港迪刀盘主驱专用变频器　　系列

使用说明书版本：

HF650N

1

2

3 “ ” “ ” “ ”

4

5

	“ ”
注意	“ ”
警告	“ ”

危险

10

警告

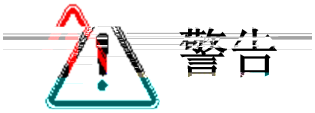
U V W

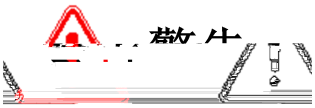
注意

，

警告

注意





3

警告

警告

IEC

危险

Ã5ÃÃU
&ÃÃU

` E2Ẁsp p

危险

10

ESD

警告

警告

危险

警告

警告

警告

1

RCD

RCM RCD

RCM

B RCD RCD

RCD RCD

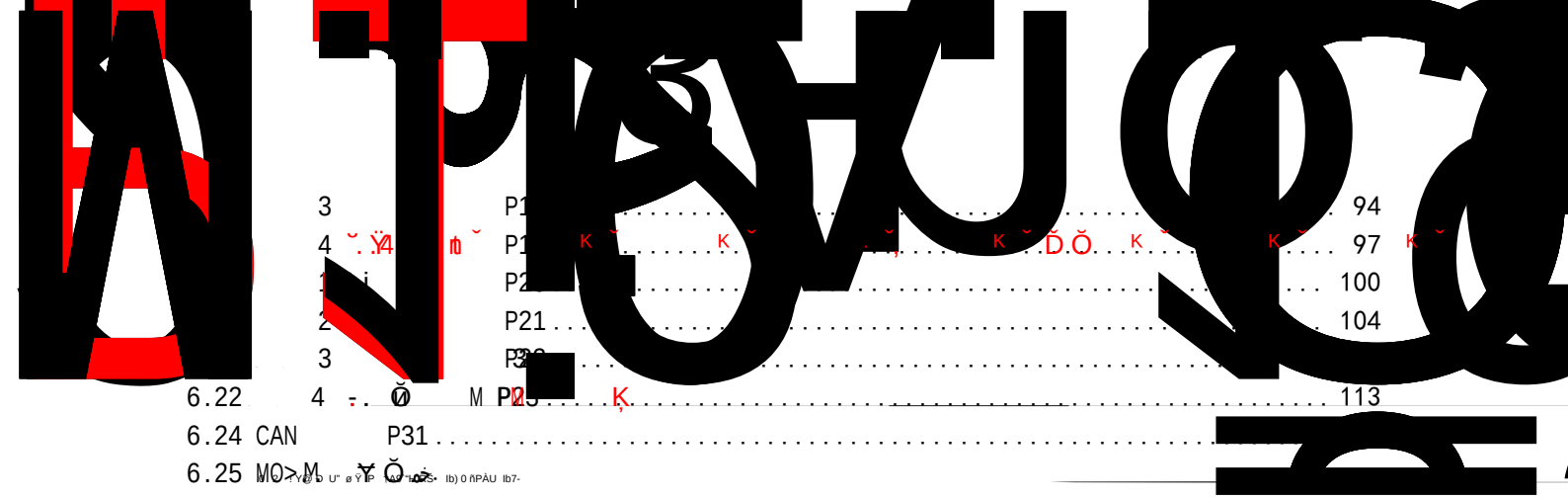
2

500V

5MΩ

3

1 1
1.1 1
1.2 4
1.3 N5~N10 8
1.4 11
1.5 12
1.6 14
1.7 14
1.8 15
1.9 16
2 17
2.1 17
2.2 18
2.3 19
2.4 20
3 21
3.1 21
3.2 22
3.3 26
4 35
4.1 35
4.2 LCD 35
5 43
5.1 43
5.2 44
5.3 45
5.4 45
5.5 45
5.6 47
6 51
6.1 P0 51
6.2 P3 51
6.3 P4 54
6.4 P5 55
6.5 P6 57
6.6 P7 59
6.7 1 P8 62
6.8 2 P9 66
6.9 3 P10 70
6.10 4 P11 74
6.11 1 P12 77
6.12 2 P13 80
6.13 3 P14 83
6.14 4 P15 86
6.15 1 V/F P16 88
6.16 2 V/F P17 91

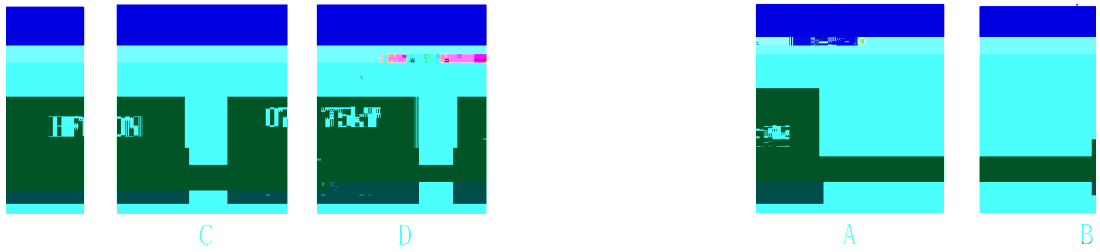


3 P1 94
4 ˘ Ÿ4 m ˘ P1 K ˘ K ˘ ˘ K ˘ D.Ŏ K K ˘ ..... 97 K ˘
1 i P2 100
2 P21 104
3 P3 .....
6.22 4 - Ŏ M P25 K 113
6.24 CAN P31 .....
6.25 MO>M ∀ Ŏ ...

B2.6 195
B2.7 197
B3 MOUDBUS 198
B3.1 GDHF-AMBX1 198
B3.2 200
B3.3 MODBUS 200
B3.4 MODBUS 201
B3.5 202
B3.6 203
B3.7 204
B3.8 205
B4 PN 206
B4.1 PN 206
B4.2 209
B4.3 PROFINET 209
B4.4 211
B4.5 213
B4.6 216
B4.7 PROFINET 217
B5 DP 218
B5.1 PROFIBUS 219
B5.2 220
B5.3 PROFIBUS 220
B5.4 PROFIBUS-DP 223
B5.5 223
B5.6 PPO 226
B5.7 226
B5.8 227
B5.9 228
B5.10 PROFIBUS 229

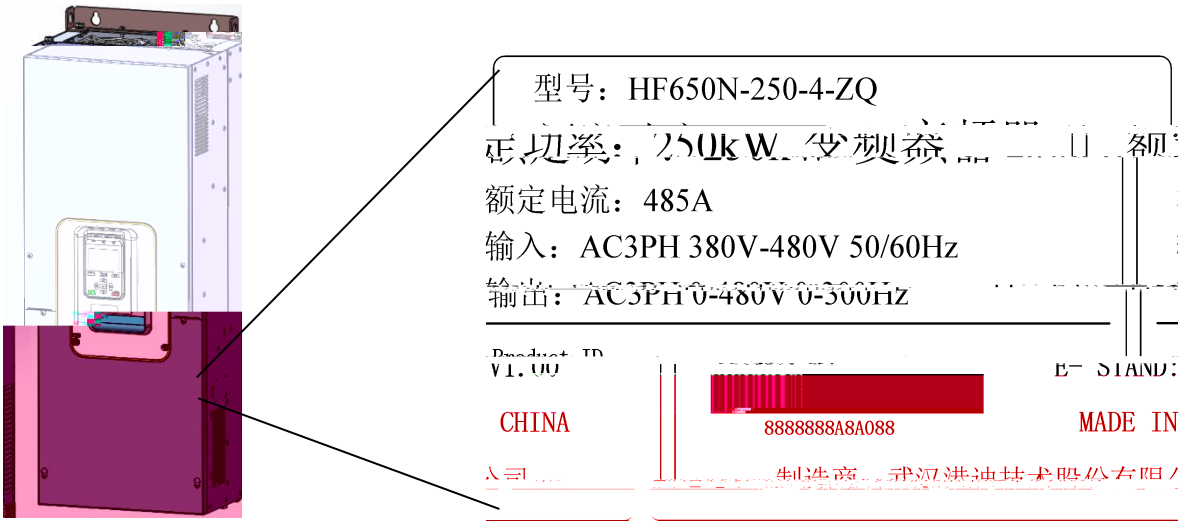
1

1.1



A	HF650N
B	037:37kW 075:75kW 400:400kW
C	4:380V
D	ZQ

HF650N 2-2 250kW



HF650N-250-4-ZQ HF650N 250kW 380V

AC

3PH

380V-480V 50/60Hz

0-480V 0-300Hz

HF650N

	[A]	[kW]	
HF650N-037-4-ZQ	75	37	N5
HF650N-045-4-ZQ	94	45	
HF650N-055-4-ZQ	115	55	
HF650N-075-4-ZQ	155	75	N6
HF650N-090-4-ZQ	188	90	
HF650N-110-4-ZQ	215	110	N7
HF650N-132-4-ZQ	265	132	

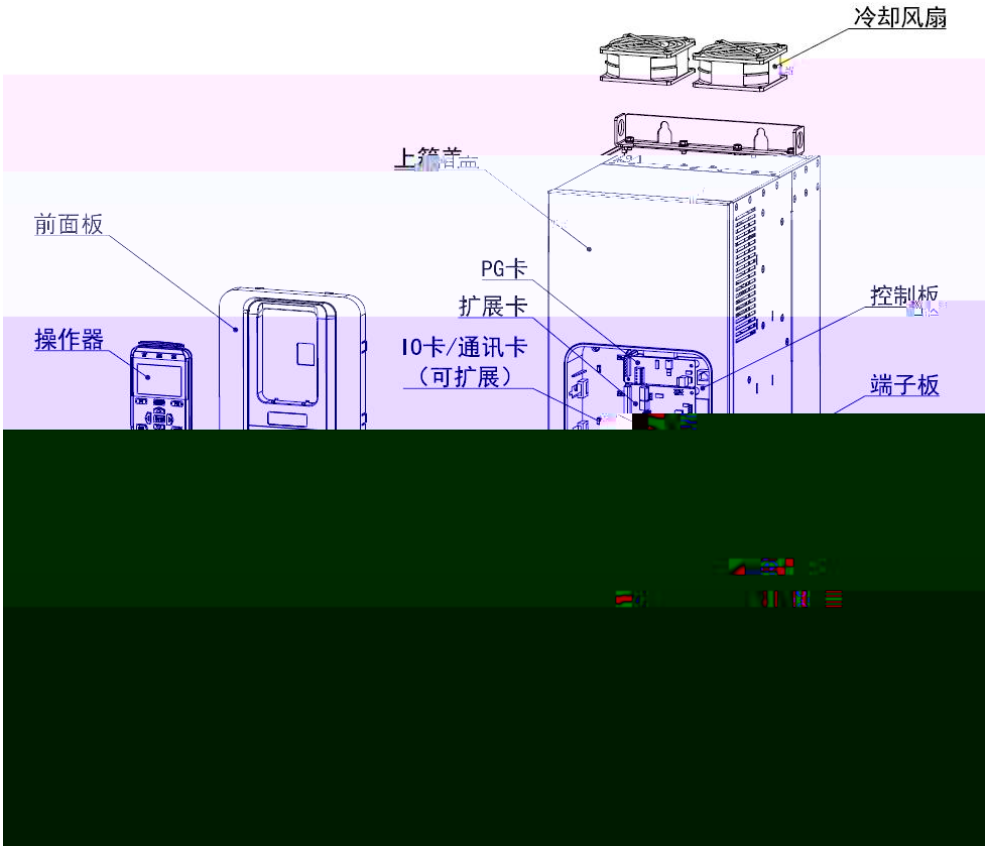
HF650N-160-4-ZQ	303	160	N8
HF650N-185-4-ZQ	365	185	
HF650N-200-4-ZQ	396	200	
HF650N-220-4-ZQ	438	220	N9
HF650N-250-4-ZQ	485	250	
HF650N-280-4-ZQ	545	280	N10
HF650N-315-4-ZQ	610	315	
HF650N-355-4-ZQ	668	355	
HF650N-400-4-ZQ	720	400	

