

GUIDE

HF680NLC

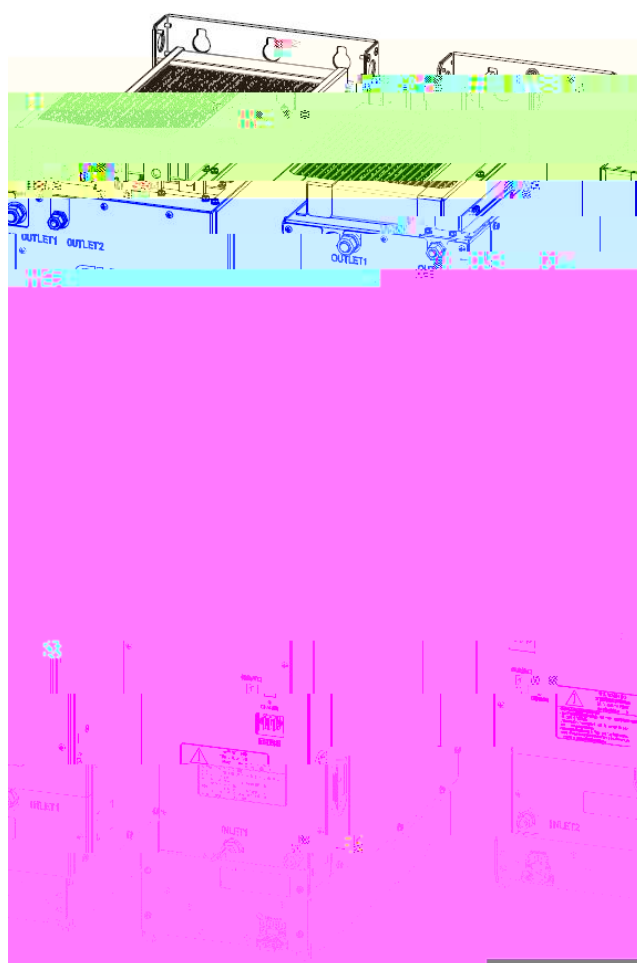
690V

160~1935kW

1.07

L

Wuhan GUIDE Technology Co.,Ltd



HF680NLC

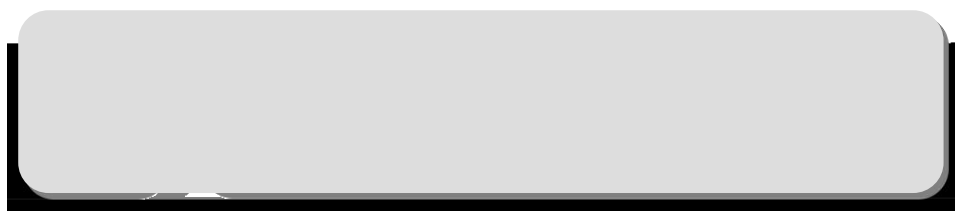
1.		1
1.1		1
1.2		5
1.3		5
2.		6
2.1		6
2.2		6
2.3		7
2.4		9
2.4.1		10
2.4.2		11
2.4.3		12
2.4.4		13
3.		14
3.1		14
3.2		14
3.3		18
3.4		20
3.5		21
3.6		21
4.		22
4.1		22
4.2		22
4.3		26
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4.5		32
4.6		32
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5.2		34
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8.2.1		P2	60
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8.2.19	1	P20	103
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9.5			136
9.6			137
9.7			140
9.8			142
9.9		V/F	144
9.10			147
9.11			151

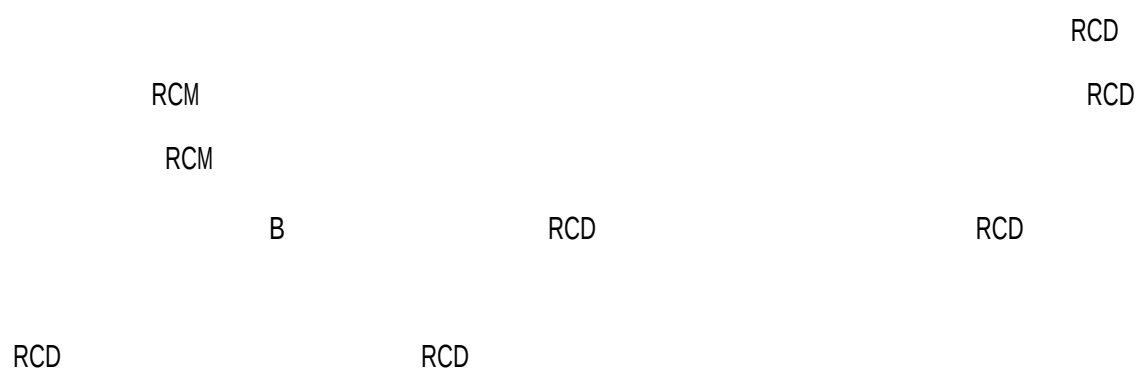
10.		152
10.1		152
10.2		153
10.3		156
11.		159
11.1		159
11.2		160
11.3		160
11.4		161
11.5		161

1.

1.1



1

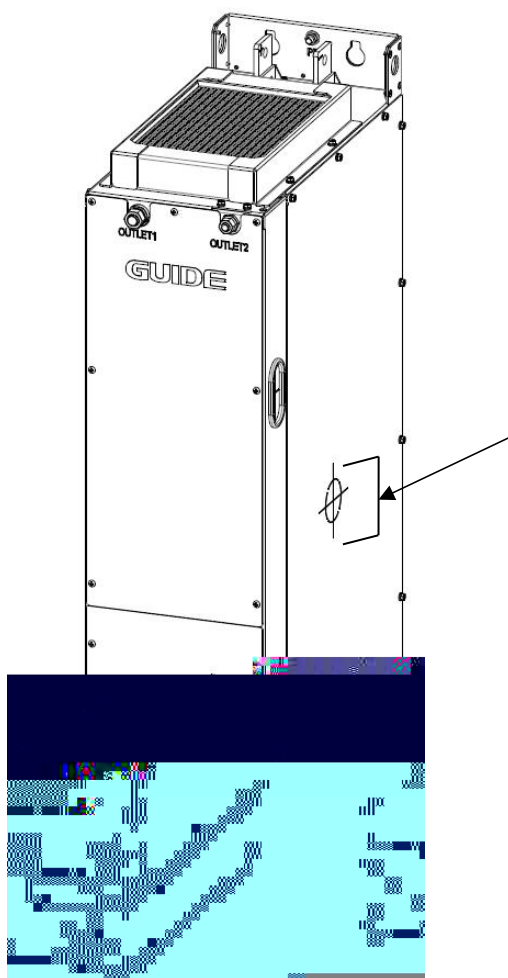


2

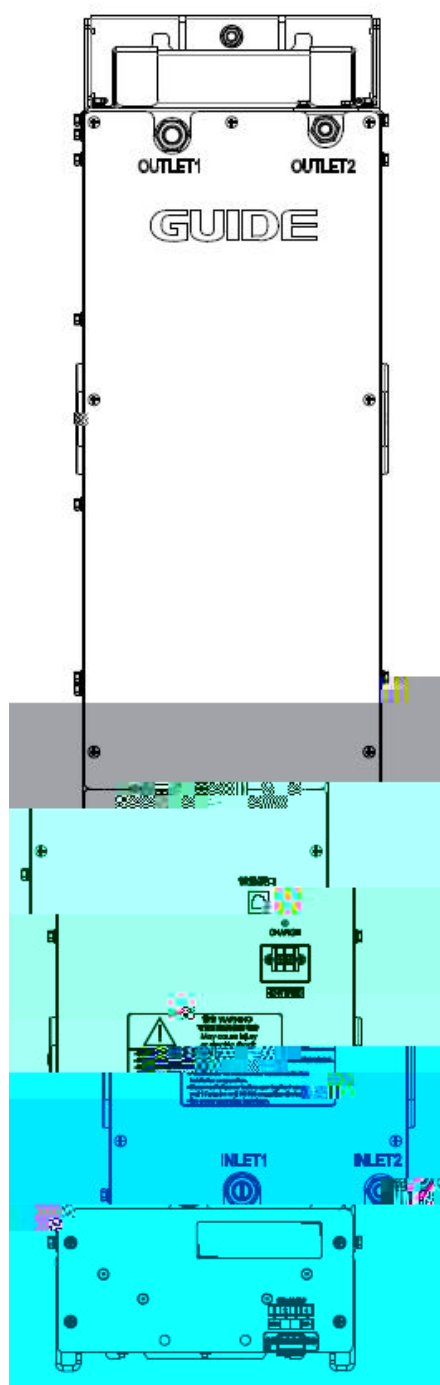
500V

3

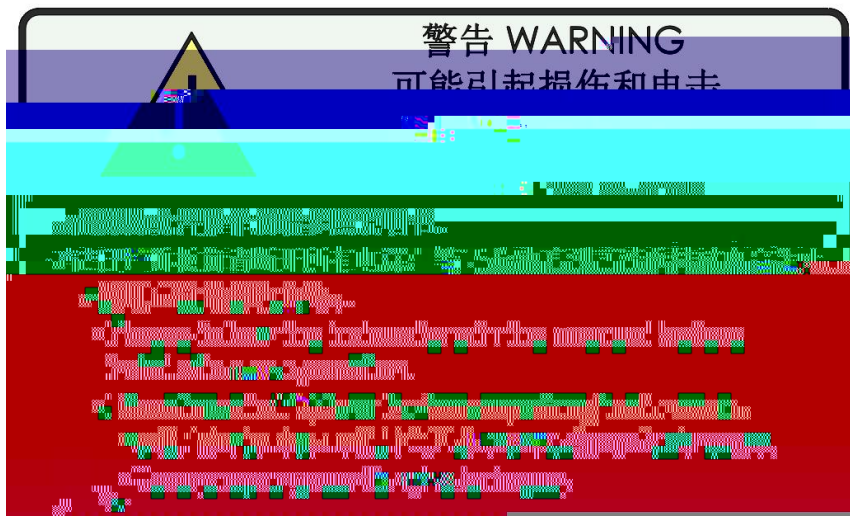
5MΩ



HF680NLC-560-6



HF61



1.2

(1)

(2)

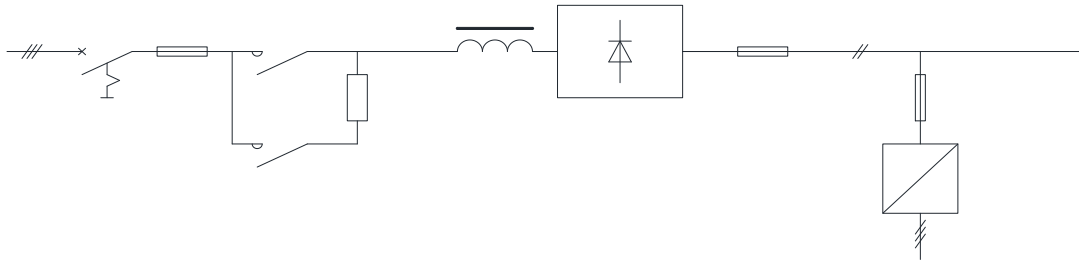
(3)

1.3

2.

2.1

HF680NLC



		GDHF-AKZY1	LCD	HF680NLC01M
	GDHF-AKZY1		HF680NLC03M	
			2.8*8.8 2	HF680NLC01M
2			HF680NLC03M	
	2.8*8.8 2	2		
		GDHF-KL4	4	HF680NLC01M
4	GDHF-KL4		HF680NLC03M	4
			1	HF680NLC01M
	GDHF-FB01			o q

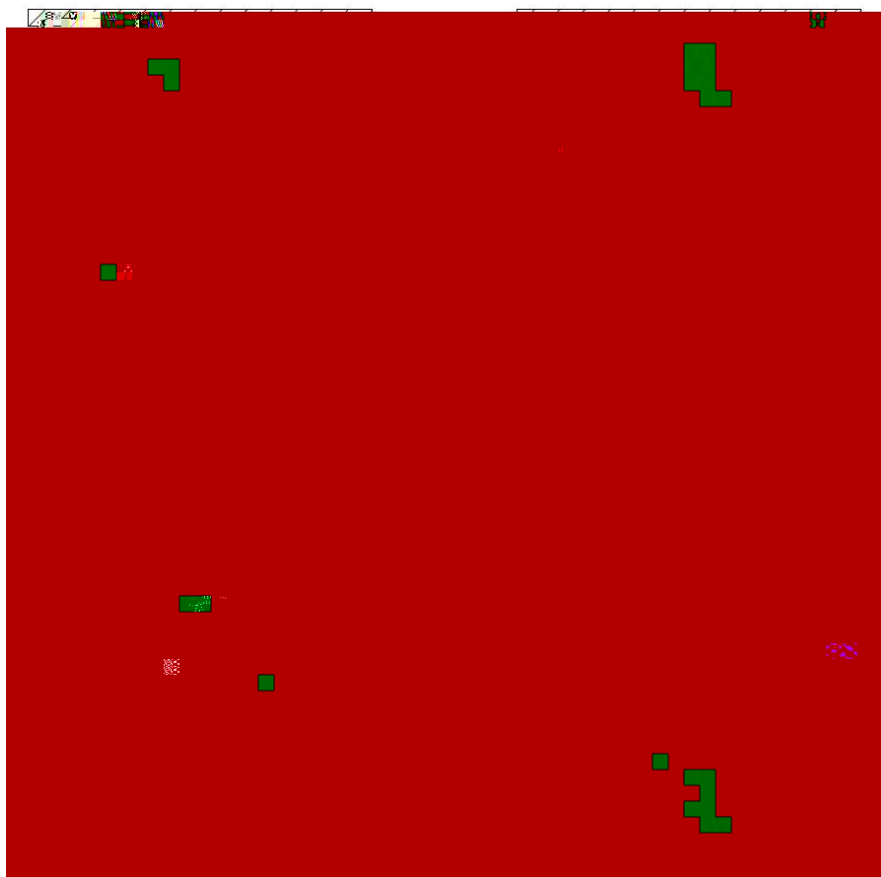
2.4

	
1.	/ " "
2.	/
3.	
-	R S T
-	U V W
-	+ -
4.	15
5.	
	
