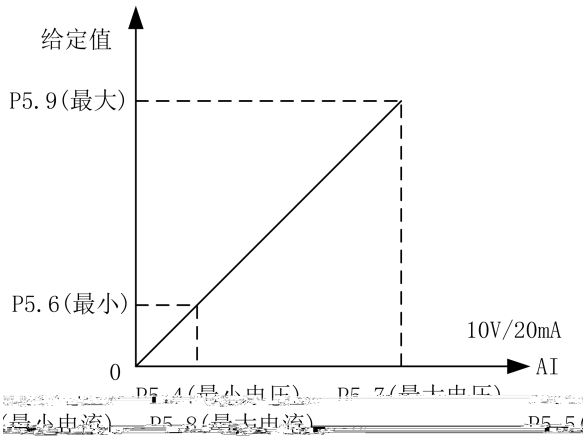
[1] [3] [3]

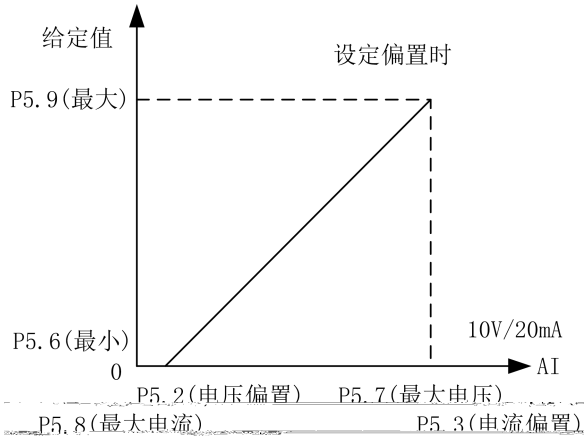
[1] [3]