1 (1) 150%, 5 1

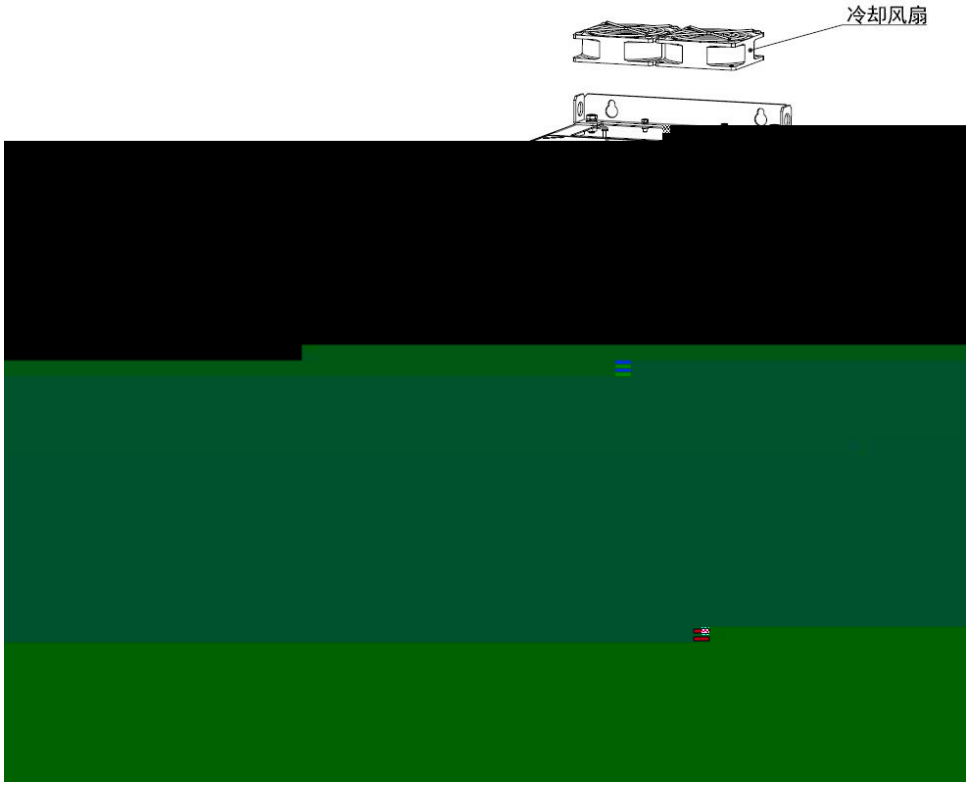
2 HF650N LCD

1.2

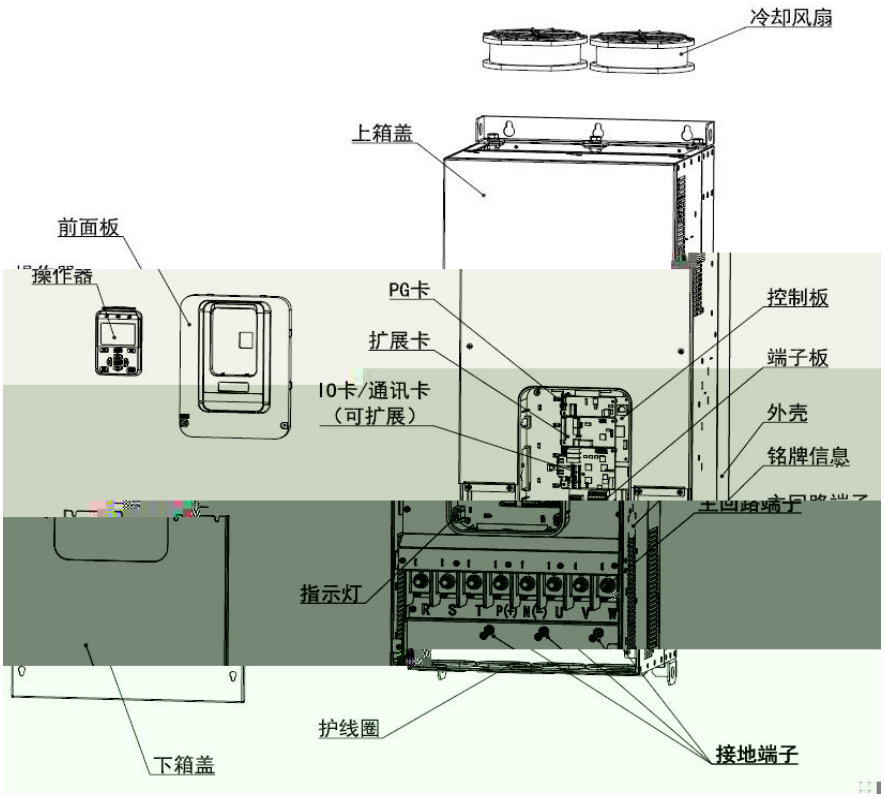
HF650N



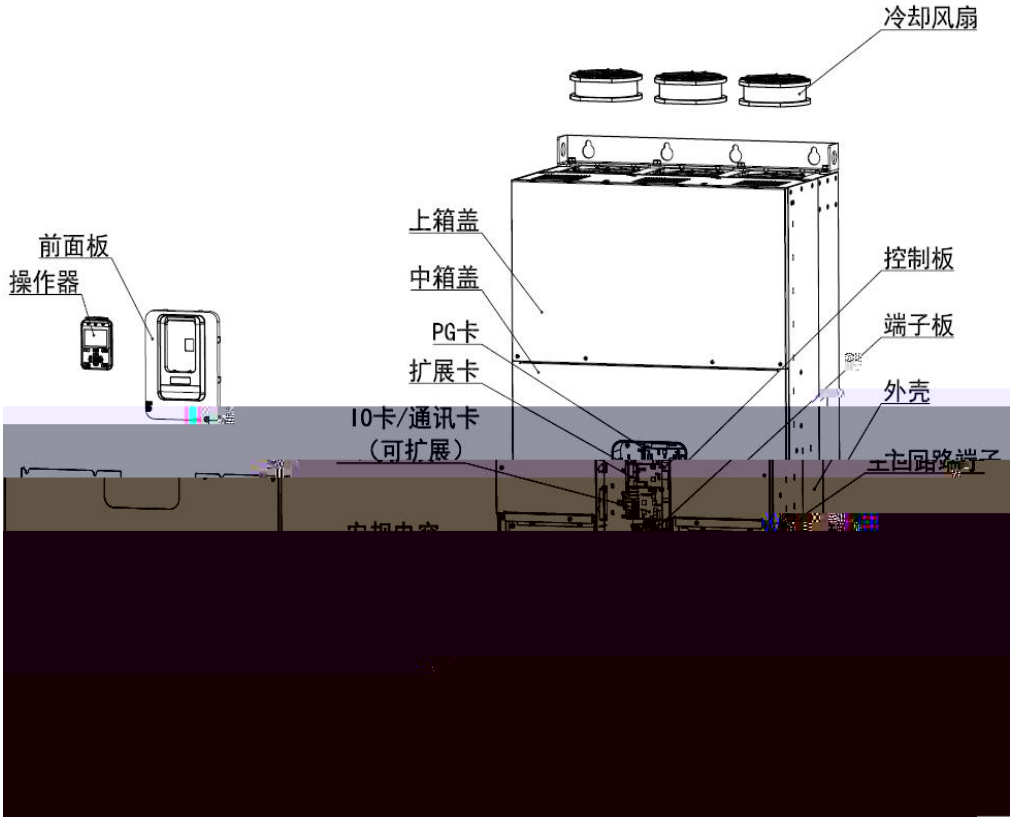
N5 380V 480V 37kW 55kW



N6　　380V　480V　75kW　90kW

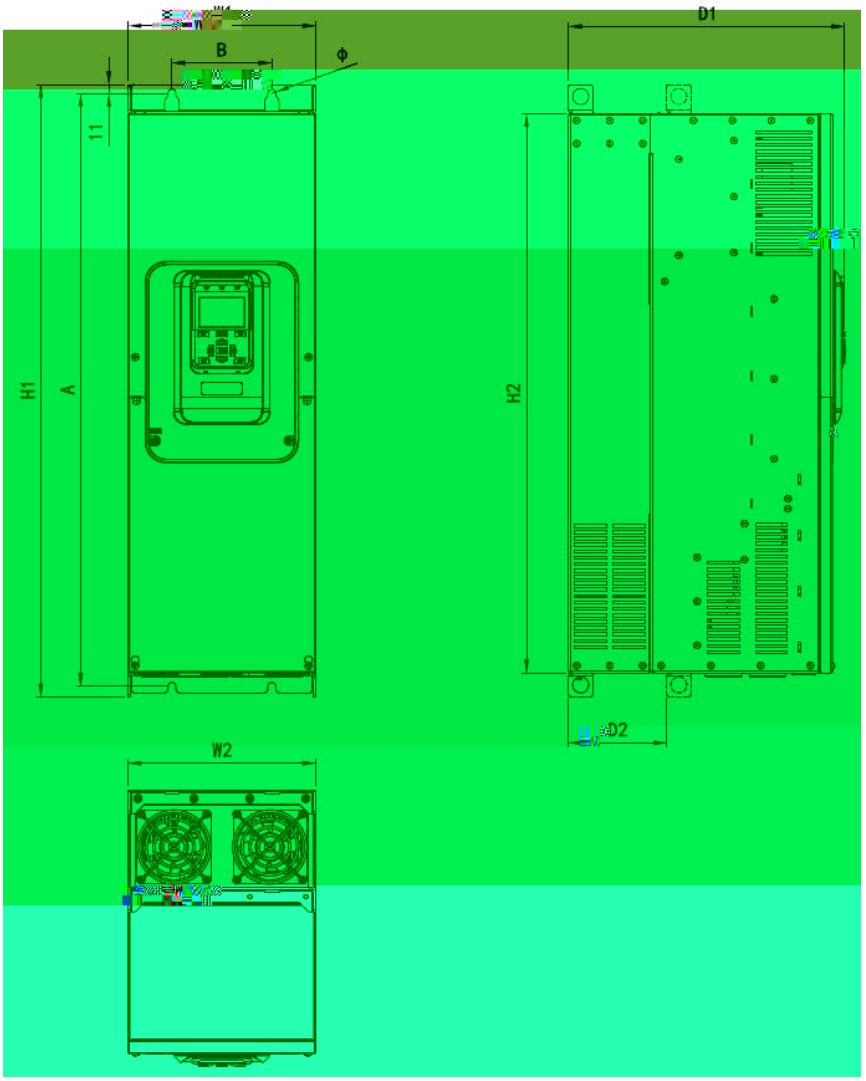


N7　　380V　480V　110kW　132kW



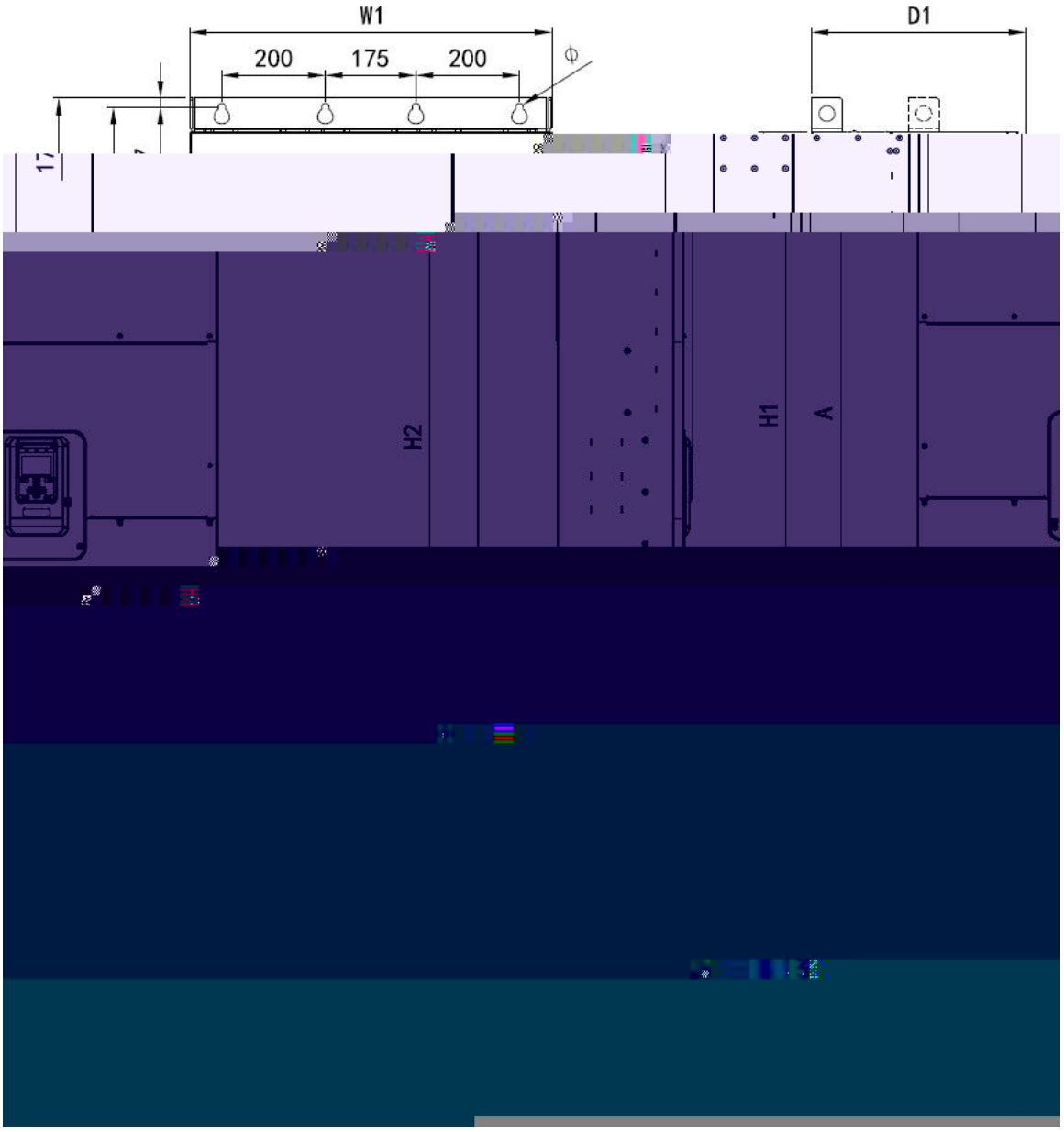
N10　　380V　480V　280kW　400kW

1.3 N5~N10



N5~N6

N7~N9



N10

1.4

		(mm)						mm			8.8	kg
		H1	H2	W1	W2	D1	D2	A	B	φ	M	
N5	37kW	766	700	235	235	346	123	742	125	2-φ10	4-M8	38
	45kW											
	55kW											
N6	75kW	885	810	315	315	332	153	855	225	2-φ10	4-M8	55
	90kW											
N7	110kW	965	880	390	390	346	178	928	300	3-φ10	6-M8	80
	132kW											
N8	160kW	1094	975	492	488	376	180	1054	350	3-φ14	6-M12	120
	185kW											
	200kW											
N9	220kW	1200	1080	490	486	396	185	1148	350	3-φ14	6-M12	150
	250kW											
N10	280kW	1305	1180	700	696	415	187	1260	/	4-φ14	8-M12	240
	315kW											
	355kW											
	400kW											

1.5

		380V 480V
		50/60Hz
		-15% +10%
		fLN ± 2 ± 4 ≤ 2 fLN/s
		0
		 1
		0 300Hz
		1kHz 10kHz
		0.01Hz x0.1%
		(VC) (SVC) V/F
	V/F	
		PG PG
		300Hz
		0Hz/200%(VC SVC) 0.8Hz/150%(V/F)
		<5ms(SVC) <5ms(VC)
		± 5%(SVC) ± 3%(VC)
		1:500(SVC) 1:1000(VC)
		± 0.02% (VC) ± 0.2% (SVC) ± 0.5% (V/F)
		150% 5 1
	PID	

PID

/ /

/ /

5 2 0 +10V 0mA/4mA 20mA

3 1 2 2

0 +10V 0mA/4mA 20mA

LCD

LCD

1000 1000

100 1%

3000

-10 +40 40

1 1% 50

-10

95%RH

-20 +60

10-30

a

		≤ 80db

1.6

1 200%

2 50% HF650N

3 HF650N

1.7

	[kW]	[kW]		[kW]	[kW]
HF650N-037-4-ZQ	37	0.906	HF650N-185-4-ZQ	185	4.495
HF650N-045-4-ZQ	45	1.128	HF650N-200-4-ZQ	200	4.8
HF650N-055-4-ZQ	55	1.313	HF650N-220-4-ZQ	220	4.91
HF650N-075-4-ZQ	75	1.486	HF650N-250-4-ZQ	250	5.88
HF650N-090-4-ZQ	90	1.956	HF650N-280-4-ZQ	280	7.044
HF650N-110-4-ZQ	110	2.422	HF650N-315-4-ZQ	315	7.708
HF650N-132-4-ZQ	132	3.1	HF650N-355-4-ZQ	355	8.003
HF650N-160-4-ZQ	160	3.663	HF650N-400-4-ZQ	400	8.718

1.8

DP	GDHF-ADPX1	GDHF-ADPX1 PROFIBUS HF650N
PG	GDHF-APGX1 PG	GDHF-APGX1 PG HF650N 15V
PN	GDHF-APNX1	GDHF-APNX1 Profinet RJ45 HF650N
CAN	GDHF-ACNX1	CAN-OPEN CAN2.0B HF650N
MODBUS	GDHF-AMBX1	GDHF-MB01 MODBUS-RTU RS485 RS485 RS232 MODBUS-RTU HF650N

1.9

⚠
1. / “ ” / 2. 3. - R S T - U V W - P1 P N 4. 10 5.
⚠
1. 2. 3. 40

2

2.1

AC380V
断路器
熔断器
接触器
输入
电抗器
EMC
滤波器
HF650N系列变频器
GUIDE
R S T DBR P+ N- U V W PE
接地
制动
电阻
负载
电机
制动
电阻

HF650N

2.2

		( )
EMC		
	22kW	
		a) b) 100m
dv/dt		dv/dt

更多资料，请登录公司官方网站查询 www.gdetec.com

/ ( )

2.3

	A	/ mm² CEFR 40%	A (AC-3)
37kW	75	10	80
45kW	94	16	95
55kW	115	16	115
75kW	155	25	150
90kW	188	35	205
110kW	215	50	245
132kW	265	70	300
160kW	330	95	410
185kW	365	95	410
200kW	396	120	475
220kW	438	120	475
250kW	485	150	620
280KW	545	70*2	620
315kW	610	95*2	620
355kW	668	120*2	2*410
400kW	720	120*2	2*410