1.	
2.	
3.	40
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/s ² (13.2~100Hz)	1mm(5~13.2Hz) 7m/s ² (13.2~100Hz)	3.5mm(2~9Hz) 10m/s ² (9~200Hz) 15m/s ² (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	

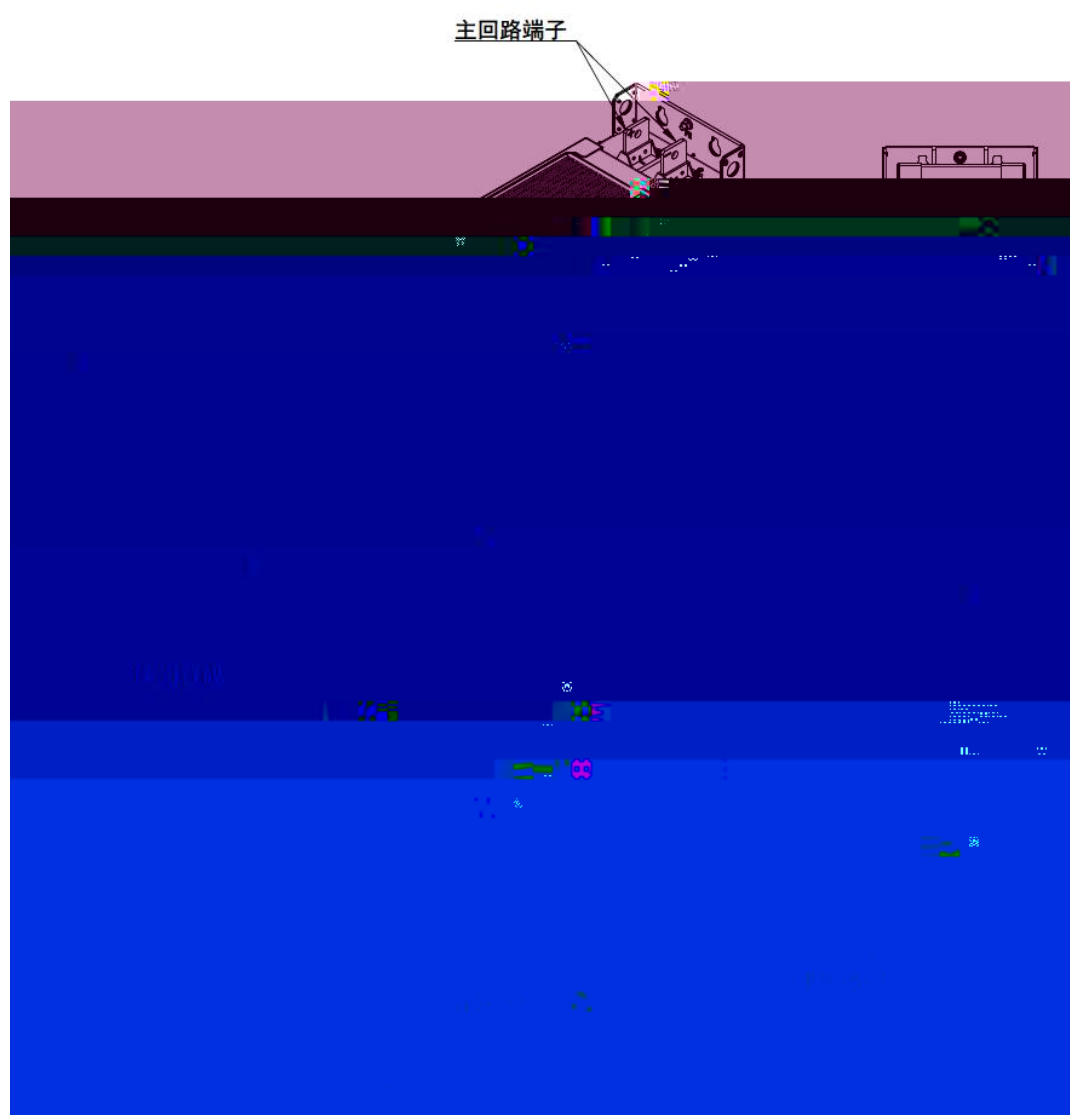
2.4.2



	$A \geq 250\text{mm}$

2.4.4

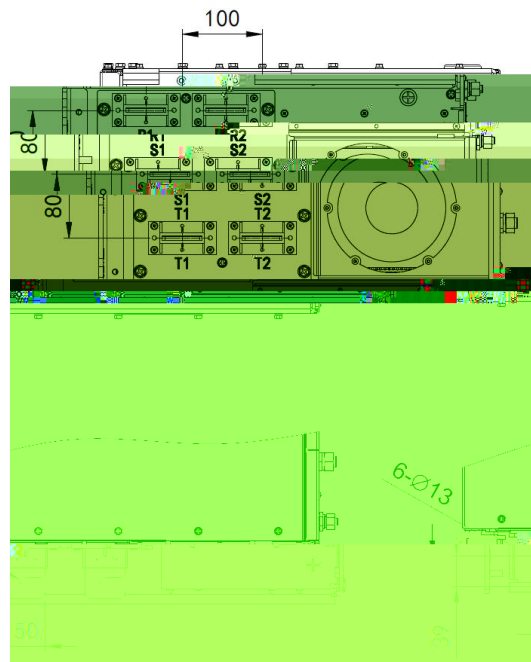
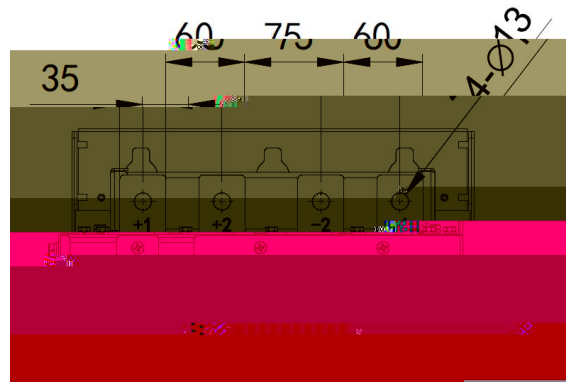
2 1
4 2
4 3



HF680NLC-560-6

1

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



	+10V-GND	10V	+10V 50mA 1k Ω ~5k Ω
	+24V-COM	24V	+24V 200mA
	PW		24V DI1-DI5 D01 PW 24V
	AI1-GND	1	DC -10V~10V 100k Ω
	AI2-GND	2	J1 -10VDC~10VDC/0mA~20mA 100k Ω 500 Ω
	DI1- PW	1	3.3k Ω 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	A01-GND	1	J2 0V~10V 0mA~20mA
	D01-PW	1	0V~24V 0mA~50mA
	D04A-D04C	1	250VAC 3A 30VDC 1A
	D04B-D04C	2	
	D05A-D05C	3	

	J2	A01	
	J1	AI2	

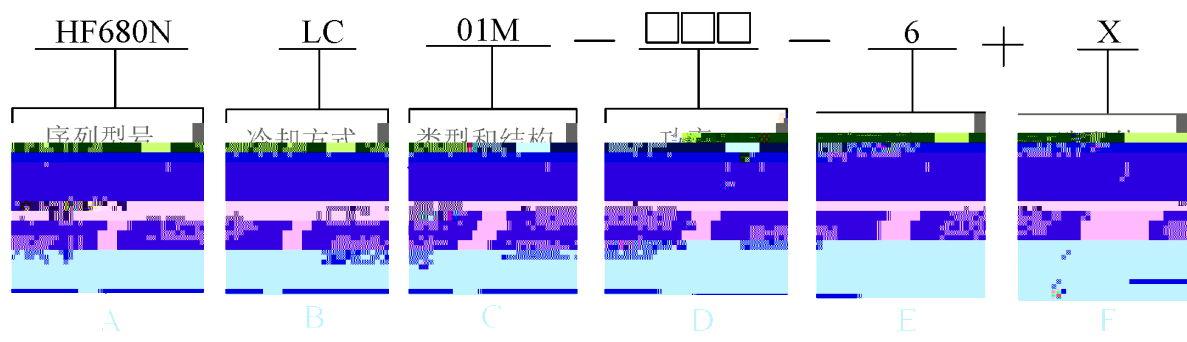
3

0V

NPN



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

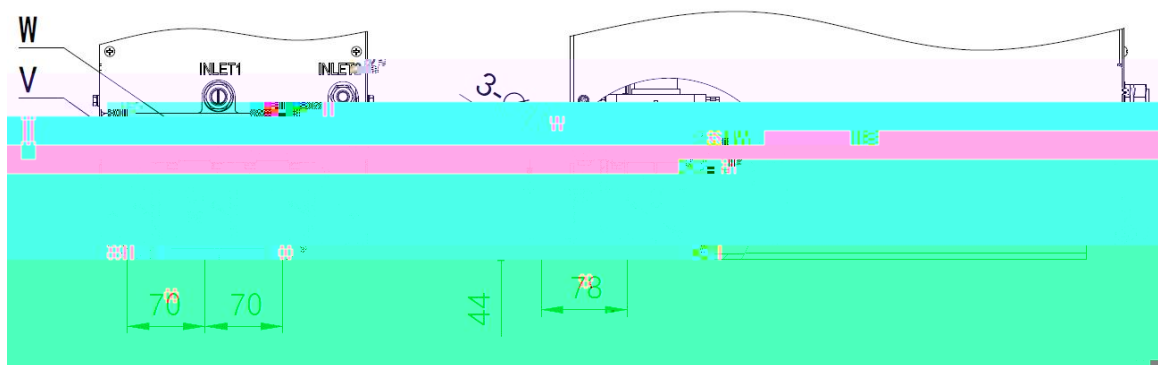
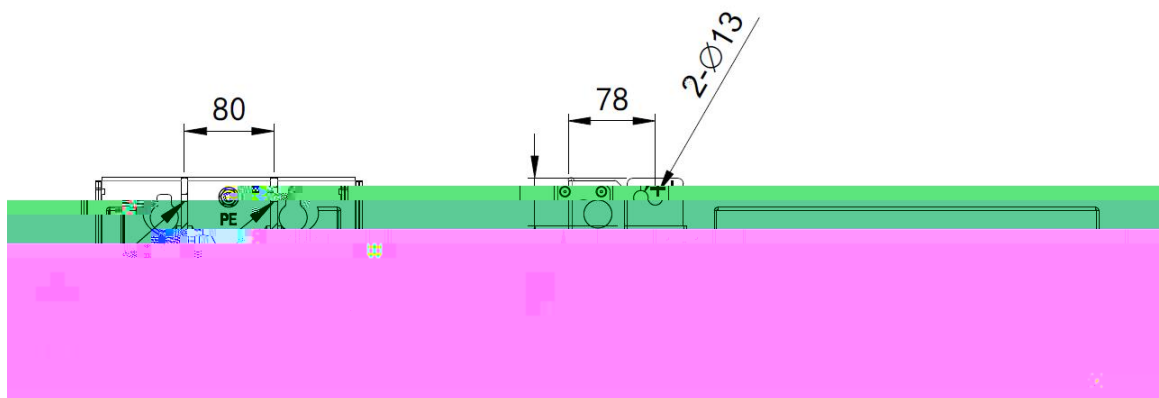
2