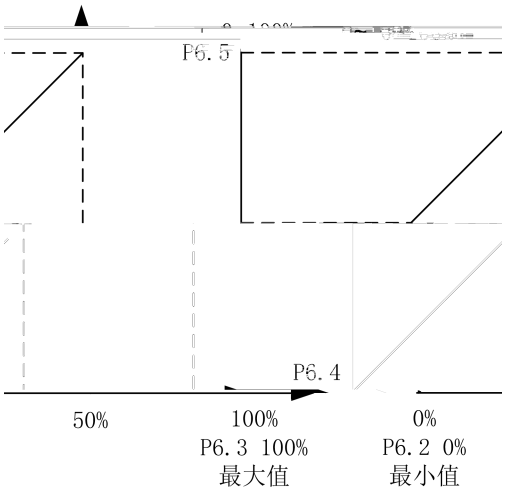
个条件时激活 同时满足上述两

9.4

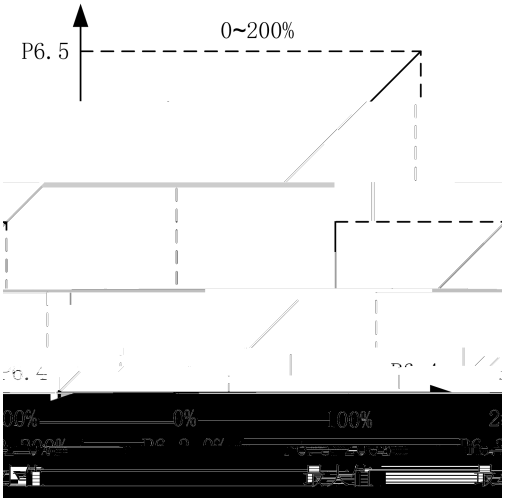




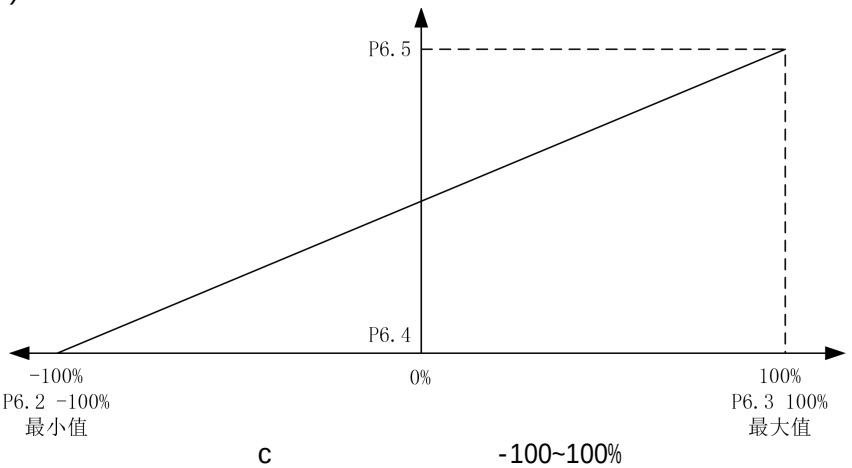
9.5



(a) 0~100%



b 0~200%



c -100~100%

9.6

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 $\frac{(I_a + I_b + I_c)}{3} > P7.8 \quad P16.4 \quad 1.414$

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 ¦

3

ϰd

11

P7.64 P7.65 P7.66 HF650LC

30kW P7.64 1

P7.65

P7.66

P16.66≥P16.65 P16.0 380V P7.65 0V 597V

P7.66 20V 617V

$$= 1.075 \quad \sqrt{2} \quad 16.0 + 20 + \quad 7.65$$

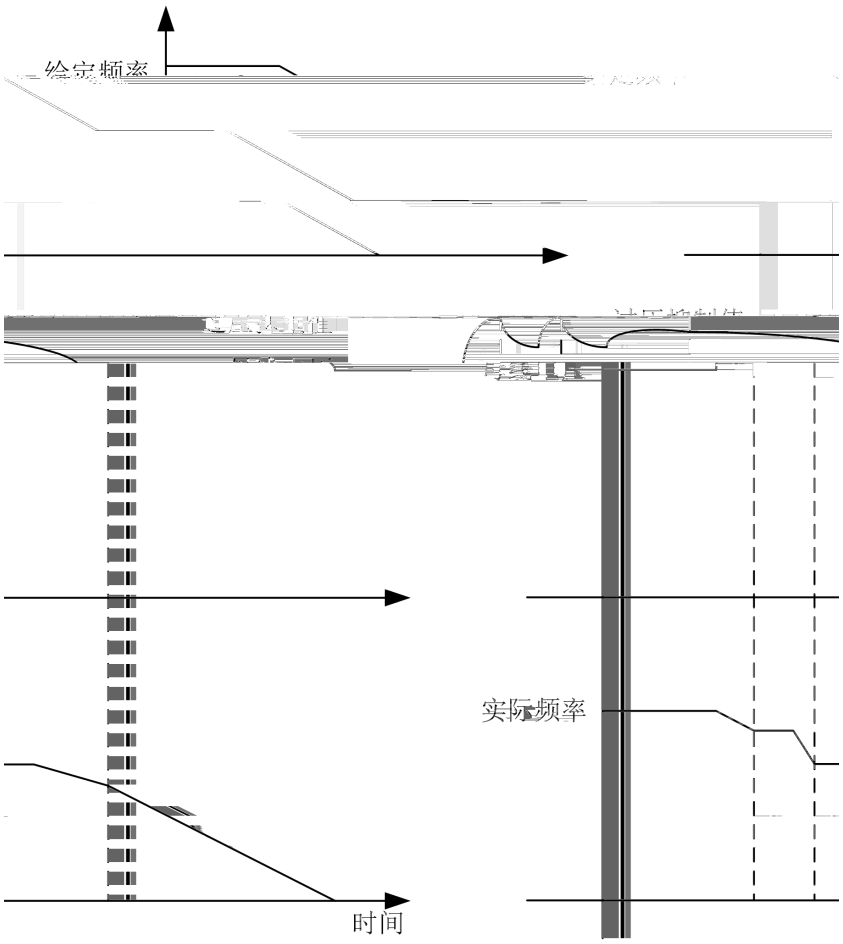
$$= 1.075 \quad \sqrt{2} \quad 16.0 + 20 + \quad 7.66$$