2.4

	2%		1%	
	A	mH	A	mH
37kW	86.0	0.16	75	0.09
45kW	92	0.15	94	0.07
55kW	112	0.13	115	0.06
75kW	152	0.09	155	0.05
90kW	185	0.08	188	0.04
110kW	210	0.07	215	0.03
132kW	260	0.05	265	0.03
160kW	297	0.05	303	0.02
185kW	358	0.04	365	0.02
200kW	388	0.04	396	0.02
220kW	430	0.03	438	0.02
250kW	475	0.03	485	0.01
280KW	534	0.03	545	0.010

更多资料，请登录公司官方网站查询www.gdetec.com

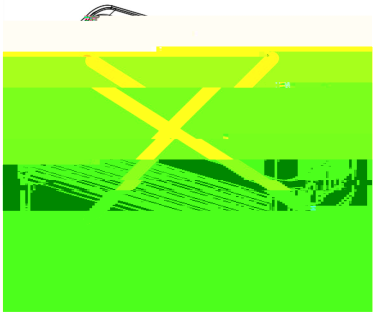
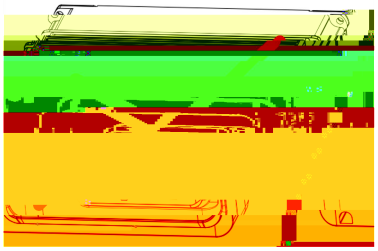
3

3.1

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

3.2

3.2.1

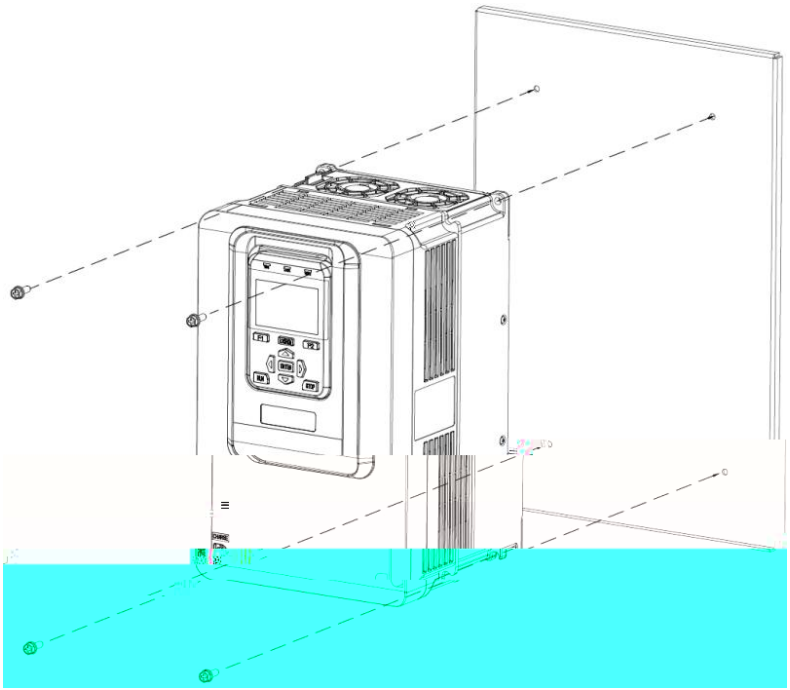
		

3.2.2

		(mm)	
N5 N6	37kW 90kW	A ≥ 250	B ≥ 50
N7 N10	110kW 400kW	A ≥ 300	B ≥ 50

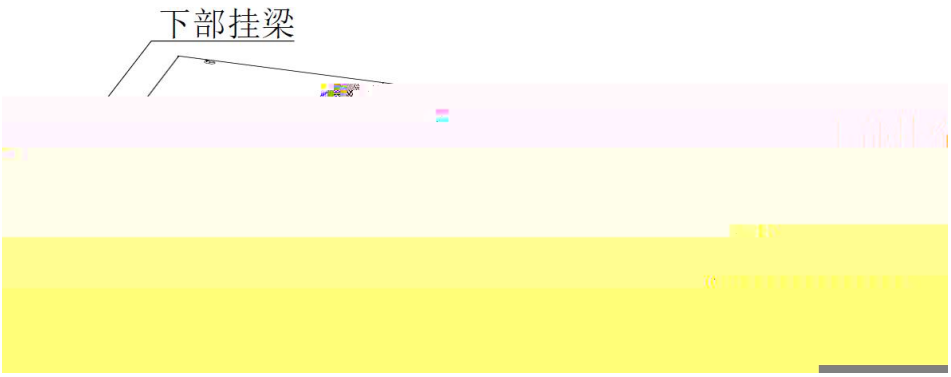
3.2.3

1



2

N5 N10



m " "

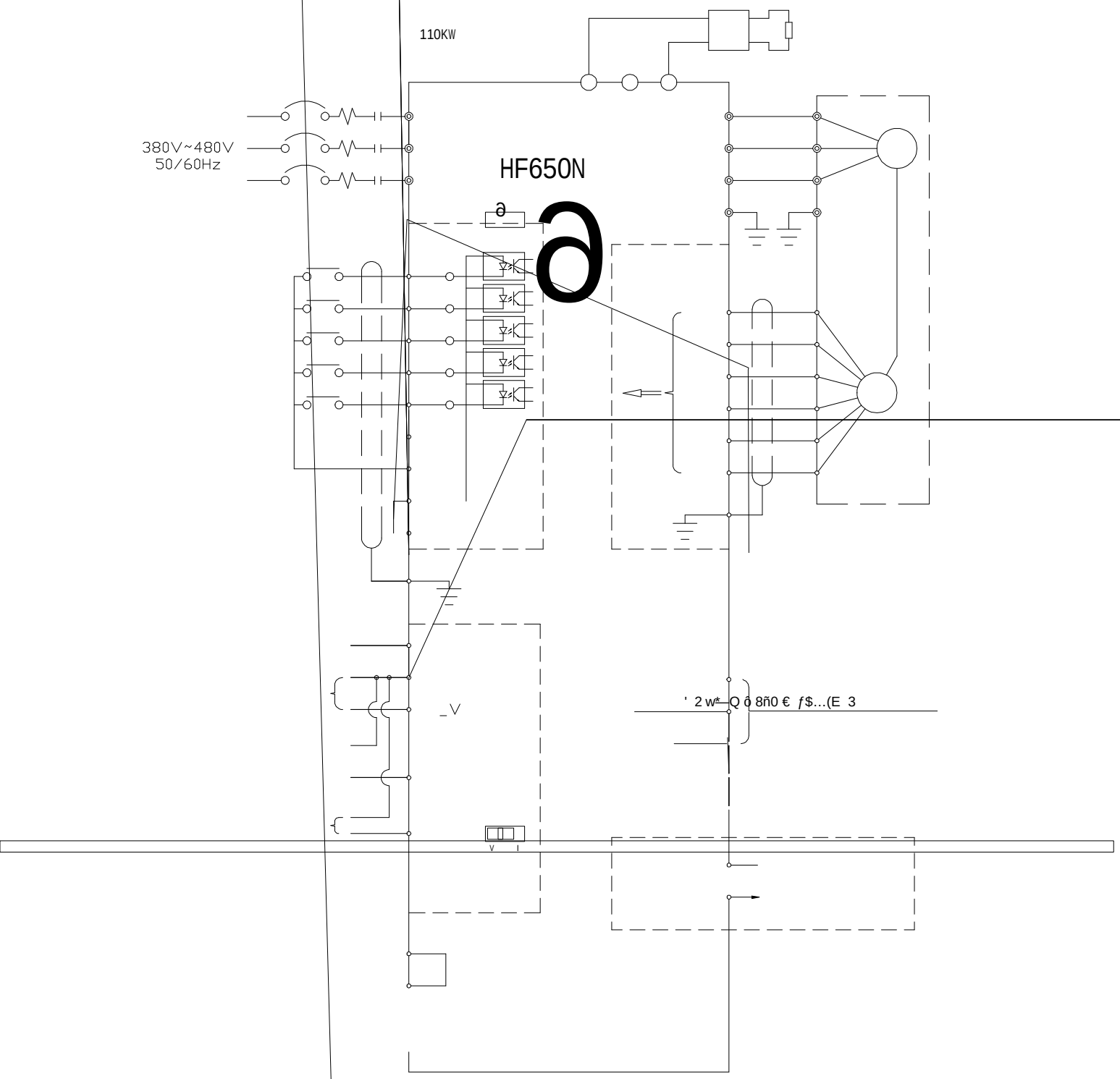
3.2.4

N5 N10

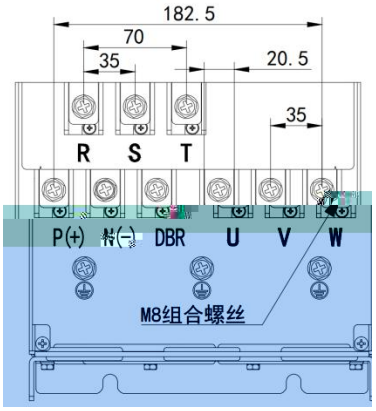
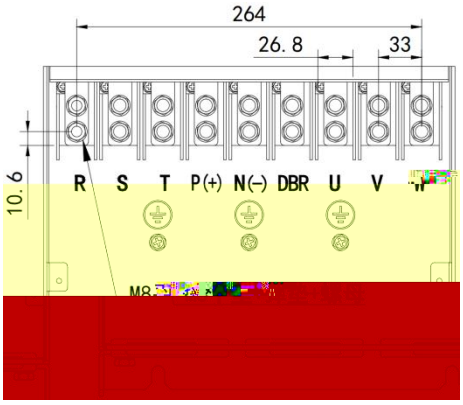
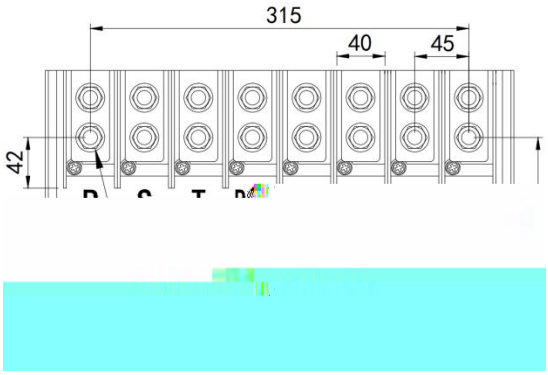
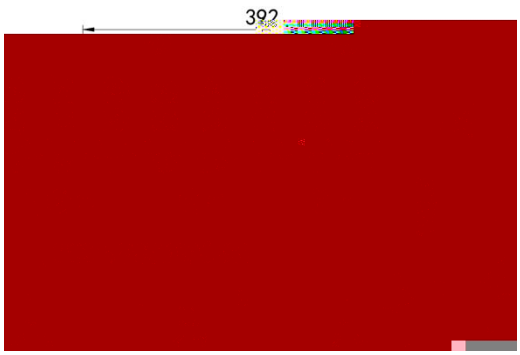
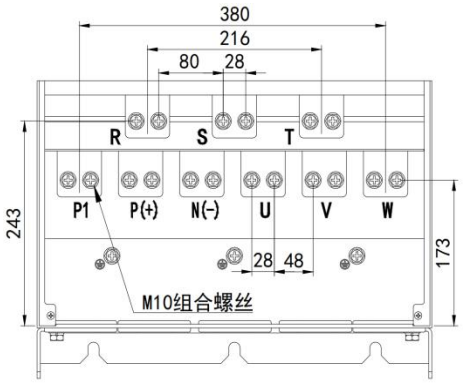
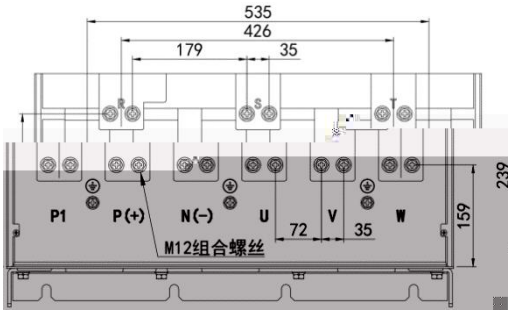
1