LCD

LCD

1

+	
-	
U V W	
PE	



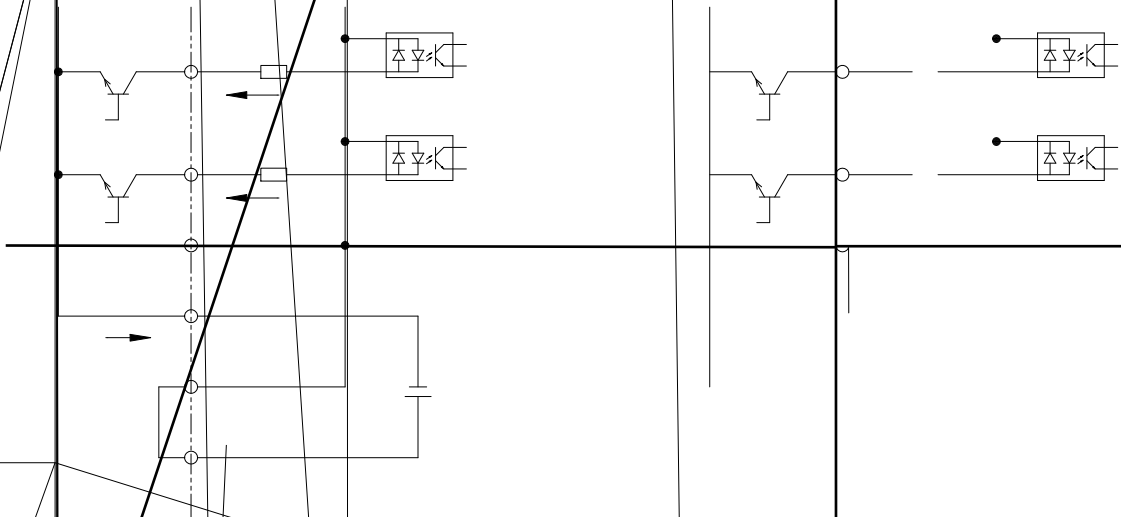
	+10V-GND	10V	+10V 50mA 1k Ω ~5k Ω
	+24V-COM	24V	+24V 200mA
	PW		24V DI1~DI5 D01 PW 24V
	AI1-GND	1	DC -10V~10V 100k Ω
	AI2-GND	2	J1 -10VDC~10VDC/0mA~20mA 100k Ω 500 Ω
	DI1- PW	1	3.3k Ω 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	A01-GND	1	J2 0V~10V 0mA~20mA
	D01-PW	1	0V~24V 0mA~50mA
	D04A-D04C	1	250VAC 3A COS =0.4 30VDC 1A
	D04B-D04C	2	
	D05A-D05C	3	250VAC 2A COS =0.4 30VDC 1A

3

0V

NPN

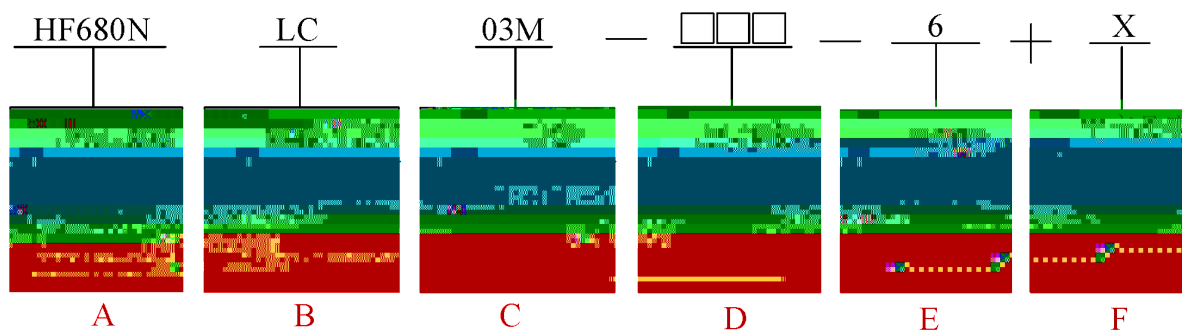
N P N



0V

И Ь И

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

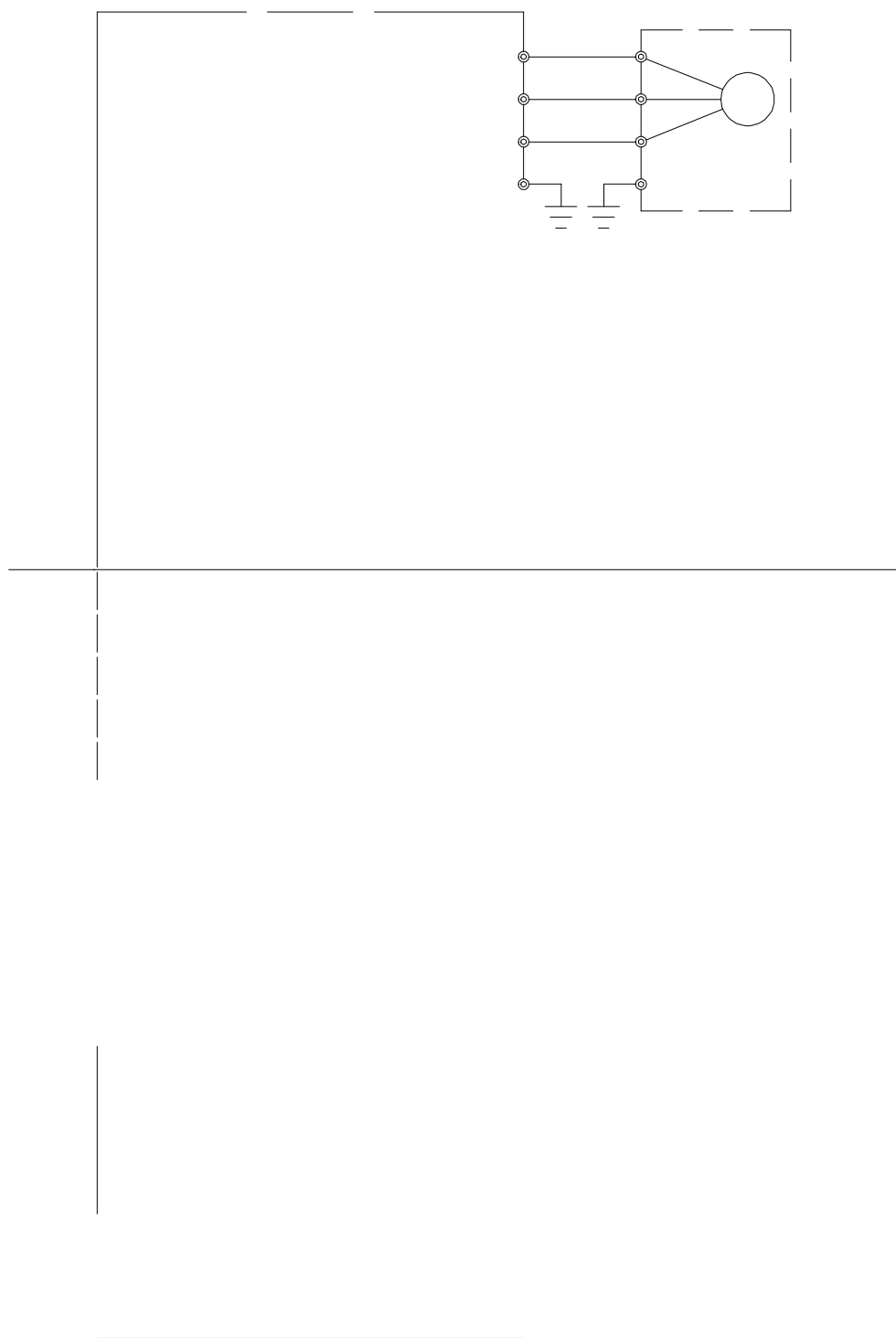
Profinet

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



4.5

800V 1150V

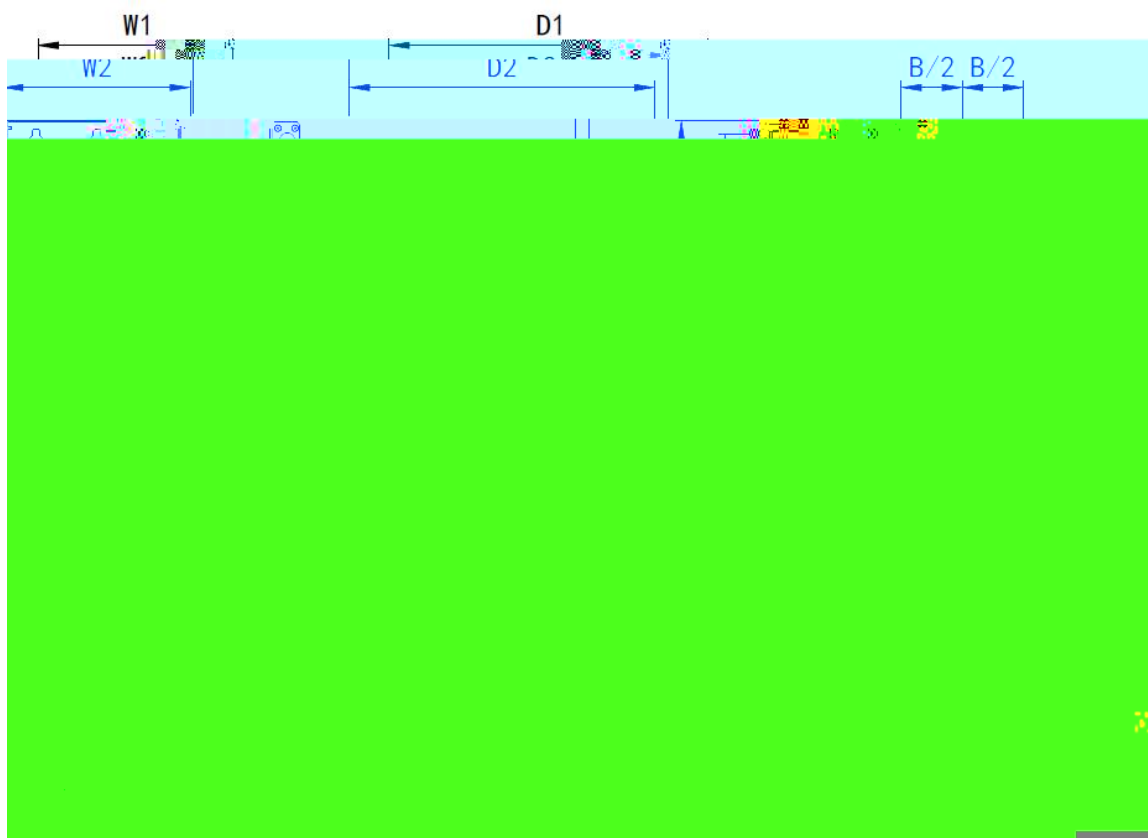
24V

(VC+

(c) M 8 • 0.9 • 1.0 • 9

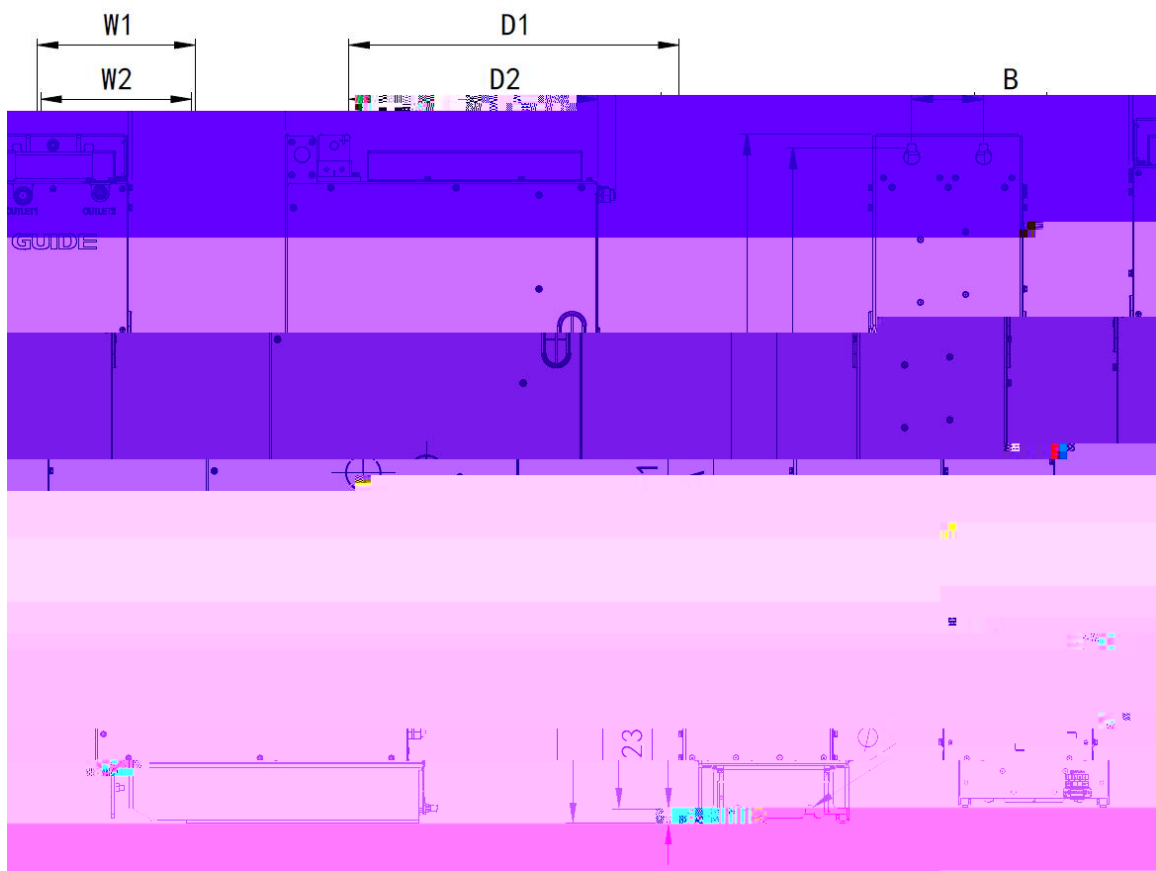
5.