12

P7.69 P7.70 P7.69 0

P16.0 380V P7.70 0V

611V $= 1.1 \quad \sqrt{2} \quad 16.0 + 20 + \quad 7.70$



9.7

1

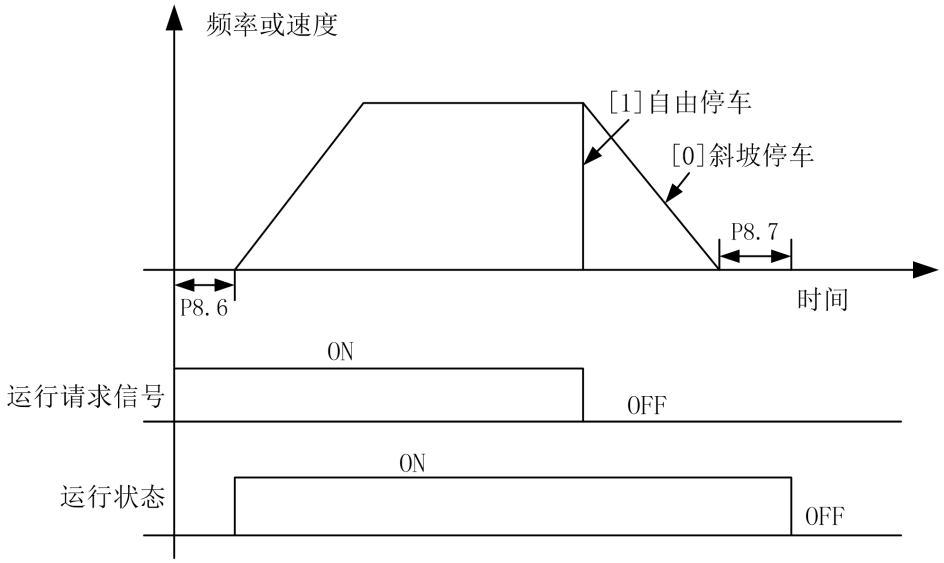
P8.3

[0]

[1]