3.3

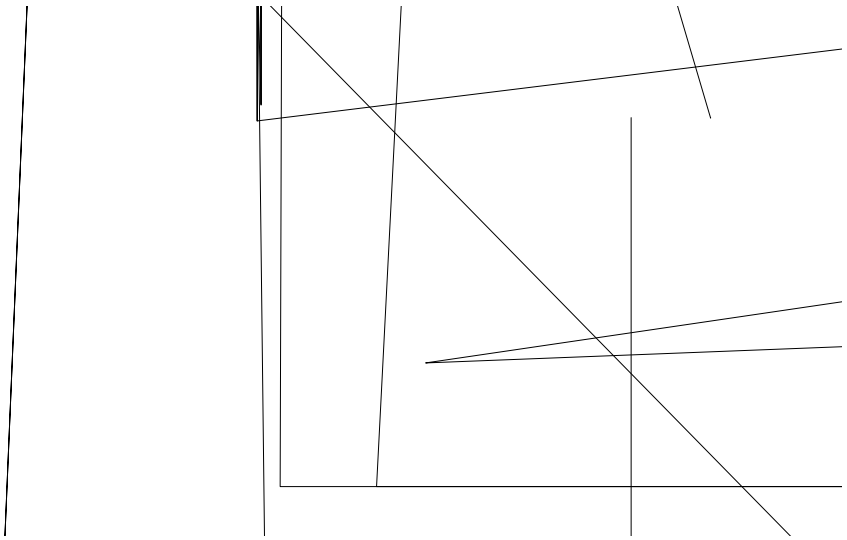
3.3.1



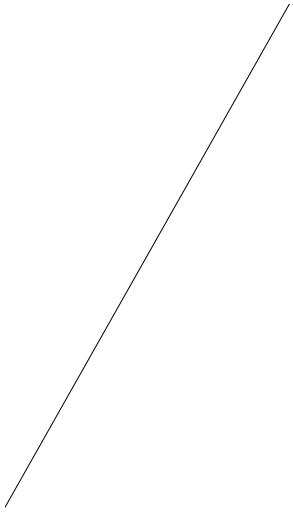
3.3.2

N5	N6
	
N7	**N8**
	
N9	**N10**
	

(1) N5



(3) N7~N8

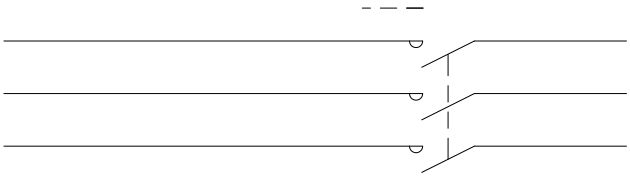


P(+)	
P1	
N(-)	
R S T	
U V W	
PE	

3.3.3

1		
2	10	
3	U V W	
4		
5		
6		
7	U V W	
8		
9	10cm	
10	0.75mm² 50m	
11	10cm	

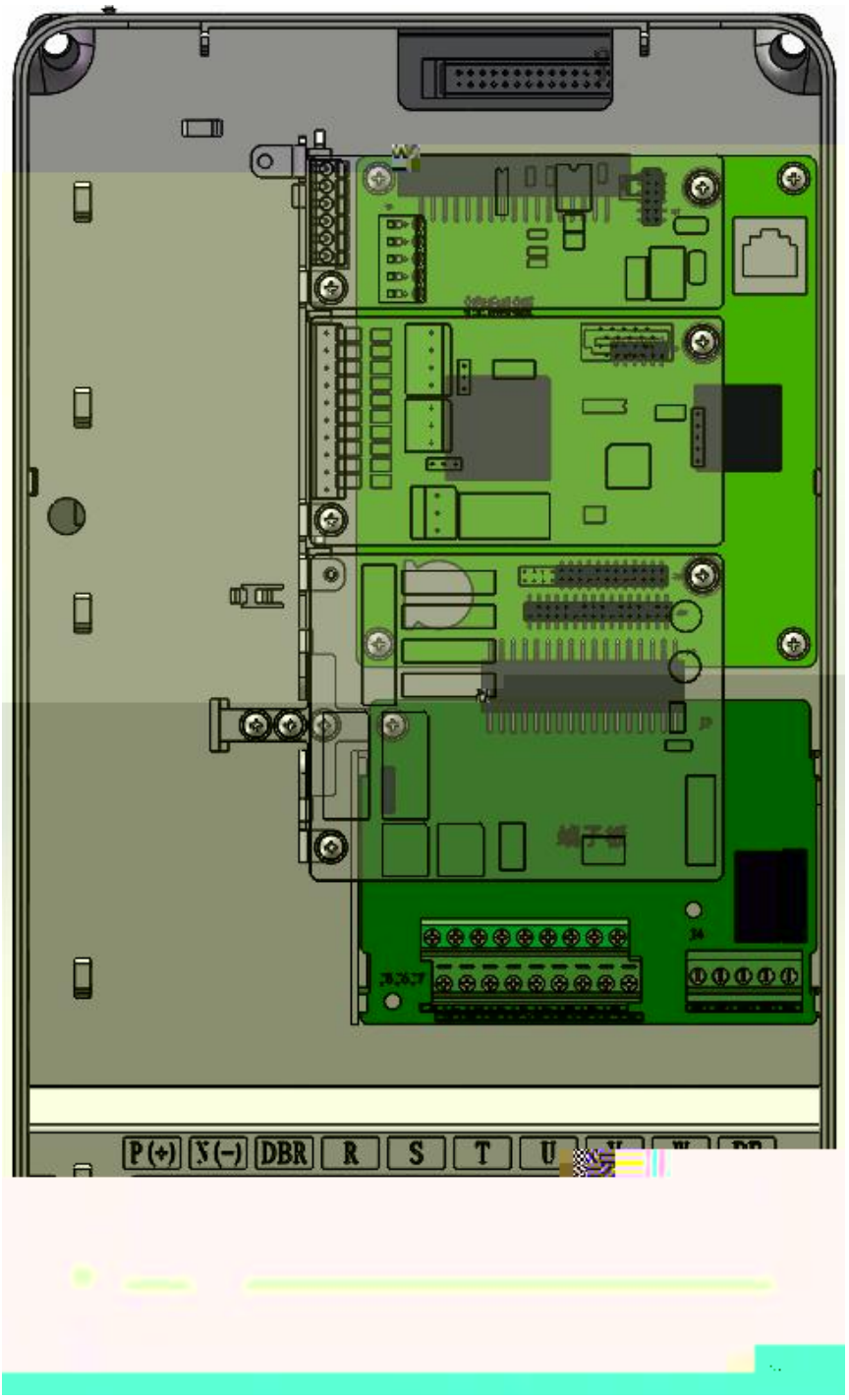
12	100m 100m	
13		
14		
15	30 m	

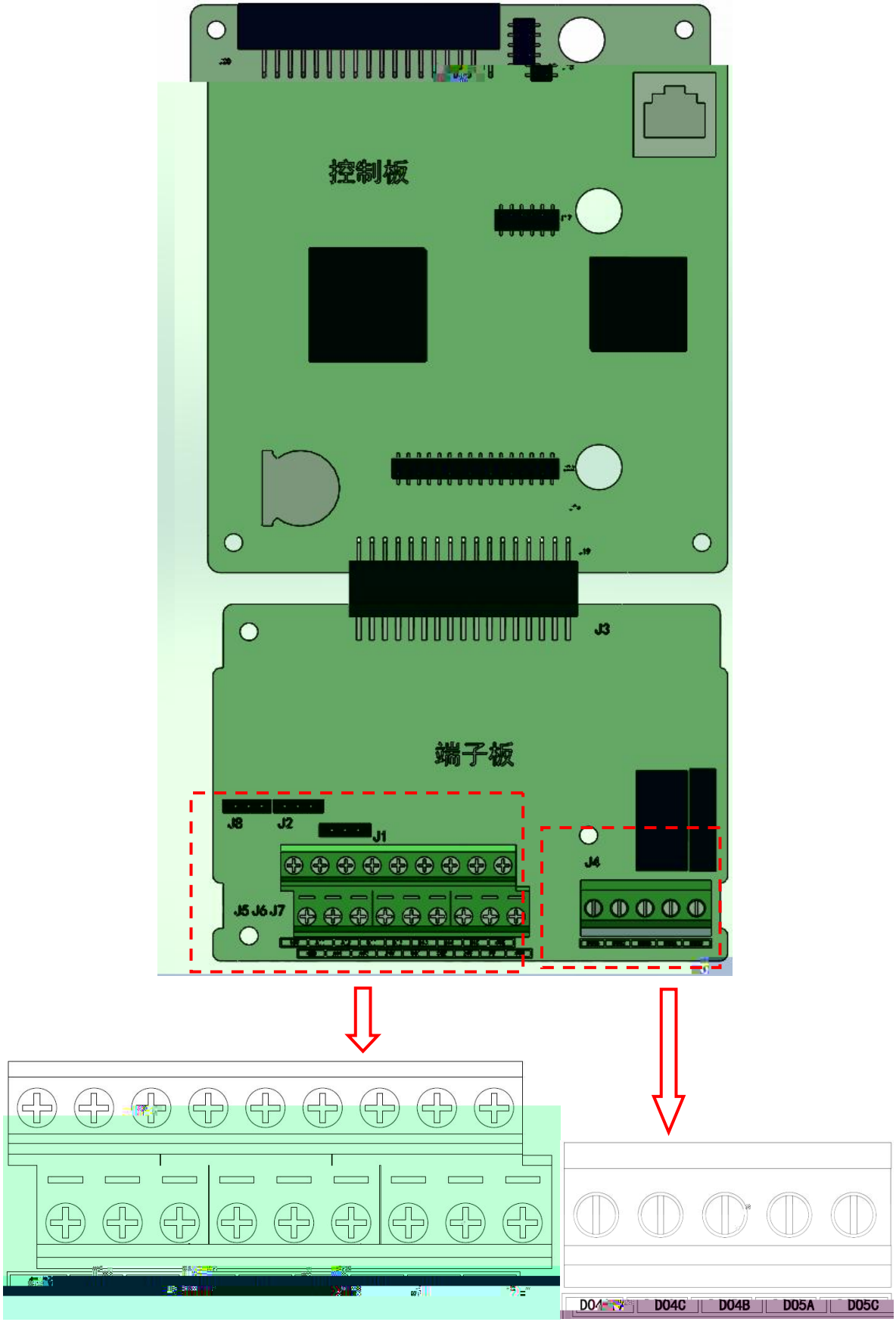


3.3.4

PG

HF650N




控制板
J3
端子板
J8
J2
J1
J4
J5 J6 J7
D04
D04C
D04B
D05A
D05C

4

4.1

HF650 LCD

4.2 LCD

4.2.1LCD

HF650 F1 LOCAL/REMOTE

F2 RUN STOP /RESET ENTER

4.2.2LCD

▼

▲

ENTER

RUN STOP

LOCAL/REMOTE /

LCD

“ ” “ ” 2

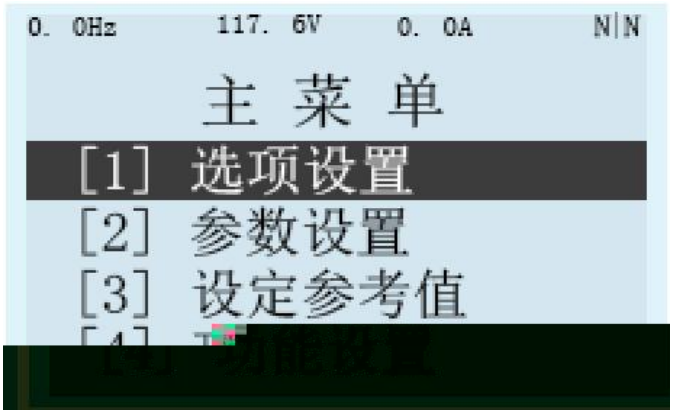
|

	“ - ”
	:V
	A
	N|N W E

4

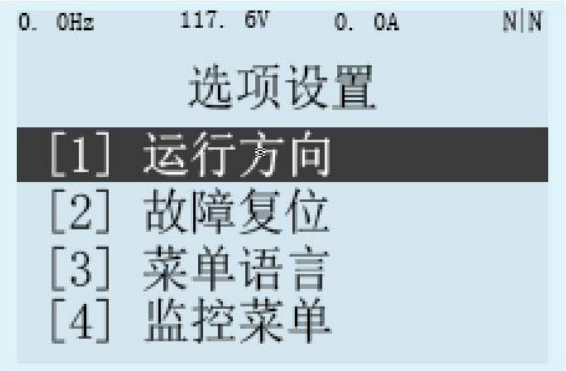
ENTER F1/F2

4.2.3LCD



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

4.2.4 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

8	System Restart	
9	Backup Parameter	
10	Recover Parameter	
11	Compare Parameter	
12	Backup Para DSP DSP	DSP
13	Restore Para DSP DSP	DSP

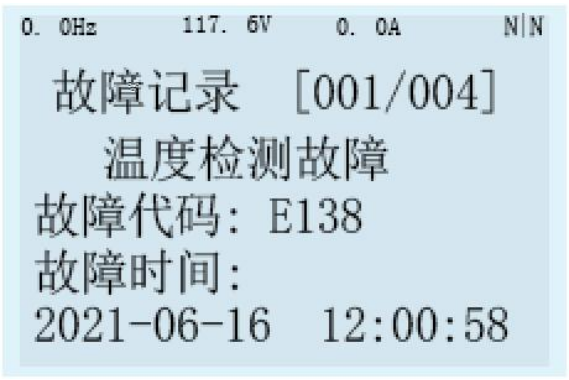
1

2 5

▼

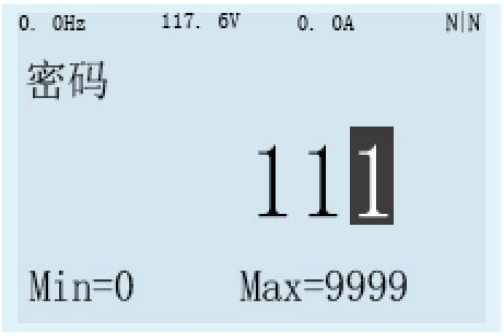
▲ “Enter”

4 LCD



Fault Record

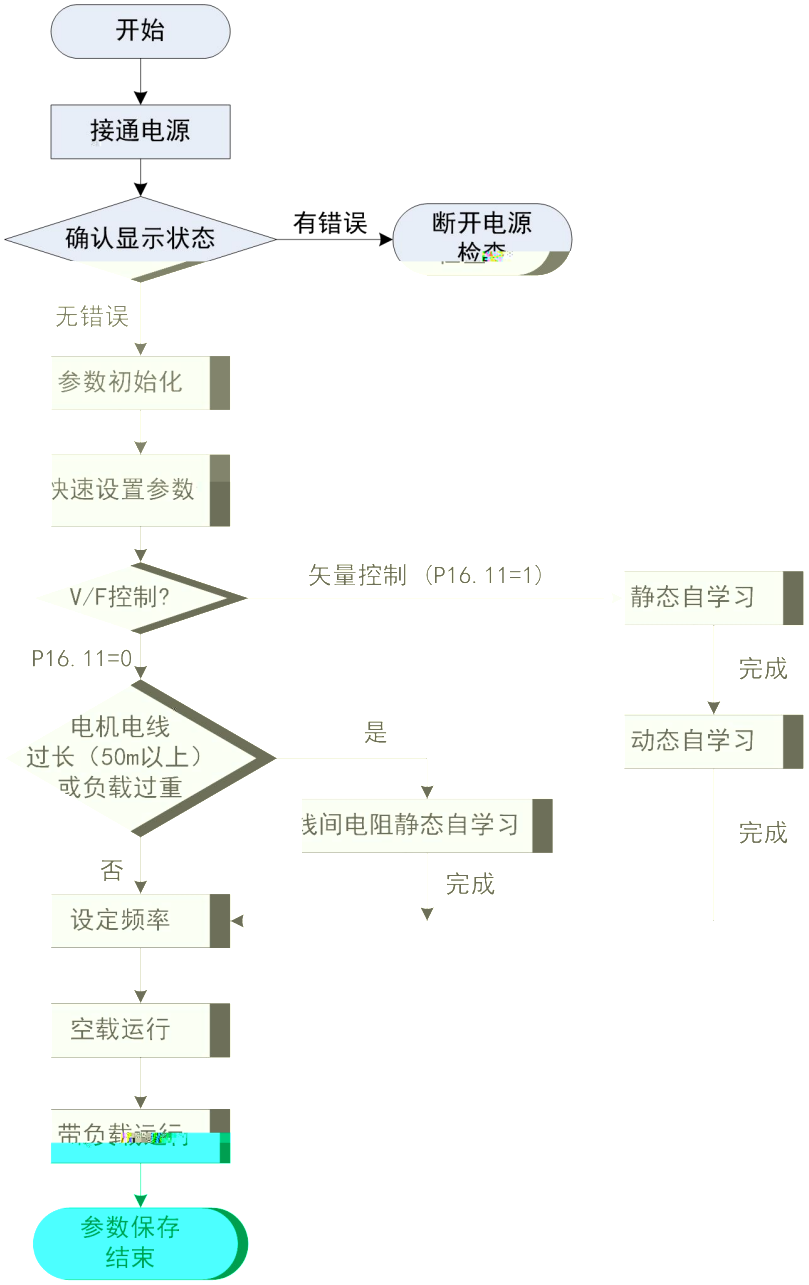
5 LCD



Access Permissions

5

5.1


开始
接通电源
确认显示状态
有错误
断开电源
检查
无错误
参数初始化
快速设置参数
V/F控制?
矢量控制（P16.11=1）
静态自学习
完成
P16.11=0
电机电线
过长（50m以上）
或负载过重
是
动态自学习
定子间电阻静态自学习
完成
完成
否
设定频率
空载运行
带负载运行
参数保存
结束

1 /

2 V/F P16.11=0 V/F

3 P16.11=2 P16.11=1

5.2

5.3

LCD

Warring/Error

N | E W | E

5.4

LCD

4.2.4 “ ”

5.5

P16.2				P16.24		V/F	50 [Hz]
P16.3				P8.16	1	P8.15	3
P16.4				P8.35	1	P8.34	3

P16.5				P8.0		[0] [1] [2]DP [3]MODBUS [4]	1
P16.6				P8.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	3
P16.7		120×P16.5 / P16.6		P8.3		[0] [1]	1
P16.9		120 ×P16.5/P16.7		P7.0	[1]	0~300[%]	180%
P16.11		[0]V/F [1] [2]	0	P7.4	[1]	0~300[%]	235%
P16.14	V/F	[0] V/F [1] V/F [2]	0	P7.19	[1]	100.0 720.0[%]	120%

5.6

1

P16.11	0	V/F	
	1		
	2		

2

HF650N

		7.5%
	50%	
	1/5	
	P16	
	V/F	

3

	V/F			1， 2， 3，“ ” 4，“ ”
			& &	1， 2， 3， 4， 5，“ ” 6，“ ” 1， 2， 50% 3， 4， 5， 6，“ ” 7，“ ”