5.1



	mm					mm			8.8	kg
	H1	W1	W2	D1	D2	A	B			
HF680NLC01M-1233-6	110 0	320	307	525	500	1064	200	6- φ 13	6-M12	260
HF680NLC01M-1935-6										

5.2



mm

mm

H1

8.8 kg

6.

6.1 LCD

HF680NLC

F1

LOCAL/REMOTE

F2

RUN

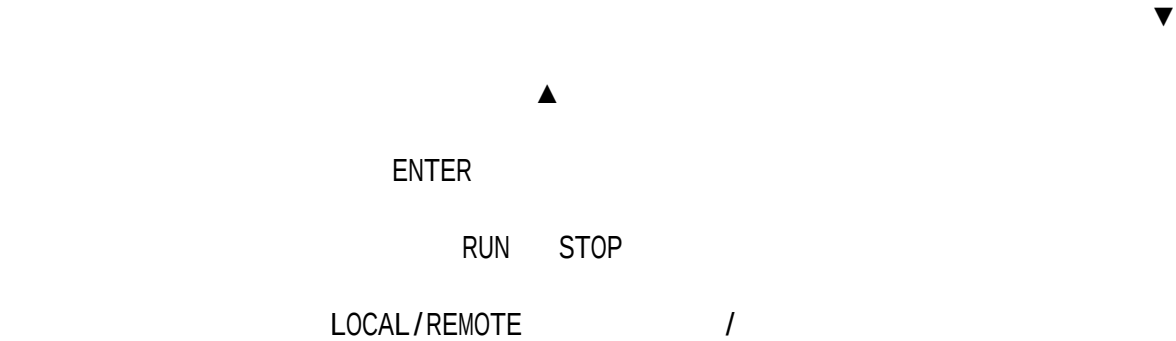
STOP

/RESET

ENTER



6.1.1.1 LCD



LCD



	" _ "
	:V
	A
	N N W E

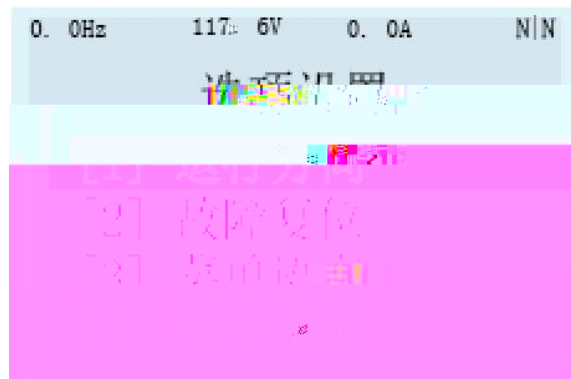
4
ENTER F1/F2

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



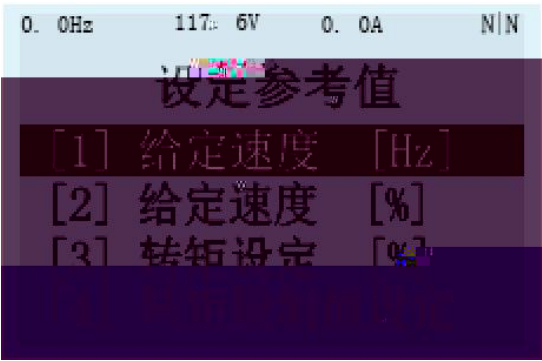
1	Choose Direction	
2	Reset Error	
3	Menu Language	
4	Monitor Setting	
5	LCD Contrast	
6	Time Setting	
7	Version	
8	OLD COM	

1 LCD



Parameter Setting

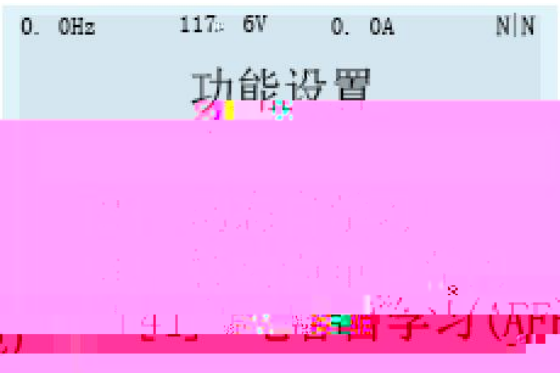
2 LCD



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

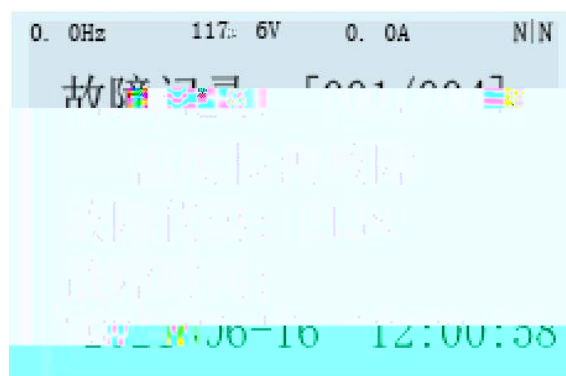
5



“ Enter ”

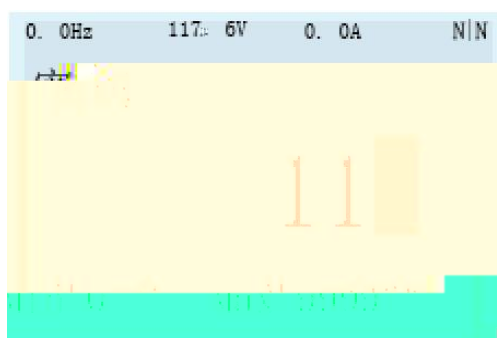
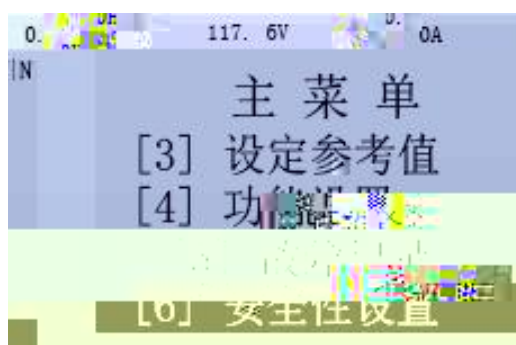


4 LCD



Fault Record

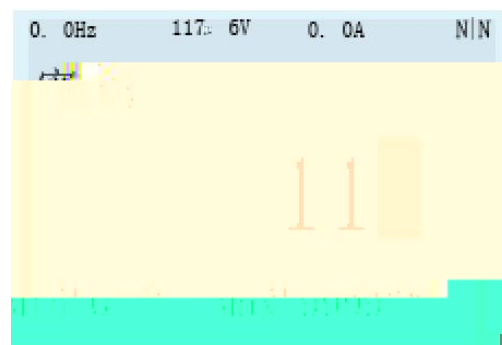
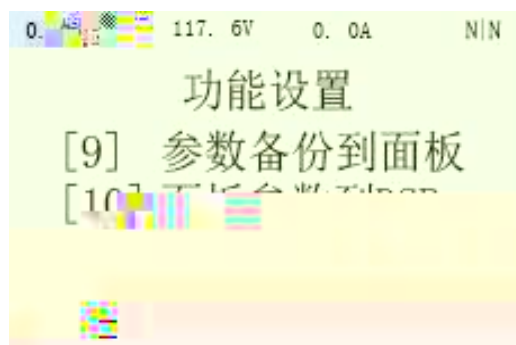
5 LCD



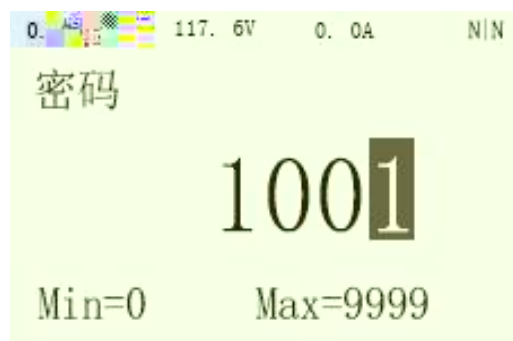
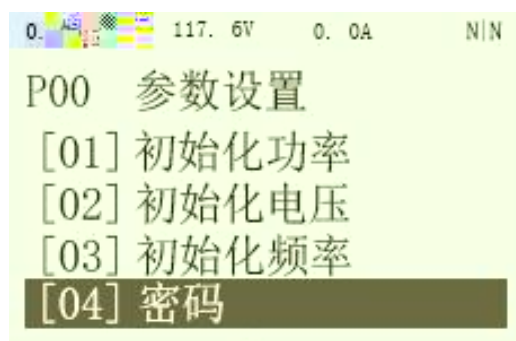
1. Access Permissions

“ ENTER ” “ ” “ ” “ [12]

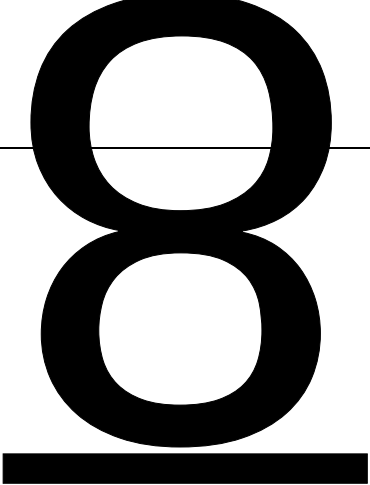
”



2. “ ” “ ENTER ”
- “ ENTER ” “ ”



3. “ ” “ P00 ” “ [04] ”
- “ ENTER ”



7.

7.1

7.1.1

DI1

DI2

DI4

D02

A¹/₄

D04

D0

D05

1

690V

220V

690V

P0.1 ò

P0.1 F9

F

!•
1\

.

“ D04A ” “ D04C ” È

“ D05A ” “ D05C ” È f

uA¹/₄

ex

D02 F

Đ

P4.3 D04 0

P16.0	690V	
P16.2		1233kW1233kW
P16.4		1233kW1143A
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