P8.6 P8.6

P8.7

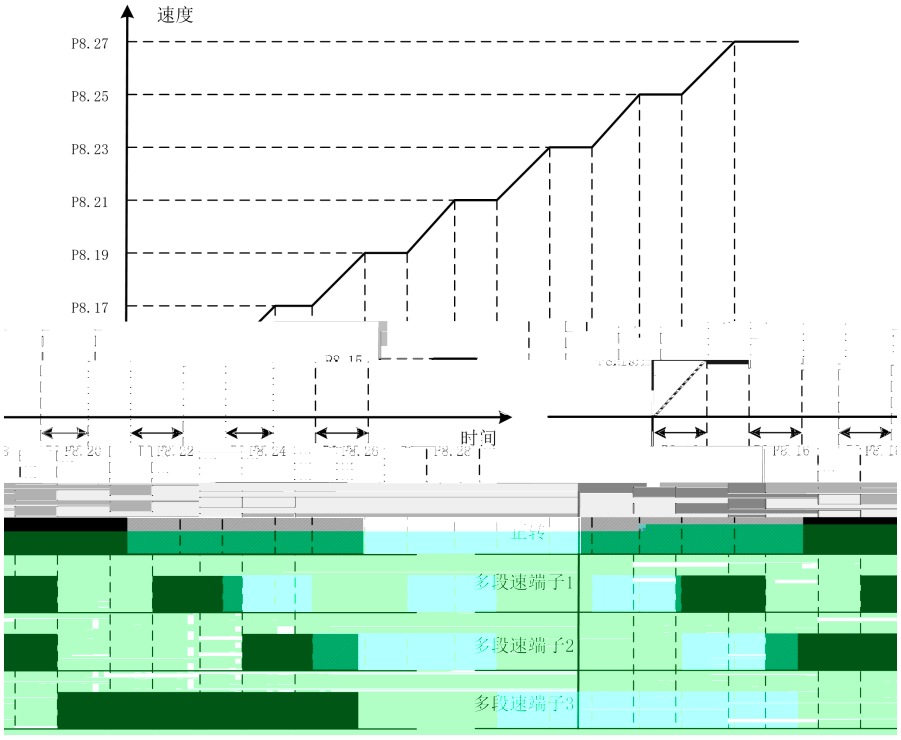


2

P8.14

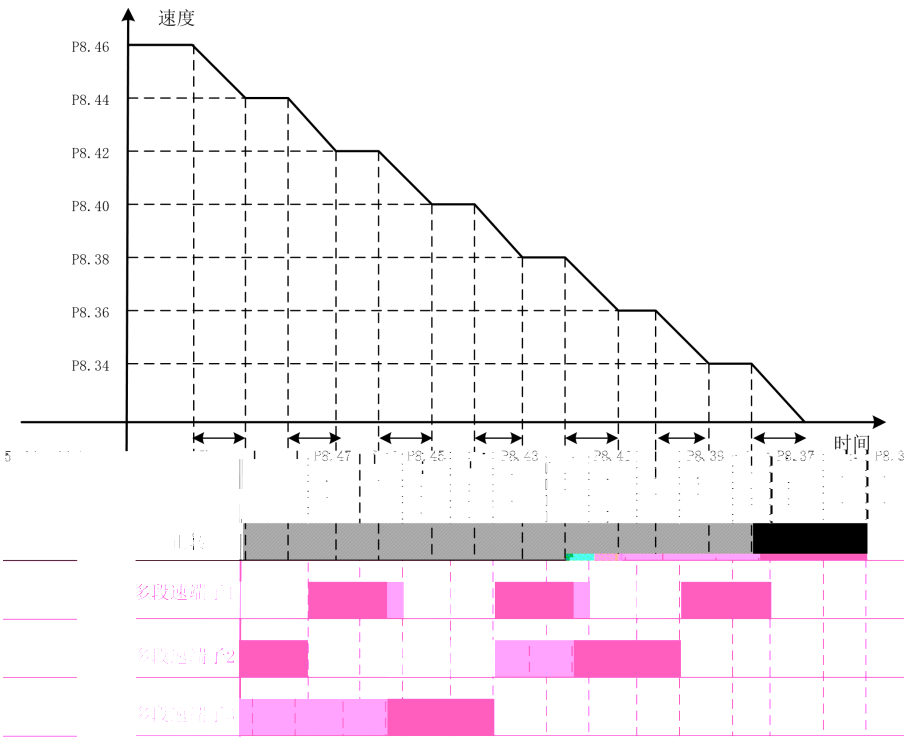
P8.14 P8.33

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)

9.8

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
4	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	1	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]