4

1		
2	LOC/REM LOCAL LOCAL	
3	ENTER [1] 5Hz	
4	RUN RUN	
5	4 50Hz	
6	STOP	

5

		STOP	
	1		
	2	LOC/REM LOCAL LOCAL	
	3	ENTER [1] 5Hz	
	4	RUN RUN	
	5	4 50Hz	
	6	STOP	

6

6

	P0		V/F	P16	1 V/F
	P3			P17	2 V/F
	P4			P18	3 V/F
	P5			P19	4 V/F
	P6			P20	1
	P7			P21	2
	P8	1		P22	3
	P9	2		P23	4
	P10	3		P31	CAN
	P11	4		P32	MODBUS
	P12	1		P33	
	P13	2			
	P14	3			
	P15	4			

6.1 P0

P0.0		[0] [1]	0 1	0	
P0.1			0 27	14	
P0.3		[0]50HZ [1]60HZ	0 1	0	
P0.4					
P0.5					

6.2 P3

P3.0	1		0 41	0	
P3.1	2		0 41	0	

P3.2	3		0 41	0	
P3.3	4		0 41	0	
P3.4	5		0 41	0	
P3.5	6		0 41	0	
P3.6	7		0 41	0	
P3.7	8		0 41	0	
P3.8	9		0 41	0	
P3.9	10		0 41	0	
P3.10	11		0 41	0	
P3.11	12		0 41	0	
P3.12		[0] [1]	0 1	0	
P3.13	HDI5		0.100 50.000	0.100	
P3.14	HDI5		0.0 300.0	0.0	
P3.15	HDI5		0.100 50.000	0.100	
P3.16	HDI5		0.0 100.0	0.0	
P3.17	UP@Hz/		0.0 50.0	1.0	
P3.18	DOWN@Hz/		0.0 50.0	1.0	

0		
1		
2		
3		
4	.NC	
5		</RST

6	1 0	7.1
7	2 1	
8	3 2	
9	4 3	
10		7.11
11		
12		
13	.NC	
14		
15	.NC	
16		
17	0	1 0 00 1 01 2 10 3 11 4
18	1	
19	/	
20		AFE
21		
22	FUNC 22	
23	FUNC 23	
24		
25		
26		
27	FUNC 27	
28		7.11
29		
30	/	
31	UP	
32	DOWN	
33		*8.62
40		
41		

6.3 P4

P4.0	1		0 64	0	
P4.1	2		0 64	0	
P4.2	3		0 64	0	
P4.3	4		0 64	0	
P4.4	5		0 64	0	
P4.5	6		0 64	0	
P4.6	7		0 64	0	
P4.16	1		0 500	0	
P4.17	2		0 500	0	
P4.18	3		0 500	0	
P4.19	4		0 500	0	

0		
1		7.2
2		ON
3		7.2
4		
5		
6	1	[6] [9]
7	2	
8	3	
9	4	
10	FUNC 10	
11		
12		
13		
14		
15		
16		7.7

17	0	1
18	1	2
19	2	3
20	3	4
21 31	FUNC 21 FUNC 31	
32		AFE
33 48	FUNC 33 FUNC 48	
49	PROFIBUS 1	PROFIBUS 1 1
50	PROFIBUS 2	PROFIBUS 2 1
51	PROFIBUS 3	PROFIBUS 3 1
52	PROFIBUS 4	PROFIBUS 4 1
53	PROFIBUS 5	PROFIBUS 5 1
54 56	FUNC 54 FUNC 56	
57	1	1 1
58	2	2 1
59	3	3 1
60	4	4 1
61	1	1 1
62	2	2 1
63	3	3 1
64	4	4 1

6.4 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]	0.0 [ms]	

P5.2	AI1	AI1	-10.00 [V]	10.00 [V]	0.000 [V]	7.3
P5.3	AI1	AI1	-20.00 [mA]	20.00 [mA]	0.000 [mA]	7.3
P5.4	AI1	AI1	-10.00 [V]	10.00 [V]	0.000 [V]	7.3
P5.5	AI1	AI1				

P5.26	AI2	AI2	0.00 20.00 [mA]	20.000 [mA]	
P5.27	AI2	AI2	-300.0 300.0 [%]	100.0 [%]	

6.5 P6

P6.0	AO1	7-1	0 14	2	
P6.2	AO1	AO1	-300.0 300.0 [%]	0.0 [%]	7.4
P6.3	AO1	AO1	-300.0 300.0 [%]	100.0 [%]	7.4
P6.4	AO1 [mA V]	AO1	0.0 100.0 [%]	0.0 [%]	7.4
P6.5	AO1 [mA V]	AO1	0.0 100.0 [%]	100.0 [%]	7.4
P6.6	AO1	AO1	-100.00 100.00 [%]	0.00 [%]	
P6.7	AO1	AO1 (P6.0 [13])	0.0 100.0 [%]	0.0 [%]	
P6.8	AO1	AO1	0.0 1000.0 [ms]	10.0 [ms]	
P6.14	AO2	7-1	0 14	4	
P6.16	AO2	AO2	-300.0 300.0 [%]	0.0 [%]	
P6.17	AO2	AO2	-300.0 300.0 [%]	100.0 [%]	
P6.18	AO2 [mA V]	AO2	0.0 100.0 [%]	0.0 [%]	

P6.19	AO2 [mA V]	AO2	0.0 100.0 [%]	100.0 [%]	
P6.20	AO2	AO2	-100.00 100.00 [%]	0.00 [%]	
P6.21	AO2	AO2 (P6.14 [13])	0.0 100.0 [%]	0.0 [%]	
P6.22	AO2	AO1	0.0 1000.0 [ms]	10.0 [ms]	

7-1

0

1

2

3

4

5 V

:

6.6 P7

P7.0	[1]	1	0.0 300.0 [%]	180.0 [%]	7.5
P7.1	[2]	2	0.0 300.0 [%]	180.0 [%]	7.5
P7.2	[3]	3	0.0 300.0 [%]	180.0 [%]	7.5
P7.3	[4]	4	0.0 300.0 [%]	180.0 [%]	7.5
P7.4	[1]	1	0.0 300.0 [%]	235.0 [%]	7.5
P7.5	[2]	2	0.0 300.0 [%]	235.0 [%]	7.5
P7.6	[3]	3	0.0 300.0 [%]	235.0 [%]	7.5
P7.7	[4]	4	0.0 300.0 [%]	235.0 [%]	7.5
P7.8	[1]	1	0.0 100.0 [%]	20.0 [%]	7.5
P7.9	[2]	2	0.0 100.0 [%]	20.0 [%]	7.5
P7.10	[3]	3	0.0 100.0 [%]	20.0 [%]	7.5
P7.11	[4]	4	0.0 100.0 [%]	20.0 [%]	7.5
P7.12			600 820 [V]	800 [V]	7.5
P7.13			300 500 [V]	350 [V]	7.5
P7.14			60.0 100.0 [ ]	87.5 [ ]	7.5
P7.15			50.0 100.0 [ ]	80.0 [ ]	7.5
P7.19	[1]	1	100.0 720.0 [%]	120.0 [%]	7.5
P7.20	[2]	2	100.0 720.0 [%]	120.0 [%]	7.5
P7.21	[3]	3	100.0 720.0 [%]	120.0 [%]	7.5

P7.22	[4]	4	100.0 720.0 [%]	120.0 [%]	7.5
P7.23	1 M1	1	0.00 3.00 [s]	0.50 [s]	7.5
P7.24	1 M2	2	0.00 3.00 [s]	0.50 [s]	7.5
P7.25	1 M3	3	0.00 3.00 [s]	0.50 [s]	7.5
P7.26	1 M4	4	0.00 3.00 [s]	0.50 [s]	7.5
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]	
P7.34		[0] [1]	0 1	0	
P7.47			0.0 300.0 [%]	100.0 [%]	7.5
P7.48	1	1	0.0 300.0 [%]	150.0 [%]	7.5
P7.49	1	1	0.00 60.00 [s]	60.00 [s]	7.5
P7.50	2	2	0.0 300.0 [%]	200.0 [%]	7.5
P7.51	2	2	0.00 5.00 [s]	5.00 [s]	7.5
P7.55		[0] [1]	0 1	0	
P7.56			0.0 200.0 [%]	120.0 [%]	
P7.57			0.0 12.0 [s]	5 [s]	

P7.59		[0] [1]	0 1	1	
P7.60			0.10 3.00 [s]	0.30 [s]	
P7.64		[0] [1]	0 1	0	7.5
P7.65			-25 150 [V]	50 [V]	7.5
P7.66			-25 150 [V]	100 [V]	7.5
P7.69		[0] [1]	0 1	0	7.5
P7.70			-25 150 [V]	100 [V]	7.5
P7.71	1	[0] [1]	0 1	0	7.5
P7.73		[0] [1]	0 1	0	
P7.74			300 500 [V]	460 [V]	
P7.75			0.0 1000.0 [%]	100.0 [%]	
P7.76			0.00 300.00 [s]	1.00 [s]	
P7.77			0.0 200.0 [%]	15.0 [%]	
P7.94		[0] [1]	0 1	1	
P7.95		AFE	0.0 3000.0 [s]	15.0 [s]	
P7.96			0.00 300.00 [s]	0.00 [s]	

6.7 1 P8

		[0]			
		[1]			
P8.0		[2]DP	0 4	0	
		[3]MODBUS			
		[4]			
P8.3		[0]	0 1	0	7.6
		[1]			
		[0]			
		[1]			
P8.4	2	[2]DP	0 4	0	
		[3]MODBUS			
		[4]			
P8.6			0.00 300.00 [s]	0.00 [s]	7.6
P8.7			0.00 300.00 [s]	0.00 [s]	7.6
P8.8			0.00 300.00 [s]	0.00 [s]	7.11
P8.9		[0]	0 1	0	
		[1]			
		[0]I/O			
		[1] 1			
		[2] 2			
P8.10		[3]	0 6	0	
		[4]DP			
		[5]MODBUS			
		[6]			
		[0]I/O			
		[1] 1			
		[2] 2			
P8.12	2	[3]			
		[4]DP			
		[1 v			

P8.15	1		0.0 300.0 [%]	100.0 [%]	7.6
P8.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	7.6
P8.17	2		0.0 300.0 [%]	200.0 [%]	7.6
P8.18	2	P8.15 P8.17	0.0 300.0 [s]	4.00 [s]	7.6
P8.19	3		0.0 300.0 [%]	240.0 [%]	7.6
P8.20	3	P8.17 P8.19	0.0 300.0 [s]	7.00 [s]	7.6
P8.21	4		0.0 300.0 [%]	300.0 [%]	7.6
P8.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	7.6
P8.23	5		0.0 300.0 [%]	300.0 [%]	7.6
P8.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	7.6
P8.25	6		0.0 300.0 [%]	300.0 [%]	7.6
P8.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	7.6
P8.27	7		0.0 300.0 [%]	300.0 [%]	7.6
P8.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	7.6
P8.29	8		0.0 300.0 [%]	300.0 [%]	7.6
P8.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	7.6
P8.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	7.6
P8.33			0.1 10.0	1.0	7.6

P8.34	1		0.0 300.0 [%]	100.0 [%]	7.6
P8.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	7.6
P8.36	2		0.0 300.0 [%]	200.0 [%]	7.6
P8.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	7.6
P8.38	3		0.0 300.0 [%]	240.0 [%]	7.6
P8.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	7.6
P8.40	4		0.0 300.0 [%]	300.0 [%]	7.6
P8.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	7.6
P8.42	5		0.0 300.0 [%]	300.0 [%]	7.6
P8.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	7.6
P8.44	6		0.0 300.0 [%]	300.0 [%]	7.6
P8.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	7.6
P8.46	7		0.0 300.0 [%]	300.0 [%]	7.6
P8.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	7.6
P8.48	8		0.0 300.0 [%]	300.0 [%]	7.6
P8.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	7.6
P8.53		[0] [1]	0 1	0	7.6
P8.54			0.0 300.0 [%]	0.0 [%]	7.6

P8.55	[0] [1]		0	1	0

6.8 2 P9

P9.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P9.3		[0] [1]	0 1	0	7.6
P9.4	2	[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P9.6			0.00 300.00 [s]	0.00 [s]	7.6
P9.7			0.00 300.00 [s]	0.00 [s]	7.6
P9.8			0.00 300.00 [s]	0.00 [s]	7.11
P9.9		[0] [1]	0 1	0	
P9.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P9.12	2	[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	

P9.15	1		0.0 300.0 [%]	100.0 [%]	7.6
P9.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	7.6
P9.17	2		0.0 300.0 [%]	200.0 [%]	7.6
P9.18	2	P8.15 P8.17	0.0 300.0 [s]	4.00 [s]	7.6
P9.19	3		0.0 300.0 [%]	240.0 [%]	7.6
P9.20	3	P8.17 P8.19	0.0 300.0 [s]	7.00 [s]	7.6
P9.21	4		0.0 300.0 [%]	300.0 [%]	7.6
P9.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	7.6
P9.23	5		0.0 300.0 [%]	300.0 [%]	7.6
P9.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	7.6
P9.25	6		0.0 300.0 [%]	300.0 [%]	7.6
P9.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	7.6
P9.27	7		0.0 300.0 [%]	300.0 [%]	7.6
P9.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	7.6
P9.29	8		0.0 300.0 [%]	300.0 [%]	7.6
P9.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	7.6
P9.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	7.6
P9.33			0.1 10.0	1.0	7.6

P9.34	1		0.0 300.0 [%]	100.0 [%]	7.6
P9.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	7.6
P9.36	2		0.0 300.0 [%]	200.0 [%]	7.6
P9.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	7.6
P9.38	3		0.0 300.0 [%]	240.0 [%]	7.6
P9.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	7.6
P9.40	4		0.0 300.0 [%]	300.0 [%]	7.6
P9.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	7.6
P9.42	5		0.0 300.0 [%]	300.0 [%]	7.6
P9.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	7.6
P9.44	6		0.0 300.0 [%]	300.0 [%]	7.6
P9.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	7.6
P9.46	7		0.0 300.0 [%]	300.0 [%]	7.6
P9.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	7.6
P9.48	8		0.0 300.0 [%]	300.0 [%]	7.6
P9.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	7.6
P9.53		[0] [1]	0 1	0	7.6
P9.54			0.0 300.0 [%]	0.0 [%]	7.6

P9.55		[0] [1]	0 1	0	7.6
P9.56			0.00 300.00 [s]	1.50 [s]	7.6
P9.57		[0] [1]	0 1	1	
P9.58			0.00 300.00 [s]	1.50 [s]	
P9.59			0.00 100.00	0.00	7.11
P9.60			0.00 50.00	0.00	7.11
P9.61		[0] [1]	0 1	0	7.11
P9.62			0 1	0.5	
P9.66			0.00 100.00 [ ]	0.00	7.11
P9.67		0	0.00 50.00	0.00	7.11
P9.68	16		0 65535	0	7.11
P9.69	16		0 65535	0	7.11
P9.70			0 1000	100	7.11
P9.71		[0] [1]	0 1	0	7.11
P9.72			0.00 200.00	60.00	

6.9 3 P10

P10.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P10.3		[0] [1]	0 1	0	7.6
P10.4	2	[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P10.6			0.00 300.00 [s]	0.00 [s]	7.6
P10.7			0.00 300.00 [s]	0.00 [s]	7.6
P10.8			0.00 300.00 [s]	0.00 [s]	7.11
P10.9		[0] [1]	0 1	0	
P10.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P10.12	2	[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	