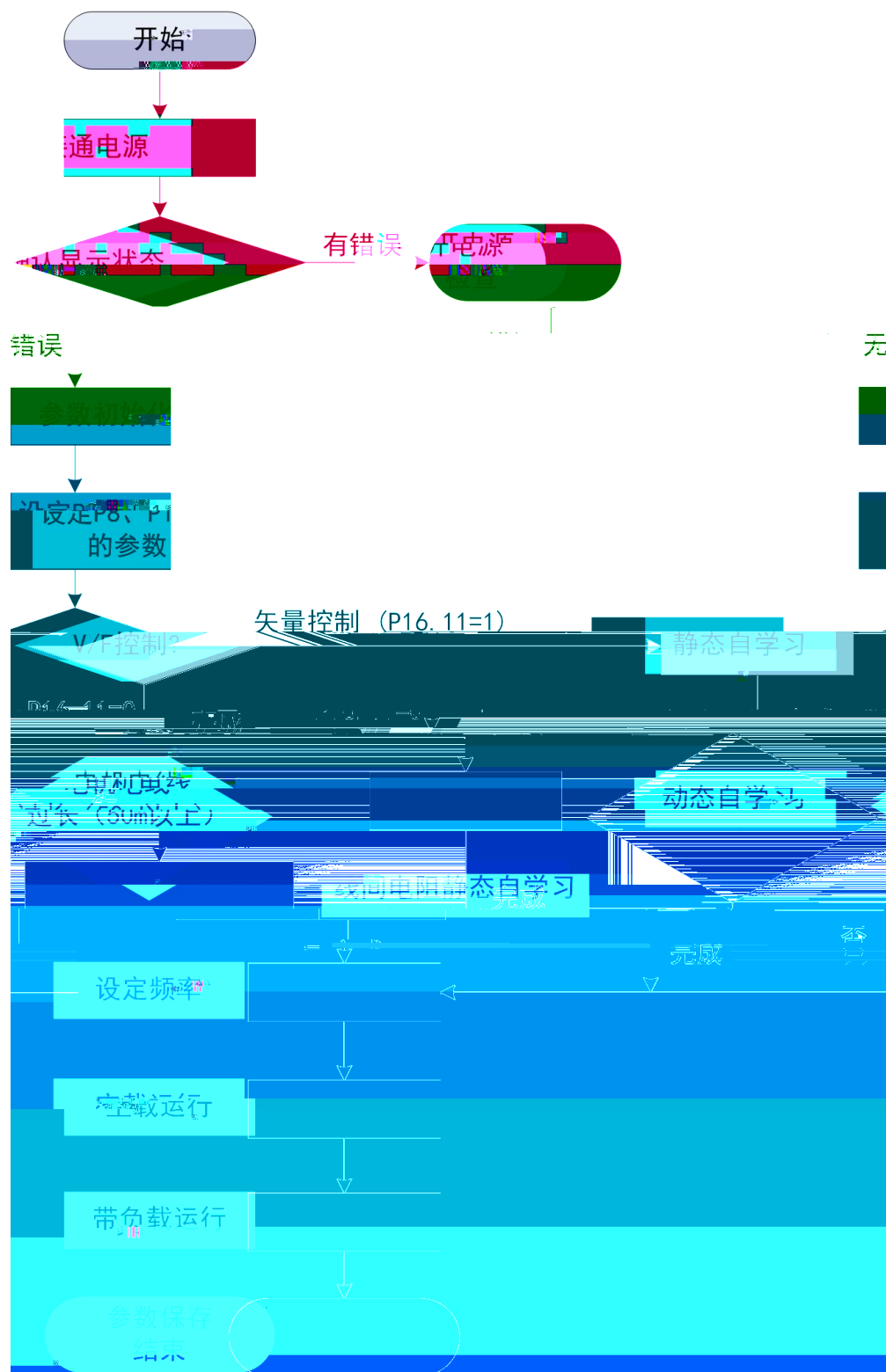
停止

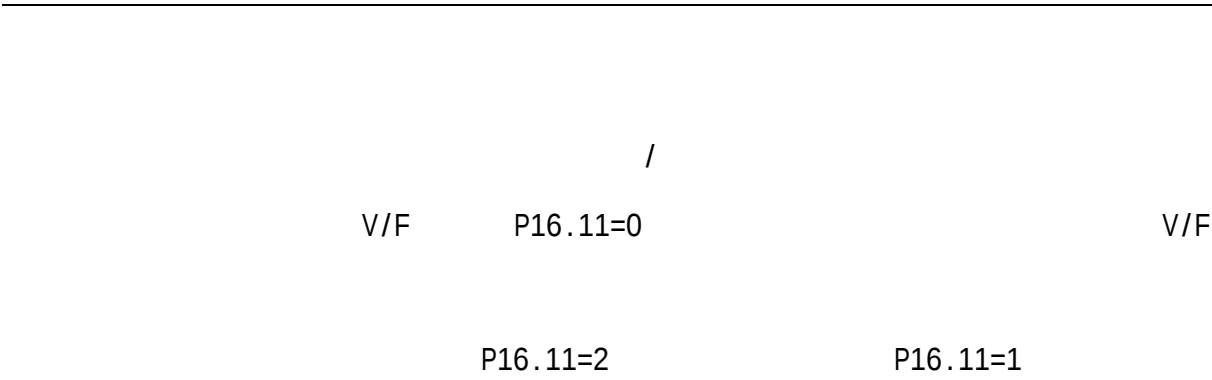
+ - + -

“ / ” “ ”

PLC

7.2





7.3

7.3.1

1			± 5V
2		U, V, W	
3			
4	PG	PG	

7.3.2

0. 0Hz	560. 5V	0A	N/N
电机速度[Hz] :		0 Hz	
给定频率[Hz] :		0 Hz	
母线电压 :		560 V	

0. 0Hz	300V	0A	W/E
--------	------	----	-----

7.3.3

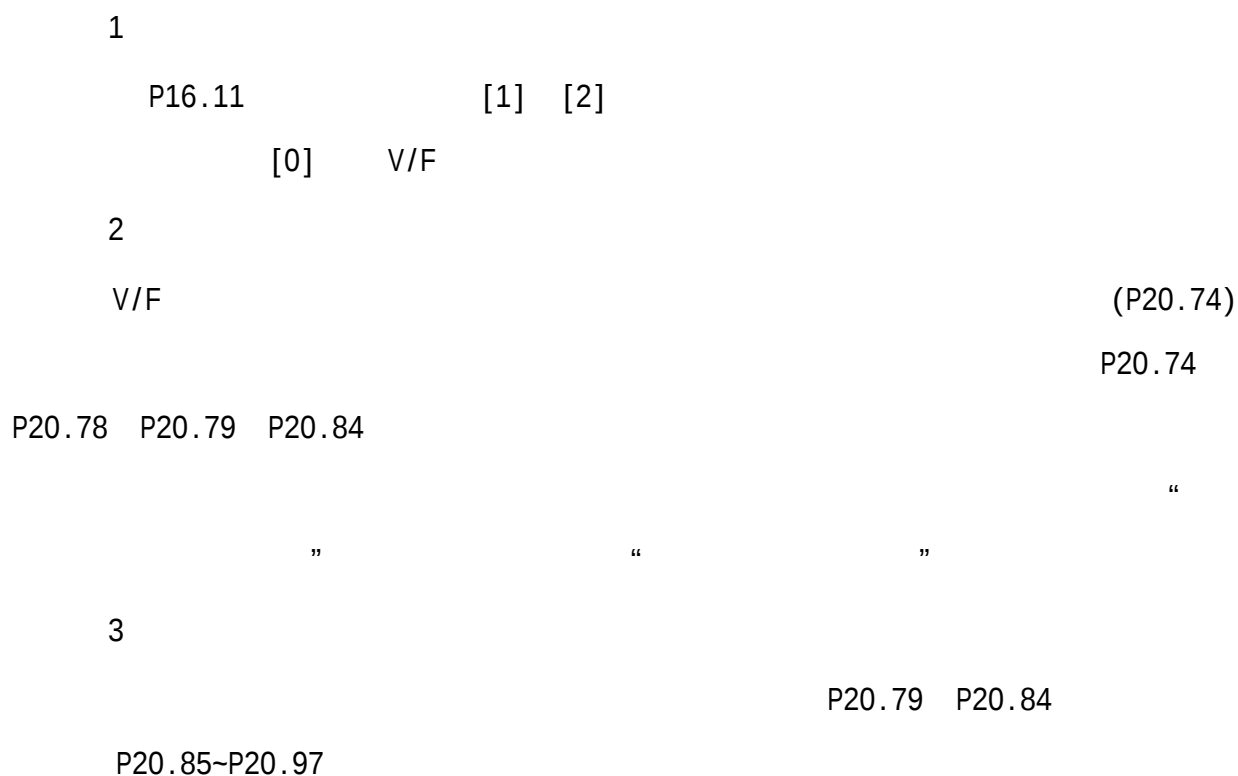
6

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]]MODBUS	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

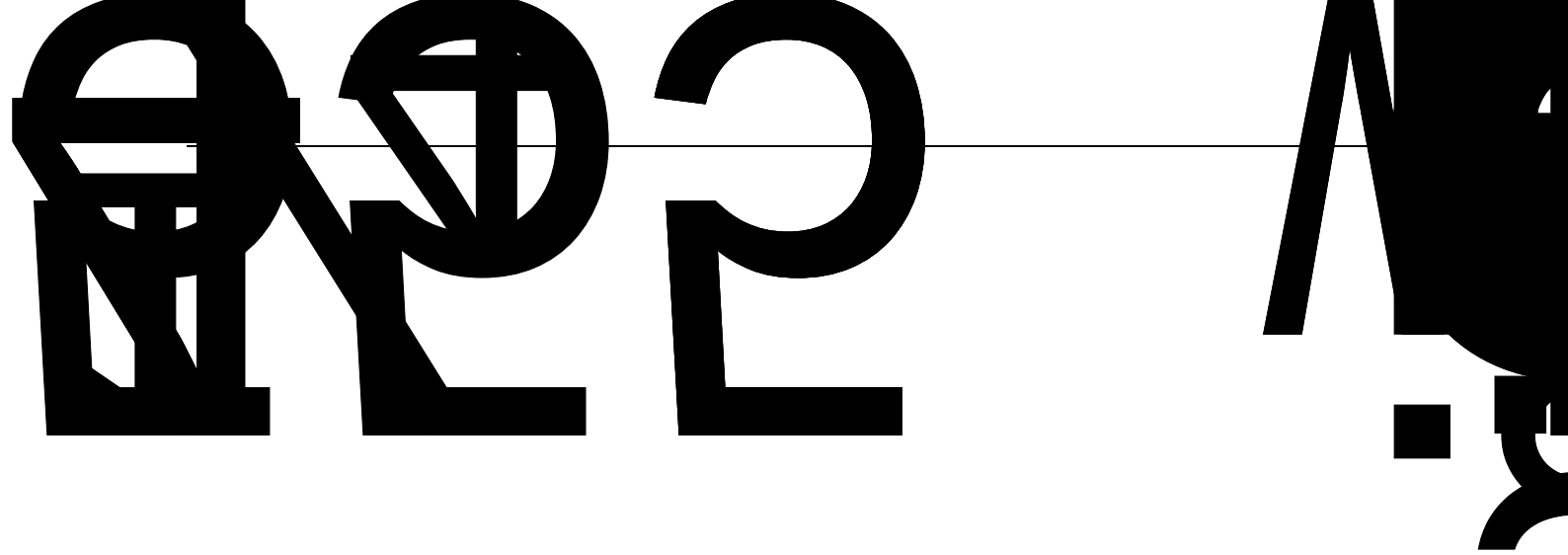


” “ “

P20.98

HF680NLC

www.gdetec.com



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

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

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	0	3	1
		[2]-10 +10V			
		[3]0 20mA			
		AI1			
P5.1	AI1		0.0	1000.0	25.0
			[ms]		[ms]
P5.2	AI1	AI1	-10.00	10.00	0.000
			[V]		[V]
P5.3	AI1	AI1	-20.00	20.00	0.000
			[mA]		[mA]
					9.4

P5.19 A12

P6.21	A02	A02 (P6.14 [13])	0.0 100.0 [%]	0.0 [%]	
P6.22	A02	A01	0.0 1000.0 [ms]	10.0 [ms]	

7-1

0



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]		0	1	1	
		[1]					
P7.60				0.10	3.00	0.30	
				[s]		[s]	
P7.69		[0]		0	1	0	9.6
		[1]					
P7.70				-25	100	0	9.6
				[V]		[V]	
P7.71	1	[0]	5	0	1	0	9.6
		[1]					
P7.73							

0

0

8.2.7 1 P8

	[0]		
	[1]		
P8.0	[2]DP	0 4	0
	[3]MODBUS		
	[4]		
P8.1			

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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

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

3

7

2

P9.34

P9.36

0.0 300.0

4.00

9.7

[s]

[s]

P9

3



9

no 4 0

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0.00 [a] w o

a

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8.2.9

3

P10

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	4.00	9.7
				[s]		[s]	
P10.38	3			0.0	300.0	240.0	9.7
				[%]		[%]	
P10.39	3	P10.36	P10.38	0.0	300.0	7.00	9.7
				[s]		[s]	
P10.40	4			0.0	300.0	300.0	9.7
				[%]		[%]	
P10.41	4	P10.38	P10.40	0.0	300.0	10.00	9.7
				[s]		[s]	
P10.42	5			0.0	300.0	300.0	9.7
				[%]		[%]	
P10.43	5	P10.40	P10.42	0.0	300.0	10.00	9.7
				[s]		[s]	
P10.44	6			0.0	300.0	300.0	9.7
				[%]		[%]	
P10.45	6	P10.42	P10.44	0.0	300.0	10.00	9.7
				[s]		[s]	
P10.46	7			0.0	300.0	300.0	9.7
				[%]		[%]	
P10.47	7	P10.44	P10.46	0.0	300.0	10.00	9.7
				[s]		[s]	
P10.48	8			0.0	300.0	300.0	9.7
				[%]		[%]	
P10.49	8	P10.46	P10.48	0.0	300.0	10.00	9.7
				[s]		[s]	
P10.54				0.0	300.0	0.0	
				[%]		[%]	
P10.55		[0]		0	1	0	
		[1]					
P10.56				0.00	300.00	3.00	
				[s]		[s]	
P10.57		[0]		0	1	1	
		[1]					
P10.;v							

8.2.10	4	P11				
		[0]				
		[1]				
P11.0		[2]DP	0	4	0	
		[3]MODBUS				
		[4]				
P11.1						
P11.2						
P11.3		[0]	0	1	0	9.7
		[1]				
P11.6			0.00	300.00	0.00	9.7
			[s]		[s]	
P11.7			0.00	300.00	0.00	9.7
			[s]		[s]	
		[0] I/O				
		[1]				1
		[2]				2
P11.10		[3]	0	6	0	
		[4]DP				
		[5]MODBUS				
		[6]				
P11.11						
		[0]				
P11.13		[1]PROFIBUS	0	3	0	9.7
		[2]MODBUS				
		[3]				
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	3/	
			[s]			

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]

0 1

1

9.8

[1]

[0] [%]

P12.1

[1] [Hz]

0 2

1

[2] [rpm]

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

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]	0	1	1	9.8
		[1]				
P13.1		[0] [%]				
		[1] [Hz]	0	2	1	
		[2] [rpm]				
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	0.00	9.8
				[s]	[s]	

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]	0	1	1	9.8
		[1]				
		[0] [%]				
P14.1		[1] [Hz]	0	2	1	
		[2] [rpm]				
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

P15.27	0.00	2.00	0.00	9.8
	[s]		[s]	
P15.28	0.00	2.00	0.07	9.8
	[s]		[s]	
P15.29	0.00	2.00	0.07	9.8
	[s]		[s]	
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	0.00	9.8
	[s]		[s]	
P15.35	0.00	2.00	0.00	9.8
	[s]		[s]	
P15.36	0.00	2.00		

8.2.15	1	V/F	P16
--------	---	-----	-----

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

2 W\

!"