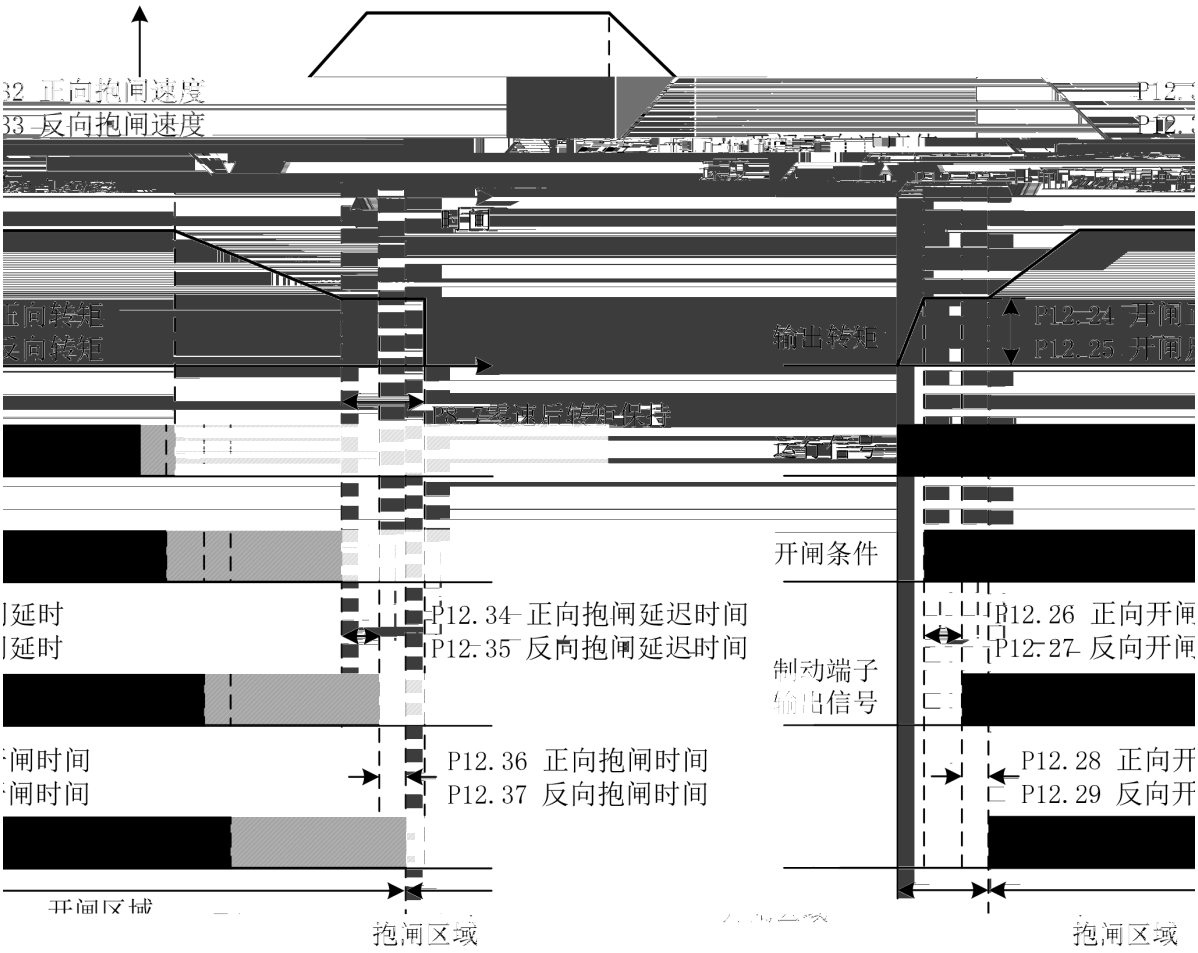
P12.22 P12.23 P12.24 P12.25

P12.32[ ] P12.33[ ]