P10.15	1		0.0 300.0 [%]	100.0 [%]	7.6
P10.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	7.6
P10.17	2		0.0 300.0 [%]	200.0 [%]	7.6
P10.18	2	P8.15 P8.17	0.0 300.0 [s]	4.00 [s]	7.6
P10.19	3		0.0 300.0 [%]	240.0 [%]	7.6
P10.20	3	P8.17 P8.19	0.0 300.0 [s]	7.00 [s]	7.6
P10.21	4		0.0 300.0 [%]	300.0 [%]	7.6
P10.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	7.6
P10.23	5		0.0 300.0 [%]	300.0 [%]	7.6
P10.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	7.6
P10.25	6		0.0 300.0 [%]	300.0 [%]	7.6
P10.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	7.6
P10.27	7		0.0 300.0 [%]	300.0 [%]	7.6
P10.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	7.6
P10.29	8		0.0 300.0 [%]	300.0 [%]	7.6
P10.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	7.6
P10.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	7.6
P10.33			0.1 10.0	1.0	7.6

P10.34	1		0.0 300.0 [%]	100.0 [%]	7.6
P8.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	7.6
P10.36	2		0.0 300.0 [%]	200.0 [%]	7.6
P10.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	7.6
P10.38	3		0.0 300.0 [%]	240.0 [%]	7.6
P10.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	7.6
P10.40	4		0.0 300.0 [%]	300.0 [%]	7.6
P10.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	7.6
P10.42	5		0.0 300.0 [%]	300.0 [%]	7.6
P10.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	7.6
P10.44	6		0.0 300.0 [%]	300.0 [%]	7.6
P10.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	7.6
P10.46	7		0.0 300.0 [%]	300.0 [%]	7.6
P10.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	7.6
P10.48	8		0.0 300.0 [%]	300.0 [%]	7.6
P10.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	7.6
P10.53		[0] [1]	0 1	0	7.6
P10.54			0.0 300.0 [%]	0.0 [%]	7.6

P10.55		[0] [1]	0 1	0	7.6
P10.56			0.00 300.00 [s]	1.50 [s]	7.6
P10.57		[0] [1]	0 1	1	
P10.58			0.00 300.00 [s]	1.50 [s]	
P10.59			0.00 100.00	0.00	7.11
P10.60			0.00 50.00	0.00	7.11
P10.61		[0] [1]	0 1	0	7.11
P10.62			0 1	0.5	
P10.66			0.00 100.00 [ ]	0.00	7.11
P10.67		0	0.00 50.00	0.00	7.11
P10.68	16		0 65535	0	7.11
P10.69	16		0 65535	0	7.11
P10.70			0 1000	100	7.11
P10.71		[0] [1]	0 1	0	7.11
P10.72			0.00 200.00	60.00	

6.10 4 P11

P11.0		[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P11.3		[0] [1]	0 1	0	7.6
P11.4	2	[0] [1] [2]DP [3]MODBUS [4]	0 4	0	
P11.6			0.00 300.00 [s]	0.00 [s]	7.6
P11.7			0.00 300.00 [s]	0.00 [s]	7.6
P11.8			0.00 300.00 [s]	0.00 [s]	7.11
P11.9		[0] [1]	0 1	0	
P11.10		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	
P11.12	2	[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	

P11.15	1		0.0 300.0 [%]	100.0 [%]	7.6
P11.16	1	P8.15	0.0 300.0 [s]	3.00 [s]	7.6
P11.17	2		0.0 300.0 [%]	200.0 [%]	7.6
P11.18	2	P8.15 P8.17	0.0 300.0 [s]	4.00 [s]	7.6
P11.19	3		0.0 300.0 [%]	240.0 [%]	7.6
P11.20	3	P8.17 P8.19	0.0 300.0 [s]	7.00 [s]	7.6
P11.21	4		0.0 300.0 [%]	300.0 [%]	7.6
P11.22	4	P8.19 P8.21	0.0 300.0 [s]	10.00 [s]	7.6
P11.23	5		0.0 300.0 [%]	300.0 [%]	7.6
P11.24	5	P8.21 P8.23	0.0 300.0 [s]	10.00 [s]	7.6
P11.25	6		0.0 300.0 [%]	300.0 [%]	7.6
P11.26	6	P8.23 P8.25	0.0 300.0 [s]	10.00 [s]	7.6
P11.27	7		0.0 300.0 [%]	300.0 [%]	7.6
P11.28	7	P8.25 P8.27	0.0 300.0 [s]	10.00 [s]	7.6
P11.29	8		0.0 300.0 [%]	300.0 [%]	7.6
P11.30	8	P8.27 P8.29	0.0 300.0 [s]	10.00 [s]	7.6
P11.32		[0] [1]PROFIBUS [2]MODBUS [3]	0 3	0	7.6
P11.33			0.1 10.0	1.0	7.6

P11.34	1		0.0 300.0 [%]	100.0 [%]	7.6
P11.35	1	P8.34	0.0 300.0 [s]	3.00 [s]	7.6
P11.36	2		0.0 300.0 [%]	200.0 [%]	7.6
P11.37	2	P8.34 P8.36	0.0 300.0 [s]	4.00 [s]	7.6
P11.38	3		0.0 300.0 [%]	240.0 [%]	7.6
P11.39	3	P8.36 P8.38	0.0 300.0 [s]	7.00 [s]	7.6
P11.40	4		0.0 300.0 [%]	300.0 [%]	7.6
P11.41	4	P8.38 P8.40	0.0 300.0 [s]	10.00 [s]	7.6
P11.42	5		0.0 300.0 [%]	300.0 [%]	7.6
P11.43	5	P8.40 P8.42	0.0 300.0 [s]	10.00 [s]	7.6
P11.44	6		0.0 300.0 [%]	300.0 [%]	7.6
P11.45	6	P8.42 P8.44	0.0 300.0 [s]	10.00 [s]	7.6
P11.46	7		0.0 300.0 [%]	300.0 [%]	7.6
P11.47	7	P8.44 P8.46	0.0 300.0 [s]	10.00 [s]	7.6
P11.48	8		0.0 300.0 [%]	300.0 [%]	7.6
P11.49	8	P8.46 P8.48	0.0 300.0 [s]	10.00 [s]	7.6
P11.53		[0] [1]	0 1	0	7.6
P11.54			0.0 300.0 [%]	0.0 [%]	7.6

P11.55		[0] [1]	0 1	0	7.6
P11.56			0.00 300.00 [s]	1.50 [s]	7.6
P11.57		[0] [1]	0 1	1	
P11.58			0.00 300.00 [s]	1.50 [s]	
P11.59			0.00 100.00	0.00	7.11
P11.60			0.00 50.00	0.00	7.11
P11.61		[0] [1]	0 1	0	7.11
P11.62			0 1	0.5	
P11.66			0.00 100.00 [ ]	0.00	7.11
P11.67		0	0.00 50.00	0.00	7.11
P11.68	16		0 65535	0	7.11
P11.69	16		0 65535	0	7.11
P11.70			0 1000	100	7.11
P11.71		[0] [1]	0 1	0	7.11
P11.72			0.00 200.00	60.00	

6.11 1 P12

P12.0		[0] [1]	0 1	1	7.7

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	
P12.18	FCD LSW_2X		16	0 65535	1000	7.11
P12.19	FCD MSW_2X		16	0 100	2	7.11
P12.20	FCD _2X	m/min	m/min	0.0 100.0	5.0	7.11
P12.21				0 1	0	
P12.22				0.0 20.0 [%]	2.0 [%]	7.7
P12.23				0.0 20.0 [%]	0.0 [%]	7.7
P12.24				0.0 200.0 [%]	30.0 [%]	7.7

P12.25		0.0 200.0 [%]	20.0 [%]	7.7
P12.26		0.00 2.00 [s]	0.00 [s]	7.7
P12.27		0.00 2.00 [s]	0.00 [s]	7.7
P12.28		0.00 2.00 [s]	0.07 [s]	7.7
P12.29		0.00 2.00 [s]	0.07 [s]	7.7
P12.30	@	0 1	0	
P12.31	@	0 2	0.3	
P12.32		0.0 20.0 [%]	0.0 [%]	7.7
P12.33		0.0 20.0 [%]	0.0 [%]	7.7
P12.34				

P12.41			0.00 100.00 [s]	0.10 [s]	7.11
P12.42			0 3000 [s]	3 [s]	7.11
P12.43			0.0 50.0 [%]	20.0 [%]	7.11
P12.44			0.00 5.00 [s]	0.20 [s]	7.11
P12.45			20.0 100.0 [%]	25.0 [%]	7.11
P12.46			0.00 5.00 [s]	0.10 [s]	7.11
P12.47			0 30.0 [%]	10.0 [%]	7.11
P12.48			0.00 5.00 [s]	0.00 [s]	7.11
P12.49			0.00~1.00	0.1	7.11
P12.50			0.0 10.0 [%]	10.0 [%]	7.11

6.12 2 P13

P13.0		[0] [1]	0 1	1	7.7
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	
P13.18	FCD LSW_2X	16	0 65535	1000	7.11
P13.19	FCD MSW_2X	16	0 100	2	7.11
P13.20	FCD m/min _2X	m/min	0.0 100.0	5.0	7.11
P13.21			0 1	0	
P13.22			0.0 20.0 [%]	2.0 [%]	7.7
P13.23			0.0 20.0 [%]	0.0 [%]	7.7
P13.24			0.0 200.0 [%]	30.0 [%]	7.7
P13.25			0.0 200.0 [%]	20.0 [%]	7.7
P13.26			0.00 2.00 [s]	0.00 [s]	7.7
P13.27			0.00 2.00 [s]	0.00 [s]	7.7
P13.28			0.00 2.00 [s]	0.07 [s]	7.7
P13.29			0.00 2.00 [s]	0.07 [s]	7.7

P13.30	@		0 1	0	
P13.31	@		0 2	0.3	
P13.32			0.0 20.0 [%]	0.0 [%]	7.7
P13.33			0.0 20.0 [%]	0.0 [%]	7.7
P13.34			0.00 2.00 [s]	0.00 [s]	7.7
P12.35			0.00 2.00 [s]	0.00 [s]	7.7
P13.36			0.00 2.00 [s]	0.50 [s]	7.7
P13.37			0.00 2.00 [s]	0.50 [s]	7.7
P13.38		[0] [1]	0 1	0	7.11
P13.39		[0] [1]	0 1	0	
P13.40			0.0 100.0 [%]	10.0 [%]	7.11
P13.41			0.00 100.00 [s]	0.10 [s]	7.11
P13.42			0 3000 [s]	3 [s]	7.11
P13.43			0.0 50.0 [%]	20.0 [%]	7.11
P13.44			0.00 5.00 [s]	0.20 [s]	7.11
P13.45			20.0 100.0 [%]	25.0 [%]	7.11

P13.46			0.00 5.00 [s]	0.10 [s]	7.11
P13.47			0 30.0 [%]	10.0 [%]	7.11
P13.48			0.00 5.00 [s]	0.00 [s]	7.11
P13.49			0.00~1.00	0.1	7.11
P13.50			0.0 10.0 [%]	10.0 [%]	7.11

6.13 3 P14

P14.0		[0] [1]	0 1	1	7.7
P14.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P14.2	1		0.0 3000.0	10.0	
P14.3	2		0.0 3000.0	20.0	
P14.4	3		0.0 3000.0	35.0	
P14.5	4		0.0 3000.0	50.0	
P14.6	5		0.0 3000.0	50.0	
P14.7	6		0.0 3000.0	50.0	

P14.18	FCD LSW_2X	16	0 65535	1000	7.11
P14.19	FCD MSW_2X	16	0 100	2	7.11
P14.20	FCD m/min _2X	m/min	0.0 100.0	5.0	7.11
P14.21			0 1	0	
P14.22			0.0 20.0 [%]	2.0 [%]	7.7
P14.23			0.0 20.0 [%]	0.0 [%]	7.7
P14.24			0.0 200.0 [%]	30.0 [%]	7.7
P14.25			0.0 200.0 [%]	20.0 [%]	7.7
P14.26			0.00 2.00 [s]	0.00 [s]	7.7
P14.27			0.00 2.00 [s]	0.00 [s]	7.7
P14.28			0.00 2.00 [s]	0.07 [s]	7.7
P14.29			0.00 2.00 [s]	0.07 [s]	7.7
P14.30	@		0 1	0	
P14.31	@		0 2	0.3	
P14.32			0.0 20.0 [%]	0.0 [%]	7.7
P14.33			0.0 20.0 [%]	0.0 [%]	7.7

P14.34			0.00 2.00 [s]	0.00 [s]	7.7
P14.35			0.00 2.00 [s]	0.00 [s]	7.7
P14.36			0.00 2.00 [s]	0.50 [s]	7.7
P14.37			0.00 2.00 [s]	0.50 [s]	7.7
P14.38		[0] [1]	0 1	0	7.11
P14.39		[0] [1]	0 1	0	
P14.40			0.0 100.0 [%]	10.0 [%]	7.11
P14.41			0.00 100.00 [s]	0.10 [s]	7.11
P14.42			0 3000 [s]	3 [s]	7.11
P14.43			0.0 50.0 [%]	20.0 [%]	7.11
P14.44			0.00 5.00 [s]	0.20 [s]	7.11
P14.45			20.0 100.0 [%]	25.0 [%]	7.11
P14.46			0.00 5.00 [s]	0.10 [s]	7.11
P14.47			0 30.0 [%]	10.0 [%]	7.11
P14.48			0.00 5.00 [s]	0.00 [s]	7.11
P14.49			0.00~1.00	0.1	7.11
P14.50			0.0 10.0 [%]	10.0 [%]	7.11

6.14 4 P15

P15.0		[0] [1]	0 1	1	7.7
P15.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P15.2	1		0.0 3000.0	10.0	
P15.3	2		0.0 3000.0	20.0	
P15.4	3		0.0 3000.0	35.0	
P15.5	4		0.0 3000.0	50.0	
P15.6	5		0.0 3000.0	50.0	
P15.7	6		0.0 3000.0	50.0	
P15.8	7		0.0 3000.0	50.0	
P15.9	8		0.0 3000.0	50.0	
P15.10	9		0.0 3000.0	50.0	
P15.11	10		0.0 3000.0	50.0	
P15.12	11		0.0 3000.0	50.0	
P15.13	12		0.0 3000.0	50.0	
P15.14	13		0.0 3000.0	50.0	
P15.15	14		0.0 3000.0	50.0	
P15.16	15		0.0 3000.0	50.0	
P15.17	16		0.0 3000.0	50.0	
P15.18	FCD LSW_2X	16	0 65535	1000	7.11
P15.19	FCD MSW_2X	16	0 100	2	7.11
P15.20	FCD m/min _2X	m/min	0.0 100.0	5.0	7.11
P15.21			0 1	0	

P15.22			0.0 20.0 [%]	2.0 [%]	7.7
P15.23			0.0 20.0 [%]	0.0 [%]	7.7
P15.24			0.0 200.0 [%]	30.0 [%]	7.7
P15.25			0.0 200.0 [%]	20.0 [%]	7.7
P15.26			0.00 2.00 [s]	0.00 [s]	7.7
P15.27			0.00 2.00 [s]	0.00 [s]	7.7
P15.28			0.00 2.00 [s]	0.07 [s]	7.7
P15.29			0.00 2.00 [s]	0.07 [s]	7.7
P15.30	@		0 1	0	
P15.31	@		0 2	0.3	
P15.32			0.0 20.0 [%]	0.0 [%]	7.7
P15.33			0.0 20.0 [%]	0.0 [%]	7.7
P15.34			0.00 2.00 [s]	0.00 [s]	7.7
P15.35			0.00 2.00 [s]	0.00 [s]	7.7
P15.36			0.00 2.00 [s]	0.50 [s]	7.7
P15.37			0.00 2.00 [s]	0.50 [s]	7.7
P15.38		[0] [1]	0 1	0	7.11