P16.47	@			0	300	0
		[0]				
P16.48		[1]PID	1	0	3	0
		[2]PID	2			
		[3]				
P16.49	@			0	300	0
P16.50				0.00	300.00	
					[s]	

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	0.00	9.9
			[s]		[s]	
P17.23		V/F	0.00	300.00	0.00	
			[Hz]		[Hz]	
P17.24		V/F	0.00	300.00	50.00	
			[Hz]		[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					

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 [%]	

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	0.00 100.00 [Hz]	[Hz]	
P18.25			0.0 20.0 [%]	[%]	
P18.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	9.9
P18.27			0.0 100.0 [%]	100.0 [%]	9.9
P18.30			0.0 100.0 [%]	0.0 [%]	9.9
P18.33	V/F	V/F		2	9.9
P18.34	V/F 1		0.0 100.0 [Hz]	5.0 [Hz]	
P18.35	V/F 1		0.0 25.0 [%]	11.5 [%]	
P18.36	V/F 2		0.0 100.0 [Hz]	50.0 [Hz]	
P18.37	V/F 2		0.0 25.0 [%]	100.0 [%]	
P18.38	V/F 3		0.0 100.0 [Hz]	50.0 [Hz]	
P18.39	V/F 3		0.0 25.0 [%]	100.0 [%]	
P18.40	V/F 4		0.0 100.0 [Hz]	50.0 [Hz]	
P18.41	V/F 4		0.0 25.0 [%]	100.0 [%]	
P18.42	V/F 5		0.0 100.0 [Hz]	50.0 [Hz]	
P18.43	V/F 5		0.0 25.0 [%]	100.0 [%]	
P18.44	V/F 6		0.0 100.0 [Hz]	50.0 [Hz]	
P18.45	V/F 6		0.0 25.0 [%]	100.0 [%]	
P18.46	V/F @		0 100	0	
P18.47	@		0 100	0	

8.2.18 4 V/F P19

P19.0			560 760	690	
			[V]	[V]	
P19.2			0.0 3000.0		
			[kW]	[kW]	
P19.3			0 700	690	
			[V]	[V]	
P19.4			0.0 3000.0		
			[A]	[A]	
P19.5			0.0 300.0	50.0	
			[Hz]	[Hz]	
P19.6	0		0 6000	1465	
			[rpm]	[rpm]	
P19.7			2 12	4	9.9
			[pole]	[pole]	
P19.9			0 7200	1500	9.9
			[rpm]	[rpm]	
			[0] V/F		
			[1] 16		
P19.11			[2]	0 4	0
			[3]		[L]
			[4]		
P19.12	1.00	10.00	3.00		9.9
			[kHz]	[kHz]	
			[0] V/F		
P19.14 V/F			[1] V/F	0 3	0 9.9
			[2]		
P19.15			[0]	0 1	0 9.9
			[1]		
P19.16					

		[0]				
P19.48		[1]PID 1		0 3	0	
		[2]PID 2				
		[3]				
P19.49	@			0 300	0	
P19.50				0.00 300.00	0.00	9.9
				[s]	[s]	
P19.51				0.0 150.0	70.0	9.9
				[%]	[%]	
P19.52				0.00 5.00	0.00	9.9
				[Hz]	[Hz]	
P19.54				0.00 300.00	0.00	9.9
				[s]	[s]	
P19.55				0.0 150.0	75.0	9.9
				[%]	[%]	
P19.56				0.00 5.00	0.00	9.9
				[Hz]	[Hz]	
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
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P20.0

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

	[0]	P20.31		
	P20.32			
P20.30	[1] 1	0 3	0	
	[2] 2			
	[3]			
P20.31		0.0 100.0	5.0	
		[%]	[%]	
P20.32		0.0 100.0	5.0	
		[%]	[%]	
P20.34	[0]	0 1	0	9.10
	[1]			
P20.35		0.0 100.0	0.0	
		[s]	[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]	0 1	1	
	[1]			
P20.43		25 1000	75	
		[ms]	[ms]	
P20.44		25 1000	250	
		[ms]	[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					

P20.74				0.00	650.00	0.00			
				[mOhm]		[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	0.00			
				[mOhm]		[mOhm]			
P20.79				0.00	65.50	0.000			
				[mH]		[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	0.00			
				[mOhm]		[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			
				[%]		[%]			

%

%

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

8.2.20 2 P21

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

P21.10		0	300	0
P21.11		0	1000	0
			[ms]	[ms]
P21.12		0.0	2000.0	100.0
			[%]	[%]
				9.10
P21.13		20.0	500.0	100.0
			[ms]	[ms]
				9.10
P21.14	1	0	60000	1024
P21.15	[0]	0	1	0
	[1]			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]	0	1	0
	[1]			
P21.21	[0]	0	1	0
	[1]			
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
	[0]			
	P21.16 P21.17			
P21.28	[1]	0	3	0
	[2]			
	[3]DP			

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 [%]	

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

8.2.21 3 P22



P

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	DR00P	0 DR00P	0.0 100.0 [%]	0.0 [%]	9.10
P22.61	DR00P	DR00P	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	

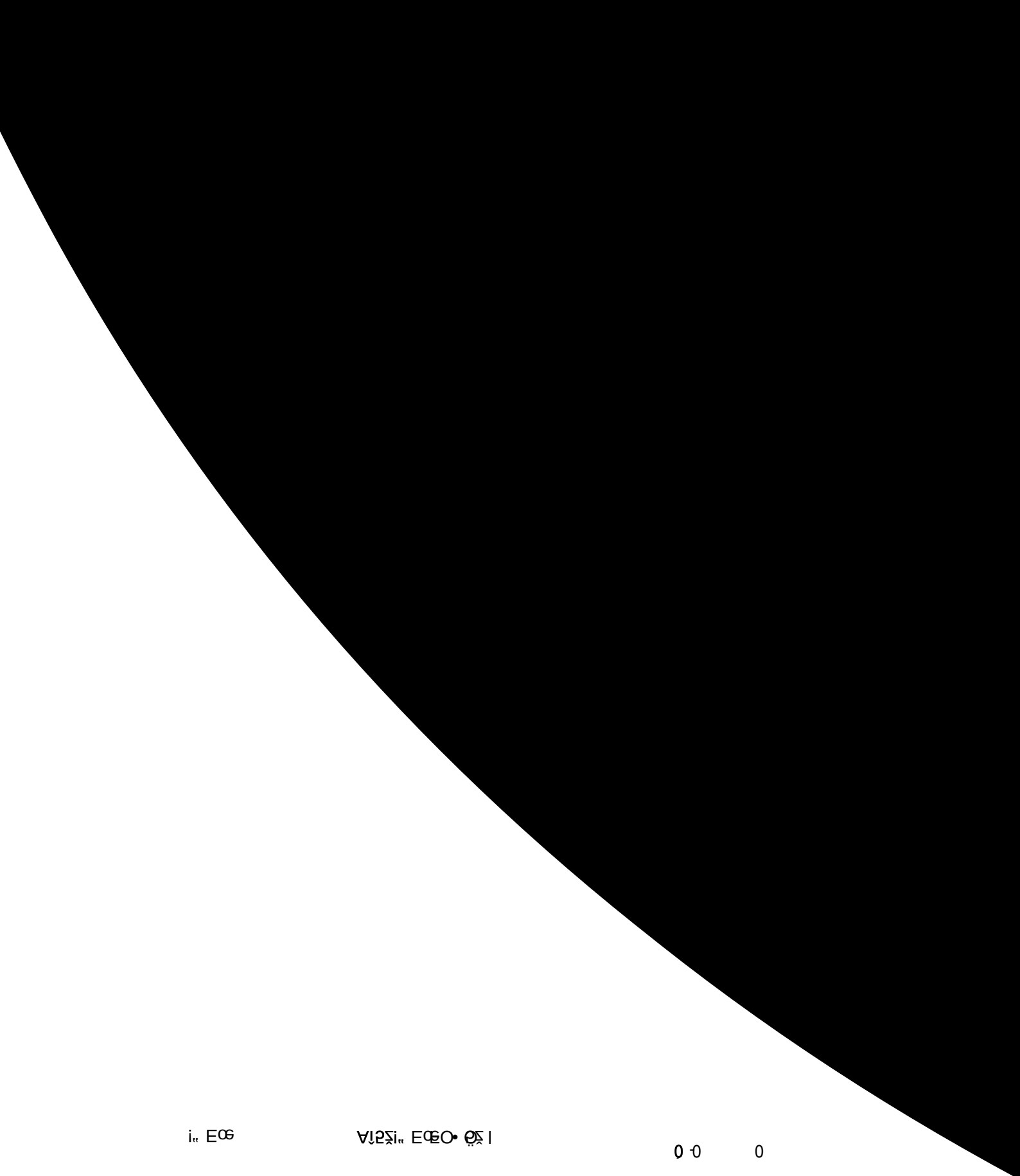
P22.74			0.00 650.00 [mOhm]	0.00 [mOhm]	
P22.75			0.70 1.00	0.90	
P22.76	1	1	90.0 110.0 [%]	100.0 [%]	
P22.77	2	2	90.0 110.0 [%]	100.0 [%]	
P22.78			0.00 650.00 [mOhm]	0.00 [mOhm]	
P22.79			0.00 65.50 [mH]	0.000 [mH]	
P22.80	1	1	0.800 1.350	1.140	
P22.81	2	2	0.800 1.350	0.940	
P22.82	3	3	0.800 1.350	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

()



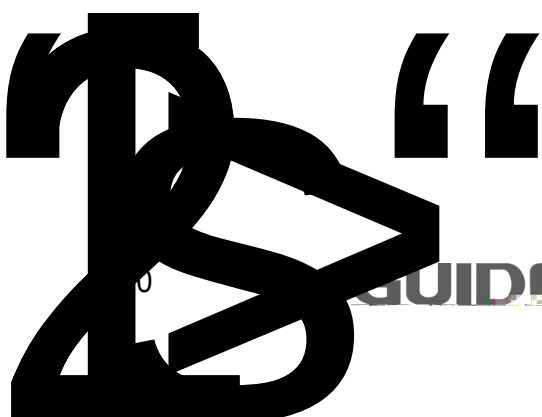
P23.10	0	300	0
P23.11	0	1000	0
		[ms]	[ms]
P23.12	0.0	2000.0	- 0.1
		[%]	



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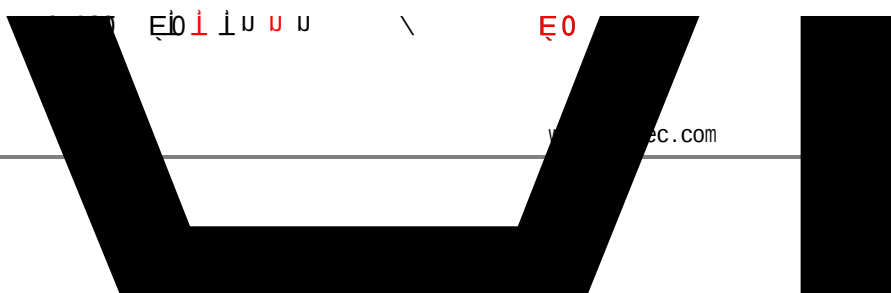
0 0 0



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P23.74			0.00	650.00	0.00
			[mOhm]		[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	650.00	0.00
			[mOhm]		[mOhm]
P23.79			0.00	65.50	0.000
			[mH]		[mH]
P23.80					

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

		[0] × 1		
		[1] × 10		
P33.18	[W2]	[2] × 100	0 4	0
		[3] × 1000		
		[4] × 10000		
P33.19	[W3]	7-2	0 37	0
		[0] × 1		
		[1] × 10		
P33.20	[W3]	[2] × 100	0 4	0
		[3] × 1000		
		[4] × 10000		
P33.21	[W4]	7-2	0 37	1
		[0] × 1		
		[1] × 10		
P33.22	[W4]	[2] × 100	0 4	0
		[3] × 1000		
		[4] × 10000		
P33.23	[W5]	7-2	0 37	18
		[0] × 1		
		[1] × 10		
P33.24	[W5]	[2] × 100	0 4	2
		[3] × 1000		
		[4] × 10000		
P33.25	[W6]	7-2	0 37	21
		[0] × 1		
		[1] × 10		
P33.26	[W6]	[2] × 100	0 4	1
		[3] × 1000		
		[4] × 10000		
P33.27	[W7]	7-2	0 37	22
		[0] × 1		
		[1] × 10		
P33.28	[W7]	[2] × 100	0 4	1
		[3] × 1000		
		[4] × 10000		