P12.28 P12.29

P12.36 P12.37

P16



9.9 V/F

1

P16.0 P16.9

+Pñ @ñ RId l

P16.7 120 × P16.5/P16.6 P16.9

120 × P16.5/P16.7

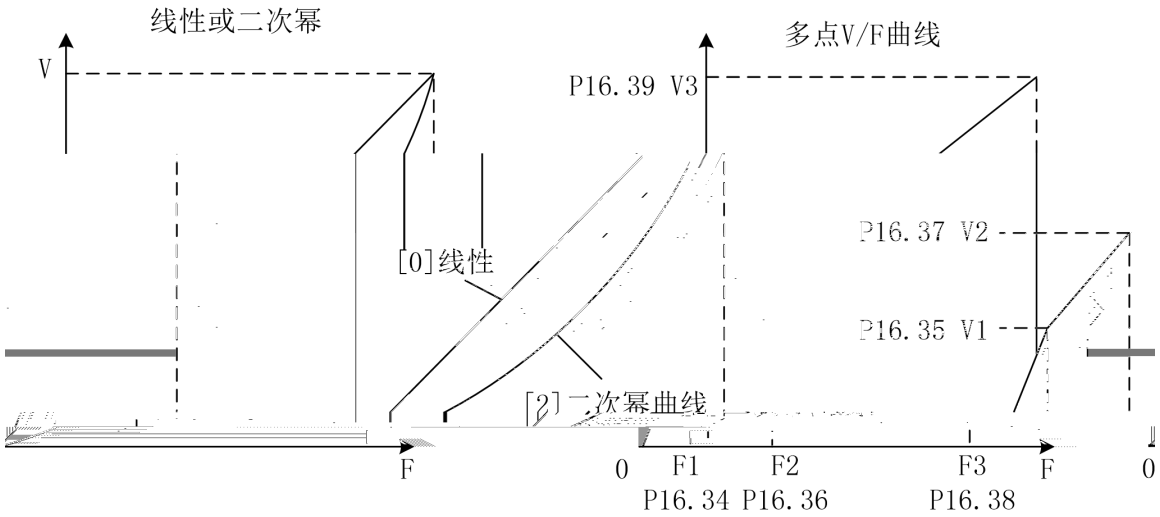
P16.2 P16.4

2

P16.12

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

[2]