P15.39		[0] [1]	0 1	0	
P15.40			0.0 100.0 [%]	10.0 [%]	7.11
P15.41			0.00 100.00 [s]	0.10 [s]	7.11
P15.42			0 3000 [s]	3 [s]	7.11
P15.43			0.0 50.0 [%]	20.0 [%]	7.11
P15.44			0.00 5.00 [s]	0.20 [s]	7.11
P15.45			20.0 100.0 [%]	25.0 [%]	7.11
P15.46			0.00 5.00 [s]	0.10 [s]	7.11
P15.47			0 30.0 [%]	10.0 [%]	7.11
P15.48			0.00 5.00 [s]	0.00 [s]	7.11
P15.49			0.00~1.00	0.1	7.11
P15.50			0.0 10.0 [%]	10.0 [%]	7.11

6.15 1 V/F P16

P16.0			320 460 [V]	380 [V]	
P16.2			0.0 4000.0 [kW]	[kW]	
P16.3			320 460 [V]	380 [V]	

P16.4			0.0 6500.0 [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]	7.8
P16.9			0 7200 [rpm]	1500 [rpm]	7.8
P16.11		[0]V/F [1] [2]	0 2	0	
P16.12			1.00 10.00 [kHz]	3.00 [kHz]	7.8
P16.14	V/F	[0] V/F [1] V/F [2]	0 2	0	7.8
P16.15		[0] [1]	0 1	0	7.8
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] [1]	0 1	0	
P16.22			0.00 100.00 [s]	0.00 [s]	7.8
P16.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P16.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P16.25			0.0 120.0 [%]	100.0 [%]	
P16.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	7.8
P16.27			0.0 200.0 [%]	100.0 [%]	7.8

P16.30			0.0 100.0 [%]	0.0 [%]	7.8
P16.33	V/F	V/F	0 6	2	7.8
P16.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P16.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P16.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P16.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P16.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P16.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P16.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P16.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P16.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P16.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P16.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P16.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P16.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P16.50			0.00 300.00 [s]	0.00 [s]	7.8
P16.51			0.0 150.0 [%]	70.0 [%]	7.8
P16.52			0.00 5.00 [Hz]	0.00 [Hz]	7.8
P16.54			0.00 300.00 [s]	0.00 [s]	7.8

P16.55			0.0 150.0 [%]	75.0 [%]	7.8
P16.56			0.00 5.00 [Hz]	0.00 [Hz]	7.8
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 [%]	7.8
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 [%]	

6.16 2 V/F P17

P17.0			320 460 [V]	380 [V]	
P17.2			0.0 4000.0 [kW]	[kW]	
P17.3			320 460 [V]	380 [V]	

P17.30
t

P17.55			0.0 150.0 [%]	75.0 [%]	7.8
P17.56			0.00 5.00 [Hz]	0.00 [Hz]	7.8
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 [%]	7.8
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 [%]	

6.17 3 V/F P18

P18.0			320 460 [V]	380 [V]	
P18.2			0.0 4000.0 [kW]	[kW]	
P18.3			320 460 [V]	380 [V]	

P18.4		0.0 6500.0 [A]	[A]	
P18.5		0.0 300.0 [Hz]	50.0 [Hz]	
P18.6		0 6000 [rpm]	1465 [rpm]	
P18.7		2 12 [pole]	4 [pole]	7.8
P18.9		0 7200 [rpm]	1500 [rpm]	7.8
P18.11	[0]V/F [1] [2]	0 2	0	
P18.12		1.00		

P18.30			0.0 100.0 [%]	0.0 [%]	7.8
P18.33	V/F	V/F	0 6	2	7.8
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 [%]	
P18.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P18.50			0.00 300.00 [s]	0.00 [s]	7.8
P18.51			0.0 150.0 [%]	70.0 [%]	7.8
P18.52			0.00 5.00 [Hz]	0.00 [Hz]	7.8
P18.54			0.00 300.00 [s]	0.00 [s]	7.8

P18.55			0.0 150.0 [%]	75.0 [%]	7.8
P18.56			0.00 5.00 [Hz]	0.00 [Hz]	7.8
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 [%]	7.8
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 [%]	

6.18 4 V/F P19

P19.0			320 460 [V]	380 [V]	
P19.2			0.0 4000.0 [kW]	[kW]	
P19.3			320 460 [V]	380 [V]	

P19.4			0.0 6500.0 [A]	[A]	
P19.5			0.0 300.0 [Hz]	50.0 [Hz]	
P19.6			0 6000 [rpm]	1465 [rpm]	
P19.7			2 12 [pole]	4 [pole]	7.8
P19.9			0 7200 [rpm]	1500 [rpm]	7.8
P19.11		[0]V/F [1] [2]	0 2	0	
P19.12			1.00 10.00 [kHz]	3.00 [kHz]	7.8
P19.14	V/F	[0] V/F [1] V/F [2]	0 2	0	7.8
P19.15		[0] [1]	0 1	0	7.8
P19.16			2 500 [ms]	500 [ms]	
P19.17	V/F	[0] [1]	0 1	0	
P19.18			10 1000 [ms]	200 [ms]	
P19.19		[0] [1]	0 1	0	
P19.22			0.00 100.00 [s]	0.00 [s]	7.8
P19.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P19.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P19.25			0.0 120.0 [%]	100.0 [%]	
P19.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	7.8
P19.27			0.0 200.0 [%]	100.0 [%]	7.8

P19.30			0.0 100.0 [%]	0.0 [%]	7.8
P19.33	V/F	V/F	0 6	2	7.8
P19.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P19.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P19.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P19.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P19.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P19.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P19.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P19.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P19.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P19.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P19.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P19.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P19.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P19.50			0.00 300.00 [s]	0.00 [s]	7.8
P19.51			0.0 150.0 [%]	70.0 [%]	7.8
P19.52			0.00 5.00 [Hz]	0.00 [Hz]	7.8
P19.54			0.00 300.00 [s]	0.00 [s]	7.8

P19.55			0.0 150.0 [%]	75.0 [%]	7.8
P19.56			0.00 5.00 [Hz]	0.00 [Hz]	7.8
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 [%]	7.8
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 [%]	

6.19 1 P20

P20.0		[0] [1]	0 1	0	7.9

P20.1		[0] [1] 1 [2] 2 [3] [4] P20.3 [5]DP [6]MODBUS [7]	0 7	0	7.9
P20.2			0 7	0	
P20.3			-300.0 300.0 [%]	0.0 [%]	7.9
P20.5			0 1000 [ms]	0 [ms]	
P20.6			0.0 200.0 [%]	100.0 [%]	7.9
P20.7		[0] [1] P20.8 P20.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	7.9
P20.8		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	7.9
P20.9		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	7.9
P20.11			0 1000 [ms]	0 [ms]	
P20.13			20.0 500.0 [ms]	100.0 [ms]	7.9
P20.14		1	0 60000	1024	
P20.15		[0] [1]	0 1	0	7.9
P20.16			0.0 300.0 [%]	100.0 [%]	
P20.17			0.0 300.0 [%]	100.0 [%]	

P20.18		0.0 300.0 [%]	0.0 [%]	
P20.19		0.0 300.0 [%]	0.0 [%]	
P20.20	[0] [1]	0 1	0	
P20.21	[0] [1]	0 1	0	
P20.22		0.0 300.0 [%]	160.0 [%]	
P20.23		0.0 200.0 [%]	20.0 [%]	
P20.24		0.0 300.0 [%]	100.0 [%]	
P20.25		0.0 200.0 [%]	100.0 [%]	
P20.26		0.0 1000.0 [%]	0.0 [%]	7.9
P20.27		0.00 15.00 [%]	2.00 [%]	7.9
P20.28	[0] P20.16 P20.17 [1] [2] [3]DP	0 3	0	

P20.37			0.0 150.0 [%]	100.0 [%]	7.9
P20.38			0.0 100.0 [%]	25.0 [%]	7.9
P20.39			0.0 120.0 [%]	100.0 [%]	7.9
P20.40			0.0 150.0 [%]	100.0 [%]	7.9
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 [%]	7.9
P20.56			0.0 1000.0 [%]	100.0 [%]	7.9

P20.57			0.0 100.0 [%]	100.0 [%]	
P20.58			0.0 100.0 [%]	100.0 [%]	1 00%
P20.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	7.9
P20.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	7.9
P20.62			0.0 1000.0 [%]	100.0 [%]	7.9
P20.63			0.0 1000.0 [%]	100.0 [%]	7.9
P20.64	2	2	0.0 100.0 [%]	0.0 [%]	7.9
P20.65	2	2	30 2000.0 ms	50 ms	
P20.98		( )	0.01 300.00 [s]	0.75 [s]	
P20.99			0.00 10.00 [%]	0.00 [%]	

6.20 2 P21

P21.0		[0] [1]	0 1	0	7.9

[0]

[1] 1

[2] 2

[3]

[4]

[5]DP

[6]MODBUS

[7]

7

P21.1

0 7 0

P20.3

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 [%]	7.9
P21.27			0.00 15.00 [%]	2.00 [%]	7.9
P21.28		[0] P20.16 P20.17 [1] [2] [3]DP	0 3	0	
P21.30		[0] P20.31 P20.32 [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	7.9
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 [%]	7.9
P21.38			0.0 100.0 [%]	25.0 [%]	7.9
P21.39			0.0 120.0 [%]	100.0 [%]	7.9
P21.40			0.0 150.0 [%]	100.0 [%]	7.9
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 [%]	7.9
P21.56			0.0 1000.0 [%]	100.0 [%]	7.9

P21.57			0.0 100.0 [%]	100.0 [%]	
P21.58			0.0 100.0 [%]	100.0 [%]	100%
P21.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	7.9
P21.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	7.9
P21.62			0.0 1000.0 [%]	100.0 [%]	7.9
P21.63			0.0 1000.0 [%]	100.0 [%]	7.9
P21.64	2	2	0.0 100.0 [%]	0.0 [%]	7.9
P21.65	2	2	30 2000.0 ms	50 ms	
P21.98		( )	0.01 300.00 [s]	0.75 [s]	
P21.99			0.00 10.00 [%]	0.00 [%]	

6.21 3 P22

P22.17			0.0 300.0 [%]	100.0 [%]	
P22.18			0.0 300.0 [%]	0.0 [%]	
P22.19			0.0 300.0 [%]	0.0 [%]	
P22.20		[0] [1]	0 1	0	
P22.21		[0] [1]	0 1	0	
P22.22			0.0 300.0 [%]	160.0 [%]	
P22.23			0.0 200.0 [%]	20.0 [%]	
P22.24			0.0 300.0 [%]	100.0 [%]	
P22.25			0.0 200.0 [%]	100.0 [%]	
P22.26			0.0 1000.0 [%]	0.0 [%]	7.9
P22.27			0.00 15.00 [%]	2.00 [%]	7.9
P22.28		[0] P20.16 P20.17 [1] [2] [3]DP	0 3	0	
P22.30		[0] P20.31 P20.32 [1] 1 [2] 2 [3]	0 3	0	
P22.31			0.0 100.0 [%]	5.0 [%]	
P22.32			0.0 100.0 [%]	5.0 [%]	
P22.34		[0] [1]	0 1	0	7.9
P22.35			0.0 100.0 [s]	0.0 [s]	

P22.36			50.0 150.0 [%]	110.0 [%]	
P22.37			0.0 150.0 [%]	100.0 [%]	7.9
P22.38			0.0 100.0 [%]	25.0 [%]	7.9
P22.39			0.0 120.0 [%]	100.0 [%]	7.9
P22.40			0.0 150.0 [%]	100.0 [%]	7.9
P22.41			0.0 150.0 [%]	135.0 [%]	
P22.42		[0] [1]	0 1	1	
P22.43			25 1000 [ms]	75 [ms]	
P22.44			25 1000 [ms]	250 [ms]	
P22.45			0.0 100.0 [%]	22.0 [%]	
P22.46			0.0 100.0 [%]	18.0 [%]	
P22.47			0.0 200.0 [%]	92.0 [%]	
P22.48			0.0 200.0 [%]	87.0 [%]	
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 [%]	7.9
P22.56			0.0 1000.0 [%]	100.0 [%]	7.9

P22.57			0.0 100.0 [%]	100.0 [%]	
P22.58			0.0 100.0 [%]	100.0 [%]	100%
P22.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	7.9
P22.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	7.9
P22.62			0.0 1000.0 [%]	100.0 [%]	7.9
P22.63			0.0 1000.0 [%]	100.0 [%]	7.9
P22.64	2	2	0.0 100.0 [%]	0.0 [%]	7.9
P22.65	2	2	30 2000.0 ms	50 ms	
P22.98		( )	0.01 300.00 [s]	0.75 [s]	
P22.99			0.00 10.00 [%]	0.00 [%]	

6.22 4 P23

P23.0		[0] [1]	0 1	0	7.9
P23.1		[0] [1] 1 [2] 2 [3] [4] P20.3 [5]DP [6]MODBUS [7]	0 7	0	7.9
P23.2			0 7	0	
P23.3			-300.0 300.0 [%]	0.0 [%]	7.9
P23.5			0 1000 [ms]	0 [ms]	
P23.6			0.0 200.0 [%]	100.0 [%]	7.9
P23.7		[0] [1] P20.8 P20.9 [2] 1 [3] 2 [4] [5]DP [6]MODBUS [7]	0 7	0	7.9
P23.8		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	7.9
P23.9		P20.7 [1]	0.0 300.0 [%]	200.0 [%]	7.9
P23.11			0 1000 [ms]	0 [ms]	
P23.13			20.0 500.0 [ms]	100.0 [ms]	7.9
P23.14		1	0 60000	1024	

P23.15		[0] [1]	0 1	0	7.9
P23.16			0.0 300.0 [%]	100.0 [%]	
P23.17			0.0 300.0 [%]	100.0 [%]	
P23.18			0.0 300.0 [%]	0.0 [%]	
P23.19			0.0 300.0 [%]	0.0 [%]	
P23.20		[0] [1]	0 1	0	
P23.21		[0] [1]	0 1	0	
P23.22			0.0 300.0 [%]	160.0 [%]	
P23.23			0.0 200.0 [%]	20.0 [%]	
P23.24			0.0 300.0 [%]	100.0 [%]	
P23.25			0.0 200.0 [%]	100.0 [%]	
P23.26			0.0 1000.0 [%]	0.0 [%]	7.9
P23.27			0.00 15.00 [%]	2.00 [%]	7.9
P23.28		[0] P20.16 P20.17 [1] [2] [3]DP	0 3	0	
P23.30		[0] P20.31 P20.32 [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	7.9
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 [%]	7.9
P23.38		0.0 100.0 [%]	25.0 [%]	7.9
P23.39		0.0 120.0 [%]	100.0 [%]	7.9
P23.40		0.0 150.0 [%]	100.0 [%]	7.9
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 [%]	7.9
P23.56			0.0 1000.0 [%]	100.0 [%]	7.9
P23.57			0.0 100.0 [%]	100.0 [%]	
P23.58			0.0 100.0 [%]	100.0 [%]	100%
P23.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	7.9
P23.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	7.9
P23.62			0.0 1000.0 [%]	100.0 [%]	7.9
P23.63			0.0 1000.0 [%]	100.0 [%]	7.9
P23.64	2	2	0.0 100.0 [%]	0.0 [%]	7.9
P23.65	2	2	30 2000.0 ms	50 ms	
P23.98		( )	0.01 300.00 [s]	0.75 [s]	
P23.99			0.00 10.00 [%]	0.00 [%]	