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

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

P33.54	[W4]	$[0] \times 1$ $[1] \times 10$ $[2] \times 100$ $[3] \times 1000$ $[4] \times 10000$ $[5] [\%] \times 1$ $[6] [\%] \times 10$ $[7] [\%] \times 100$	0 7	0	
P33.55	[W5]	7-3	0 48	19	
P33.56	[W5]	$[0] \times 1$ $[1] \times 10$ $[2] \times 100$ $[3] \times 1000$ $[4] \times 10000$ $[5] [\%] \times 1$ $[6] [\%] \times 10$ $[7] [\%] \times 100$	0 7	2	
P33.57	[W6]	7-3	0 48	26	
P33.58	[W6]	$[0] \times 1$ $[1] \times 10$ $[2] \times 100$ $[3] \times 1000$ $[4] \times 10000$ $[5] [\%] \times 1$ $[6] [\%] \times 10$ $[7] [\%] \times 100$	0 7	6	
P33.59	[W7]	7-3	0 48	30	
P33.60	[W7]	$[0] \times 1$ $[1] \times 10$ $[2] \times 100$ $[3] \times 1000$ $[4] \times 10000$ $[5] [\%] \times 1$ $[6] [\%] \times 10$ $[7] [\%] \times 100$	0 7	1	
P33.61	[W8]	7-3	0 48	14	

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

7-2

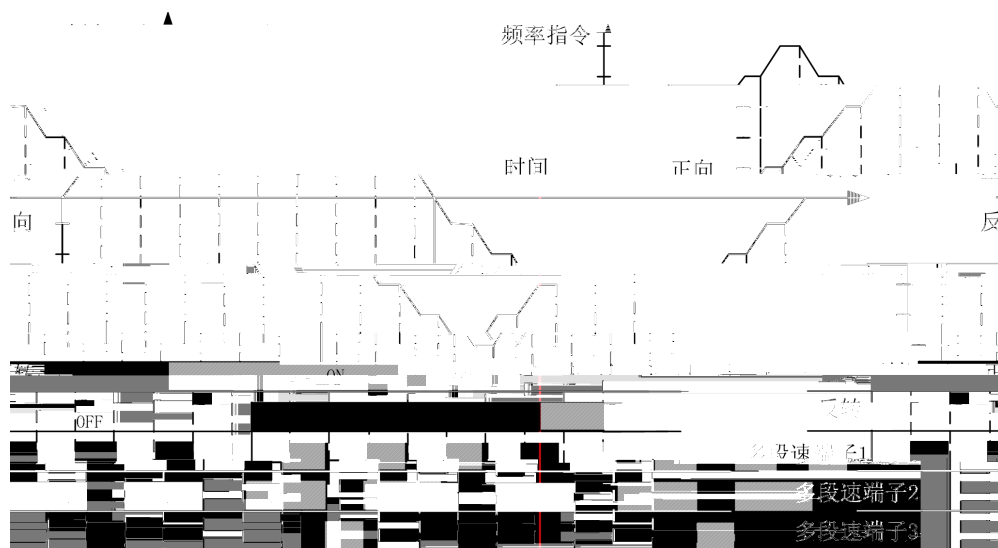
0	
1	0
2	1
3	2
4	3
5	4
6	[32]
7	[32]
8	32_MSW
9	32_LSW
10	
11	
12	0 @32bit
13	1 @32bit
14	2 @32bit
15	3 @32bit
16	4 @32bit
17	5 @32bit
18	[Hz]
19	[rpm]
20	[%]
21	[%]
22	[%]
23	[Hz]
24	
25	
26	1[%]
27	2[%]
28	
29	
30 37	SET_W12 19

7-3

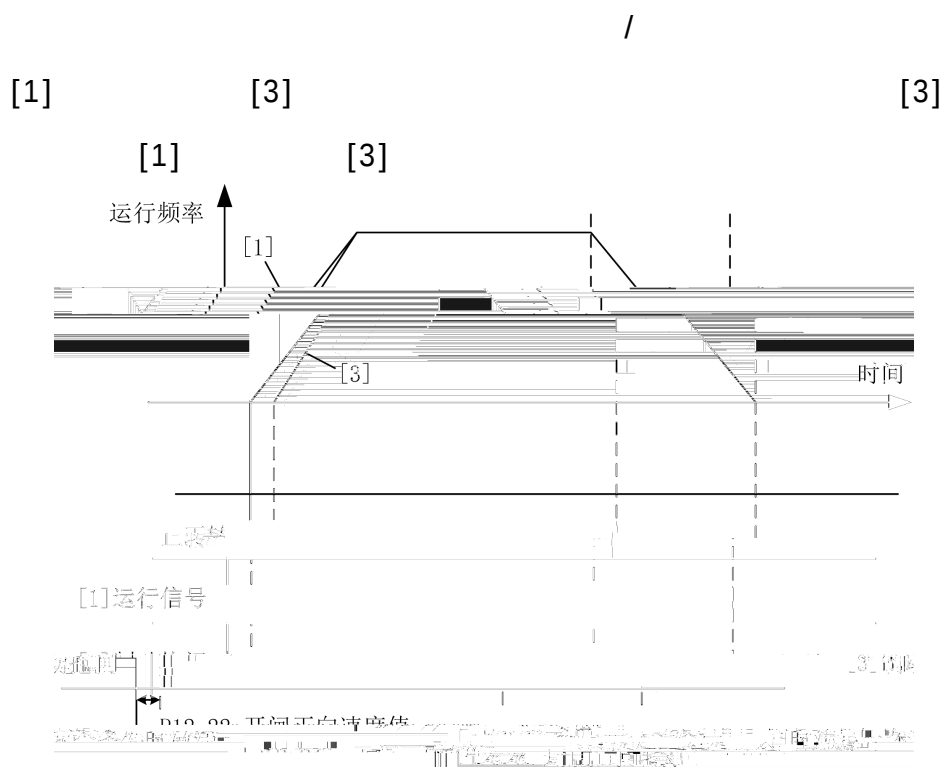
0	
1	0
2	1
3	2
4	3
5	4
6	5
7	0 @32bit
8	1 @32bit
9	2 @32bit
10	3 @32bit
11	4 @32bit
12	5 @32bit
13	[32]
14	[32]
15	32bit_MSW
16	32bit_LSW
17	
18	
19	
20	[rpm]
21	[rpm]
22	
23	
24	
25	
26	
27	A
28	B

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

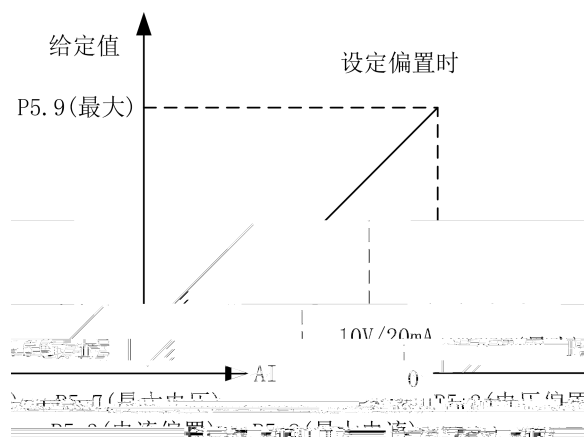
2 [1]
4 16 (8421)
(FORWARD) (REVERSE) P12.2(1)



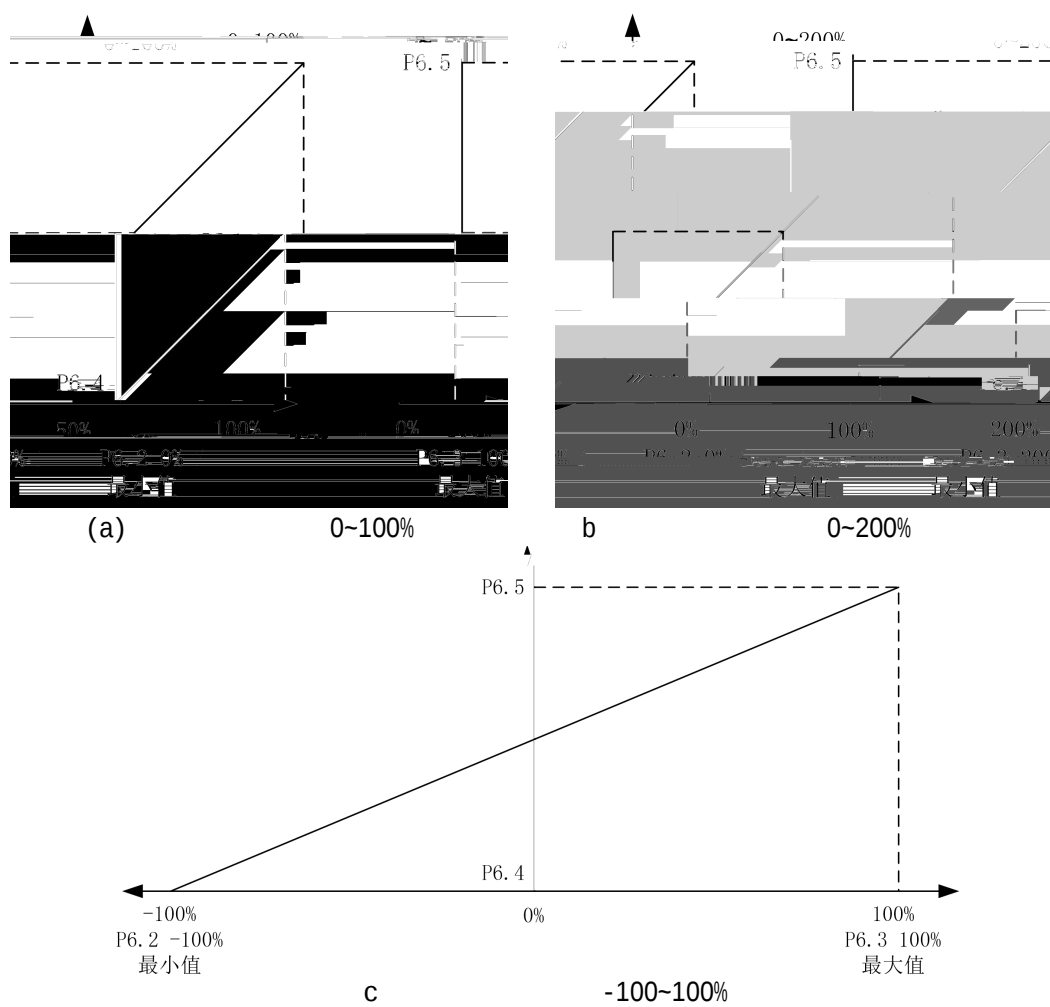
9.3



9.4



9.5



b

23

P16.11=1

P7.23

P7.23

T

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

"

b13

"

1

m

9.7

1

P8.3

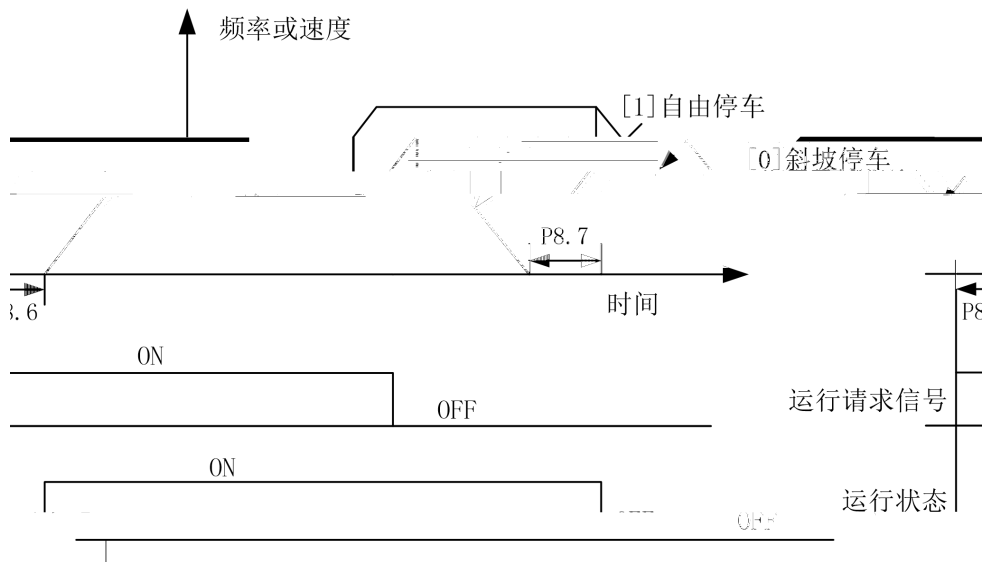
[0]

[1]