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

V1 V2 V3 F1 F2 F3

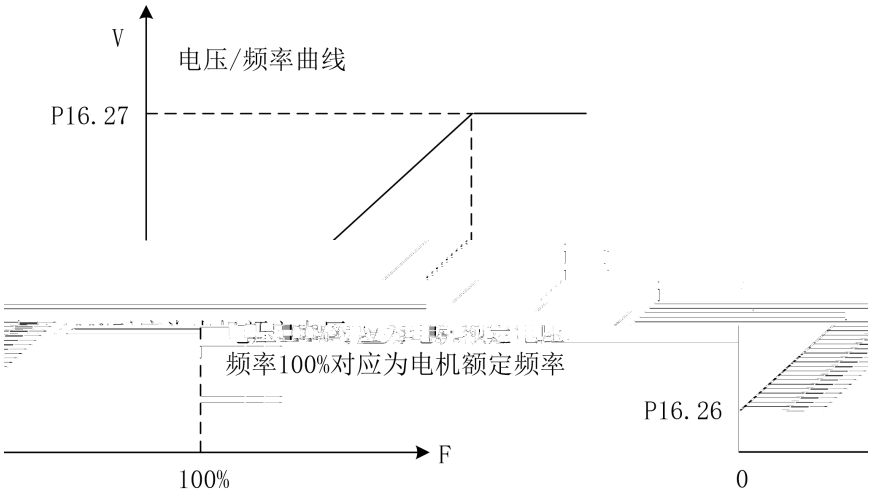
4

P16.15 V/F

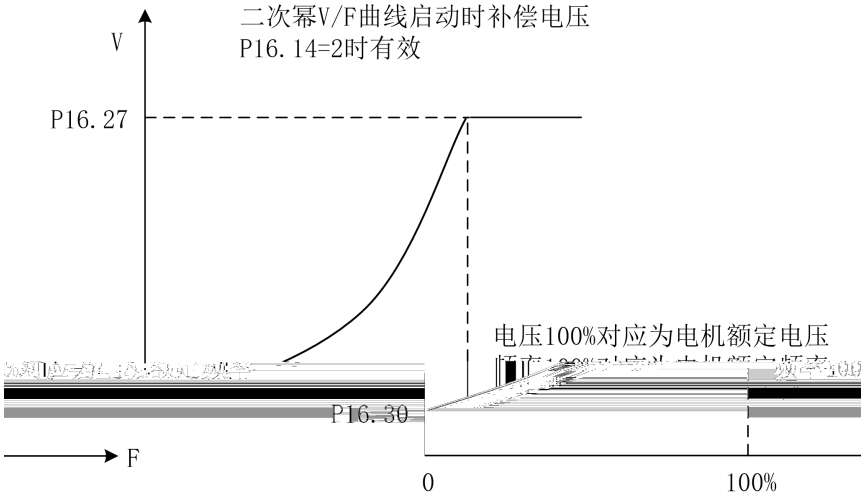
V/F

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



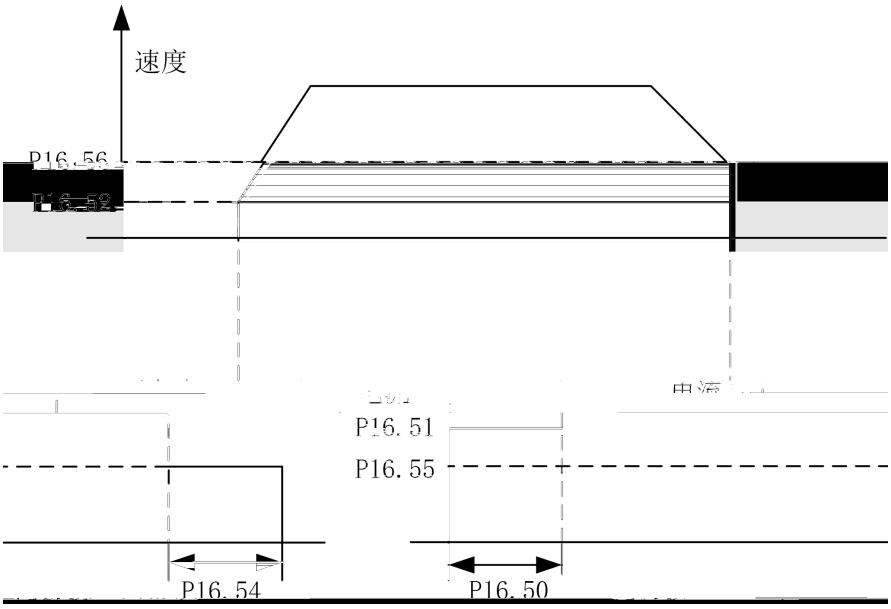
6

P16.50 P16.56

V/F

P16.50 P16.51 P16.52

P16.54 P16.55 P16.56



7

P16.64

9.10

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

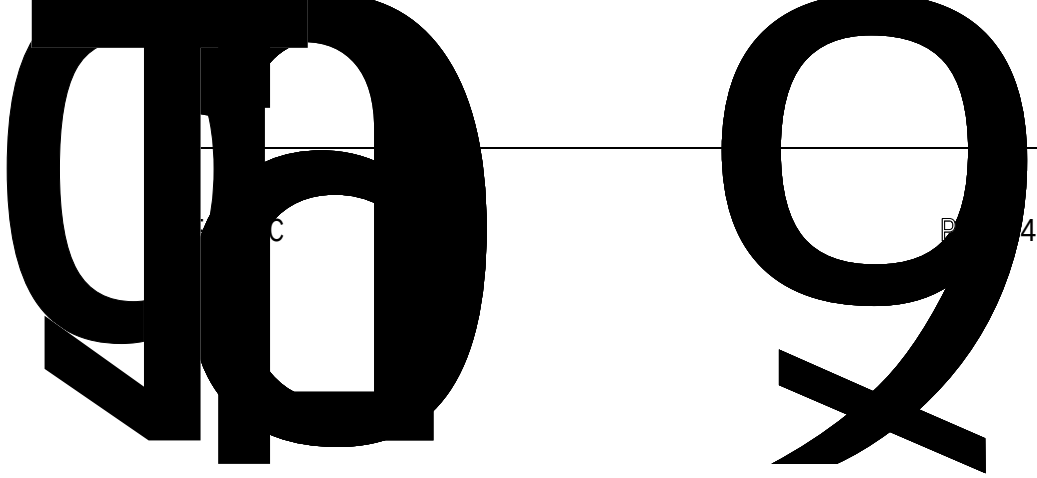
0 P20.26 P20.27 0

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

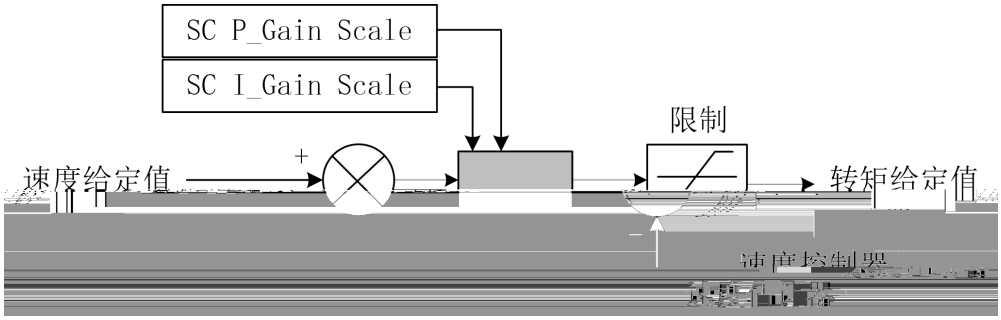
P20.34 [1] 2

200 P20.26 P20.27 0

HF650LC P20.34 [1]



%



10 DROOP

9.11

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	

10.

10.1

W01	SYS_NOT_RDY	(Ready)	
W02	NO_DRV_ENABLE	[ ]	P3
W03	LOCAL_EM	[ ]	P3
W04	REMOTE_EM	[ ]	P3
W06	O.T	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
W22	2 SLV2_CAN_ERR	2	2
W23	3 SLV3_CAN_ERR	3	3
W24	4 SLV4_CAN_ERR	4	4
W25	5 SLV5_CAN_ERR	5	5

10.2

[E050]	U ERR_UT not reset	IGBT IGBT
[E051]	U ERR_UT not reset	IGBT IGBT
[E052]	V ERR_UT not reset	IGBT IGBT
[E053]	V ERR_UT not reset	IGBT IGBT
[E054]	W ERR_UT not reset	IGBT IGBT
[E055]	W ERR_UT not reset	IGBT IGBT
[E056]	ERR_SLAVE_FAULT not reset	
[E100]	OV	P8.35(1) P7.12( )
[E105]	UV	P7.13( )
[E110]	OC	P7.4([1]) P7.4( )
[E111]	OL	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
[E121]	IGBT1 OT1	
[E122]	IGBT2 OT2	
[E123]	IGBT3 OT3	
[E124]	IGBT4 OT4	
[E125]	IGBT5 OT5	
[E126]	IGBT6 OT6	
[E127]	IGBT7 OT7	

[E128]	IGBT8 OT8	
[E137]	FAN STALL	
[E138]	TEMP_SENSING FAIL	
[E139]	Pre_Charging Fail	P7.95
[E140]	Line UV	
[E141]	Line OPEN	
[E142]	Line Detection Error	
[E143]	Line SW Fail	DI
[E144]	Line SW SHORT	
[E145]	(AFE) Line OV	P16.0
[E146]	(AFE) Line Over_Freq	
[E151]	U IGBT PDP [UT]	IGBT IGBT
[E152]	U IGBT PDP [UB]	IGBT IGBT
[E153]	V IGBT PDP [VT]	IGBT IGBT
[E154]	V IGBT PDP [VB]	IGBT IGBT

[E155]	W IGBT PDP [WT]	IGBT IGBT
[E156]	W IGBT PDP [WB]	IGBT IGBT
[E160]	SLVE FAULT	
[E161]	SLV_NOT_RDY	
[E162]	1 SLV1_CAN_ERR	1
[E163]	2 SLV2_CAN_ERR	2
[E164]	3 SLV3_CAN_ERR	3
[E165]	4 SLV4_CAN_ERR	4
[E166]	5 SLV5_CAN_ERR	5
[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
[E203]	DRIVE DISABLED	DP
[E210]	Panel Error	
[E220]	CRC MEMORY CRC ERR	
[E221]	PARAMETER ERROR	

10.3

		•	• DC15V
		•	• D05 • D05 •
		•	• D04 •

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11.


1 2 3 4

1 CMOS 2 3

11.1

11.2

	1. 2.	1. > 40 < 95% 2.
	1. 2. 3.	1. 2. 3. 4. 5. 6.
	1. 2. 3.	1. 2. 3.
	1. 2.	1. 2.
	1. 2.	1. 2.

11.3

	2	1 2
PCB		

11.4

5

5

(400-0077-570)

1 40

2 80%

3 24 /

11.5

1

2

5

HF680 LC

690 160 1935

1.07

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6

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