P8.6

P8.6

P8.7



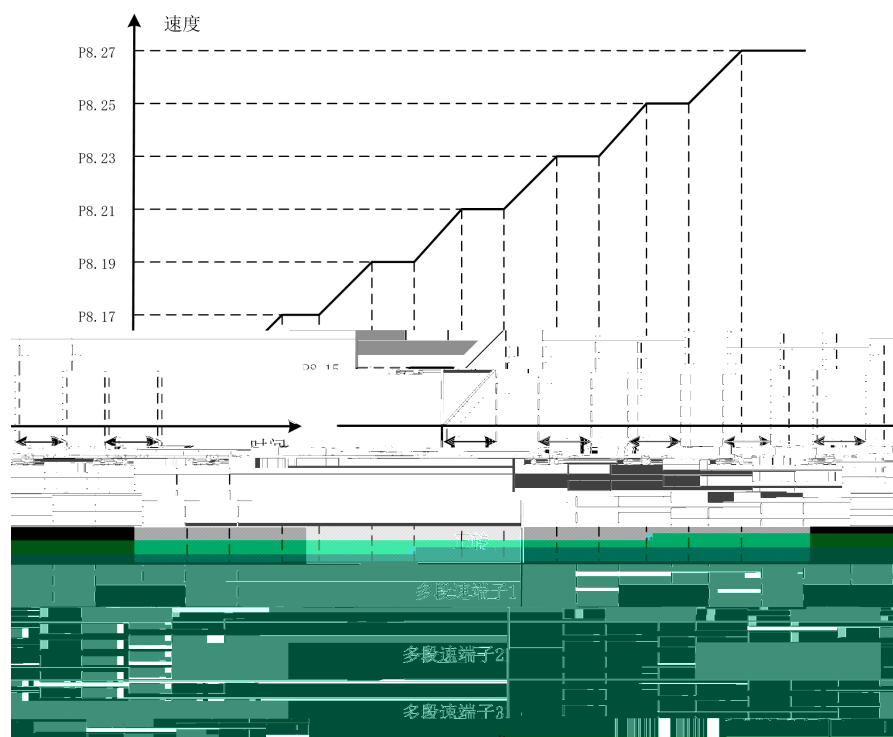
2

P8.14

P8.14

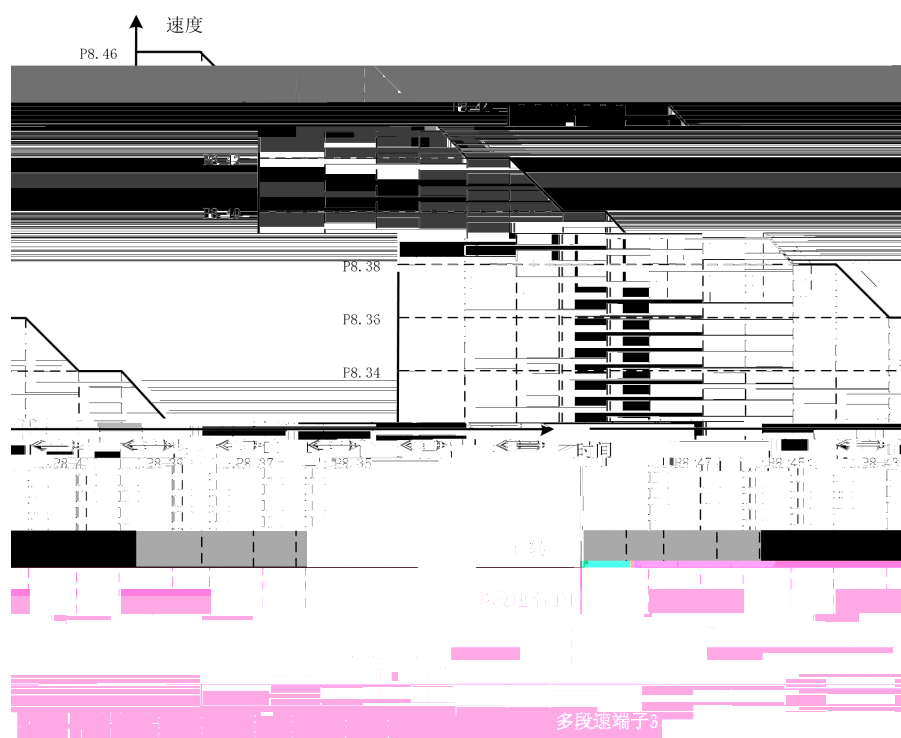
P8.33

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

2

P12.22 P12.37

[3]

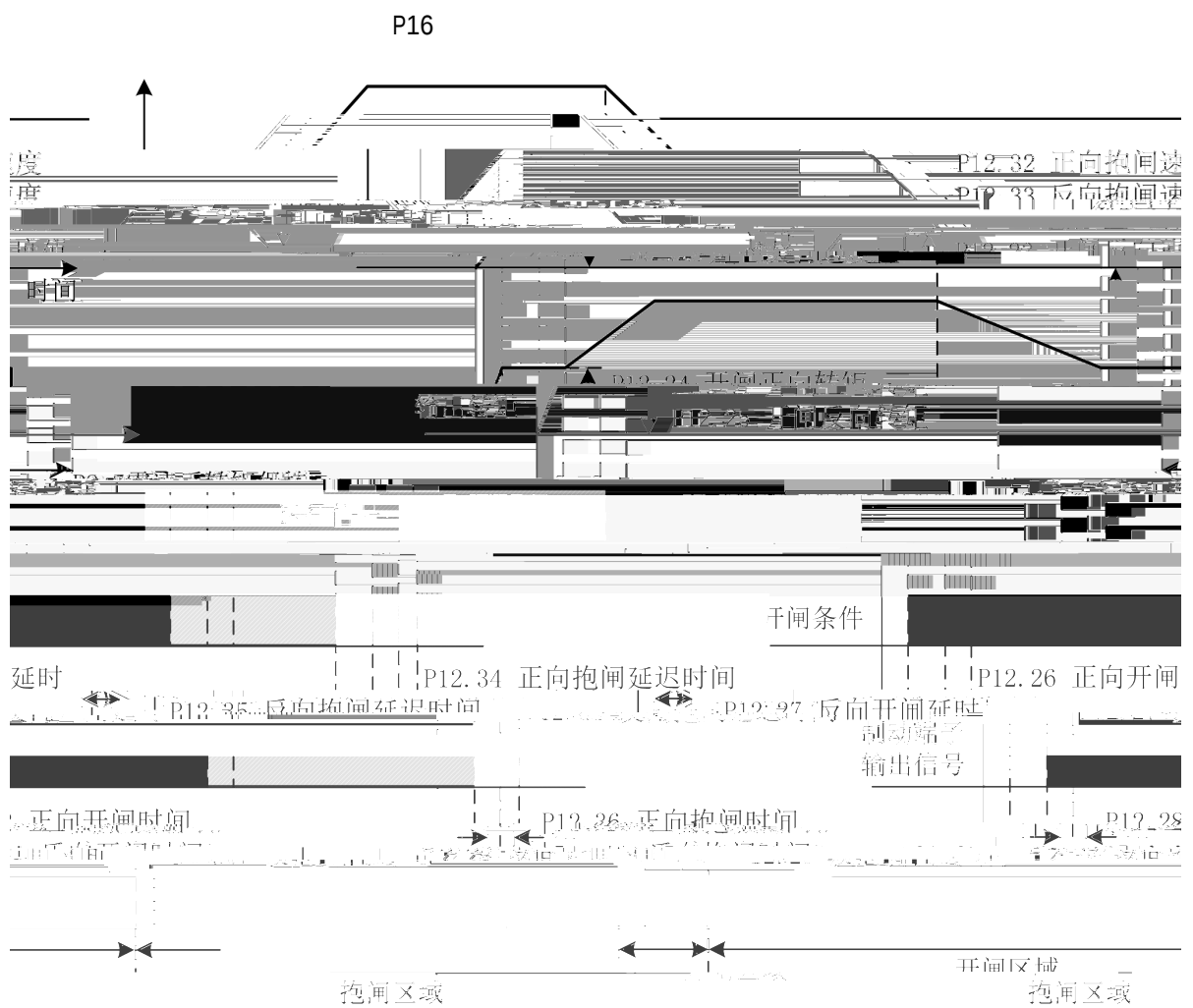
P12.22 P12.23

P12.24 P12.25

P12.32[] P12.33[]

P12.28 P12.29

P12.36 P12.37



9.9

V/F

1

P16.0 P16.9

P16.7

$120 \times \text{P16.5/P16.6}$

P16.9

$120 \times \text{P16.5/P16.7}$

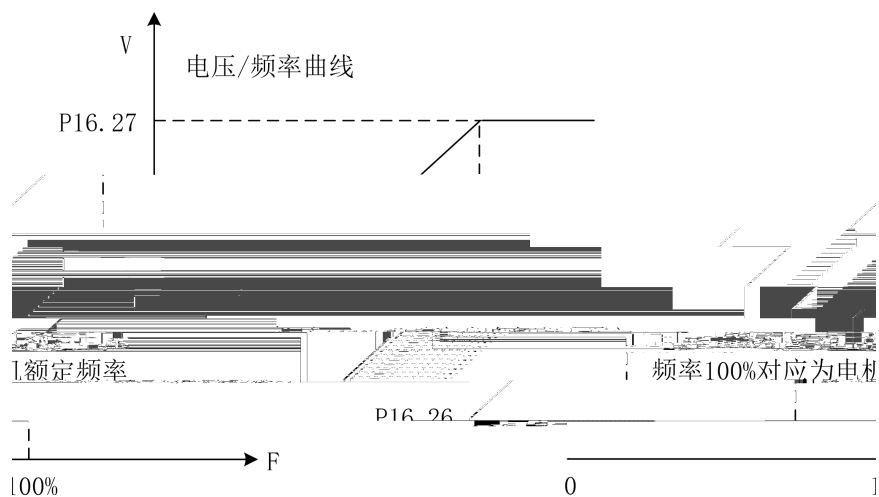
P16.2

P16.4

2

P16.12

[1]	V/F	P16.33	P16.45	V/F
[2]				

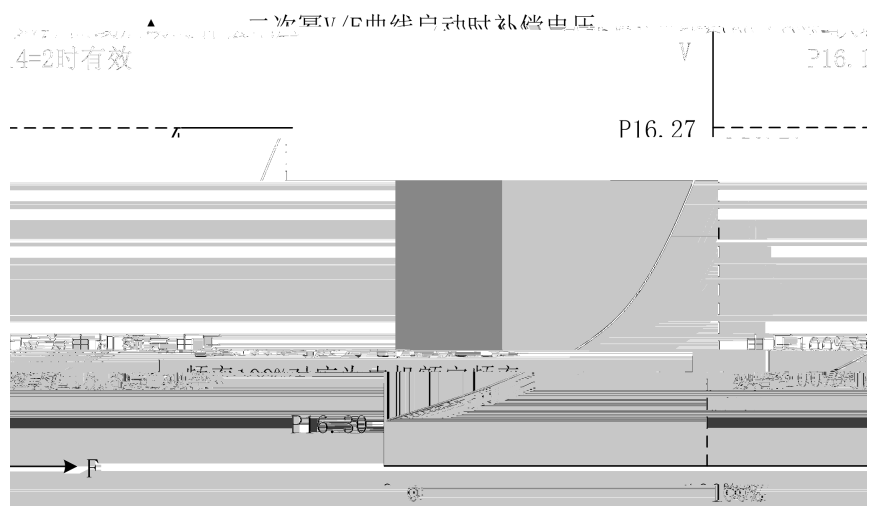


P16.14=[2]

V/F

P16.30 P16.30

P16.27



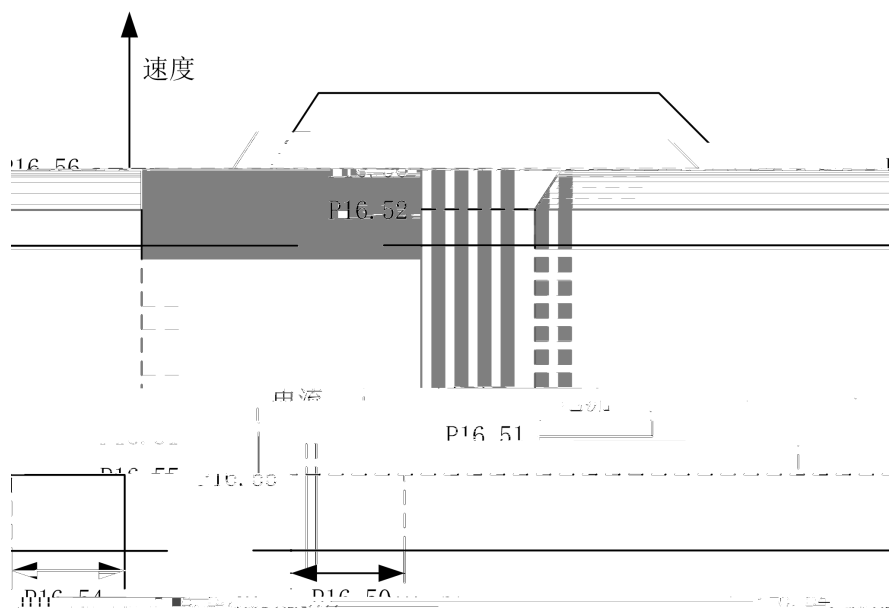
6

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
0

1

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]

9.11

P16.64
V/F (10 40Hz) 100 80 150

P16.12

Đ

V/F

10.

10.1

W01	SYS_NOT_RDY	(Ready)			
			[	P3	
W02	NO_DRV_ENABLE	]			
			[	P3	X
W03	LOCAL_EM	]			
			[		
W04	REMOTE_EM				

NOT RDY

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]	"	UVW	đ i u

[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	

10.3

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

•		•	
•	ON	•	ON
•	COM	•	COM
		(	)
•		•	
		•	
•		•	
•		•	
•		•	
•		•	
•		•	
•		•	
•	ON	•	ON

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

		1
	2	2
PCB		

11.4