6.24 CAN P31

P31.0	CAN	[0] [1]	0 1	0	
P31.1	Canopen ID		1 127	1	
P31.2		[0] 20 Kbps [1] 50 Kbps [2] 125 Kbps [3] 250 Kbps [4] 500 Kbps [5] 800 Kbps [6] 1000 Kbps	0 6	5	
P31.3	Can		0 60 [s]	0 [s]	
P31.4	Can	[0] [1] [2] [3]	0 3	0	

6.25 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				

P33.15	[W1]	7-2	0 37	0	
P33.16	[W1]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.17	[W2]	7-2	0 37	0	
P33.18	[W2]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.19	[W3]	7-2	0 37	0	
P33.20	[W3]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.21	[W4]	7-2	0 37	1	
P33.22	[W4]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.23	[W5]	7-2	0 37	18	
P33.24	[W5]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	2	
P33.25	[W6]	7-2	0 37	21	
P33.26	[W6]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	
P33.27	[W7]	7-2	0 37	22	

P33.28	[W7]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	
P33.29	[W8]	7-2	0 37	23	
P33.30	[W8]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	1	
P33.31	[W9]	7-2	0 37	0	
P33.32	[W9]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.33	[W10]	7-2	0 37	0	
P33.34	[W10]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.35	[W11]	7-2	0 37	0	
P33.36	[W11]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.37	[W12]	7-2	0 37	0	
P33.38	[W12]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.39	[W13]	7-2	0 37	0	
P33.40	[W13]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	

P33.41	[W14]	7-2	0 37	0	
P33.42	[W14]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.43	[W15]	7-2	0 37	0	
P33.44	[W15]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0	
P33.45	[W0]	7-3	0 48	0	
P33.46	[W0]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.47	[W1]	7-3	0 48	0	
P33.48	[W1]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.49	[W2]	7-3	0 48	0	
P33.50	[W2]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.51	[W3]	7-3	0 48	0	

P33.52	[W3]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.53	[W4]	7-3	0 48	1	
P33.54	[W4]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.55	[W5]	7-3	0 48	19	
P33.56	[W5]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	2	
P33.57	[W6]	7-3	0 48	26	
P33.58	[W6]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	6	
P33.59	[W7]	7-3	0 48	30	

P33.60	[W7]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	1	
P33.61	[W8]	7-3	0 48	14	
P33.62	[W8]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.63	[W9]	7-3	0 48	13	
P33.64	[W9]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.65	[W10]	7-3	0 48	40	
P33.66	[W10]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	6	
P33.67	[W11]	7-3	0 48	0	

P33.68	[W11]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.69	[W12]	7-3	0 48	0	
P33.70	[W12]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.71	[W13]	7-3	0 48	0	
P33.72	[W13]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.73	[W14]	7-3	0 48	0	
P33.74	[W14]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	
P33.75	[W15]	7-3	0 48	0	

P33.76	[W15]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 7	0	

7-2

0	
1	0
2	1
3	2
4	3
5	4
6	[32]
7	[32]
8	32_MSW
9	32_LSW
10	
11	
12	0 @32bit
13	1 @32bit
14	2 @32bit
15	3 @32bit
16	4 @32bit
17	5 @32bit
18	[Hz]
19	[rpm]
20	[%]
21	[%]
22	[%]
23	[Hz]

24	
25	
26	1[%]
27	2[%]
28	
29	
30 37	SET_W12 19

7-3

0	
1	0
2	1
3	2
4	3
5	4
6	5
7	0 @32bit
8	1 @32bit
9	2 @32bit
10	3 @32bit
11	4 @32bit
12	5 @32bit
13	[32]
14	[32]
15	32bit_MSW
16	32bit_LSW
17	
18	
19	
20	[rpm]

21	[rpm]
22	
23	
24	
25	
26	
27	A
28	B
29	C
30	
31	
32	
33	1
34	2
35	
36	
37	
38	
39	
40	
41	Mwh
42	Kwh
43	Mwh
44	Kwh
45 48	AW26 29

7

7.1

1

P12.0 [0] [1]

A. [0]

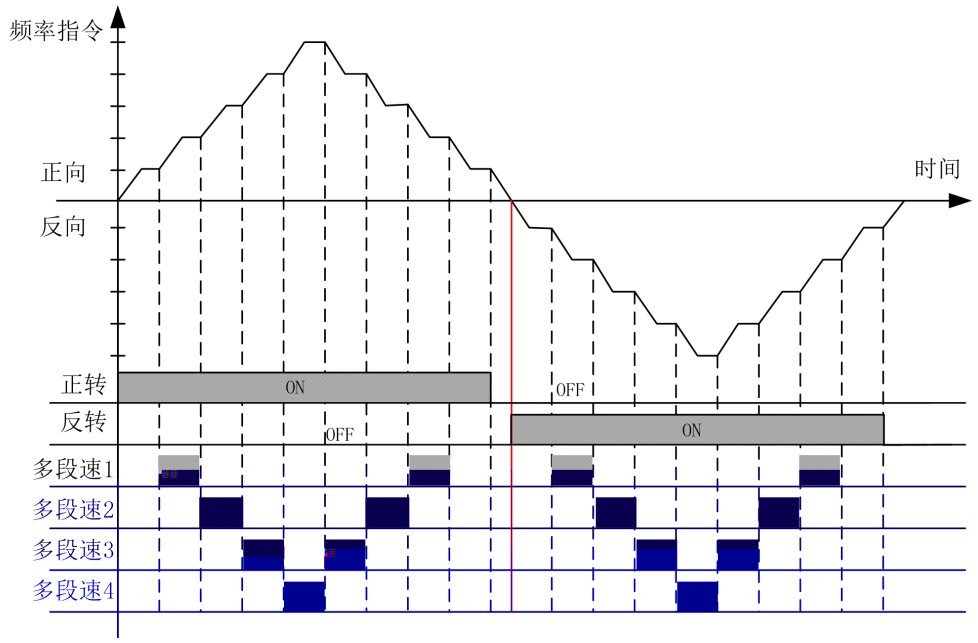
[1] [2] ---1

[6] 1 0 ---2

[7] 2 1 ---3

[8] 3 2 ---4

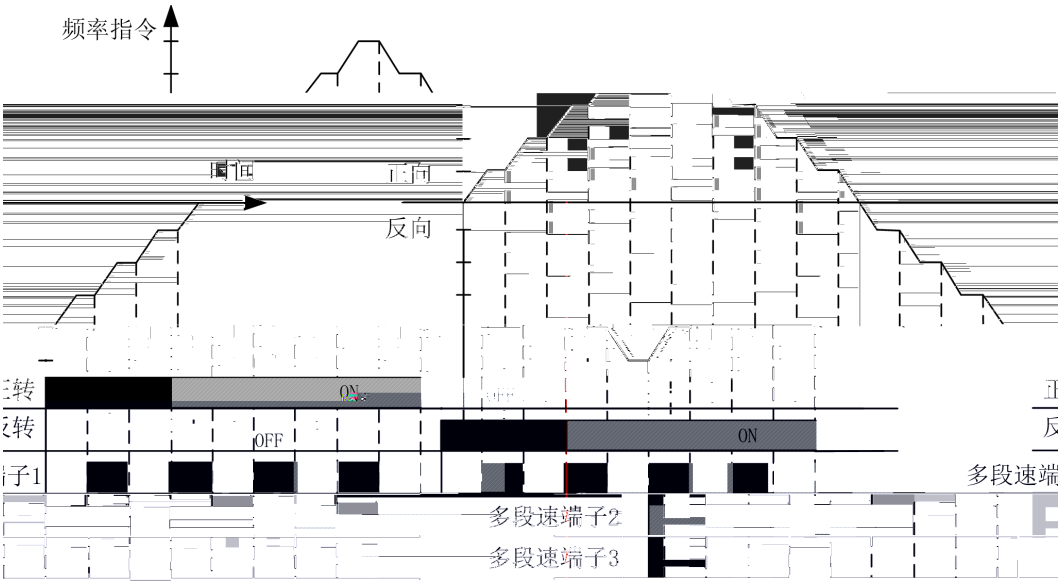
[9] 4 3 ---5



B. [1]

4 16 (8421)

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



2

DI 22 “ ”

10Hz E106 “ 1 ”

10Hz 2s E107

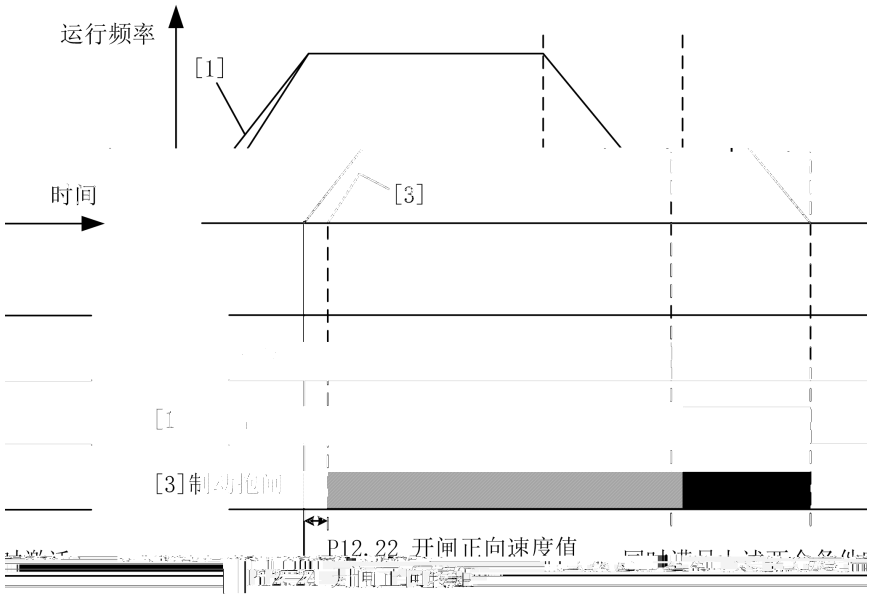
“ 2 ”

7.2

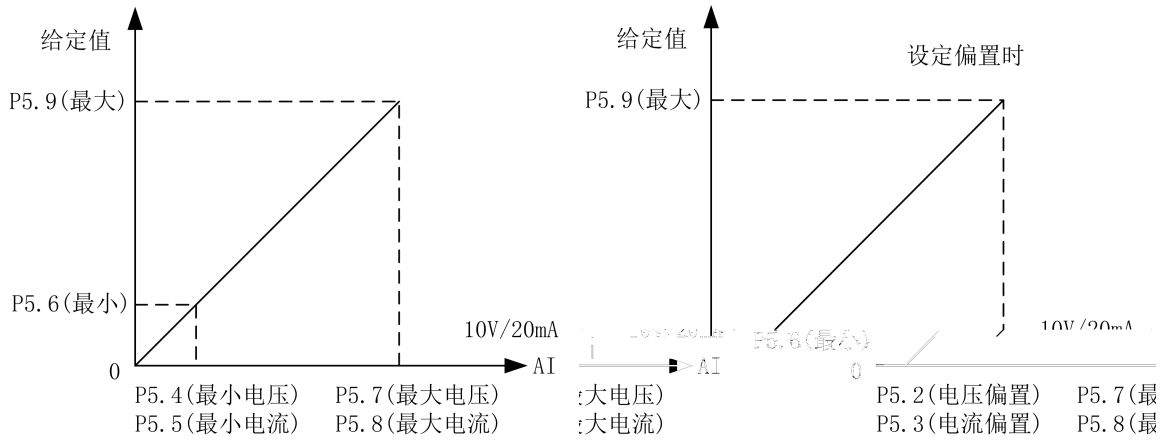
/

[1] [3] [3]

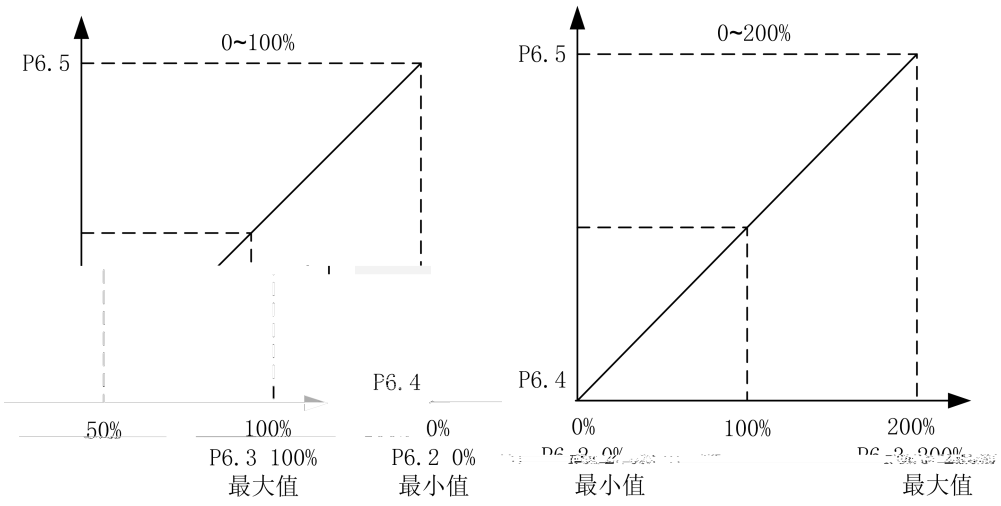
[1] [3]


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

7.3


给定值
P5.9(最大)
P5.6(最小)
0
10V/20mA
AI
P5.4(最小电压)
P5.5(最小电流)
P5.7(最大电压)
P5.8(最大电流)
给定值
设定偏置时
P5.9(最大)
0
AI
P5.2(电压偏置)
P5.3(电流偏置)
P5.7(最
P5.8(最

7.4



7.5

1

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

2

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

3

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

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

4

P7.12 P7.13 P7.12

P7.13

5

P7.14 IGBT P7.14

P7.15 IGBT P7.15

6

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

P7.31 100% P7.32

P7.31 P7.32

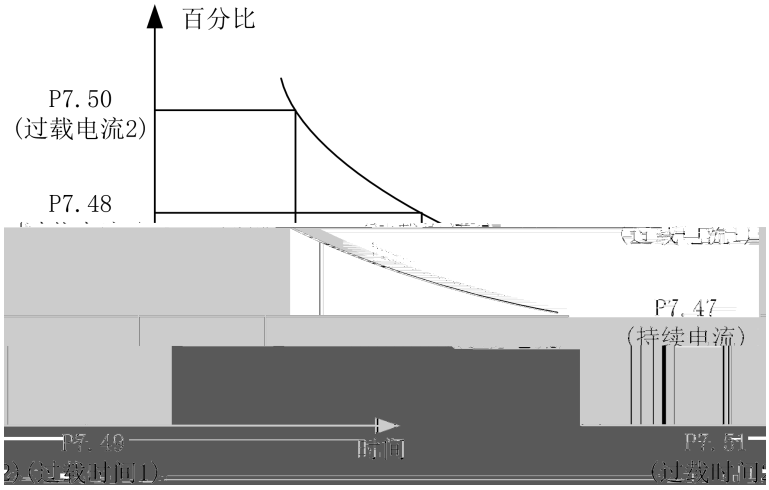
9

P7.33

P7.33

10

P7.48 P7.50

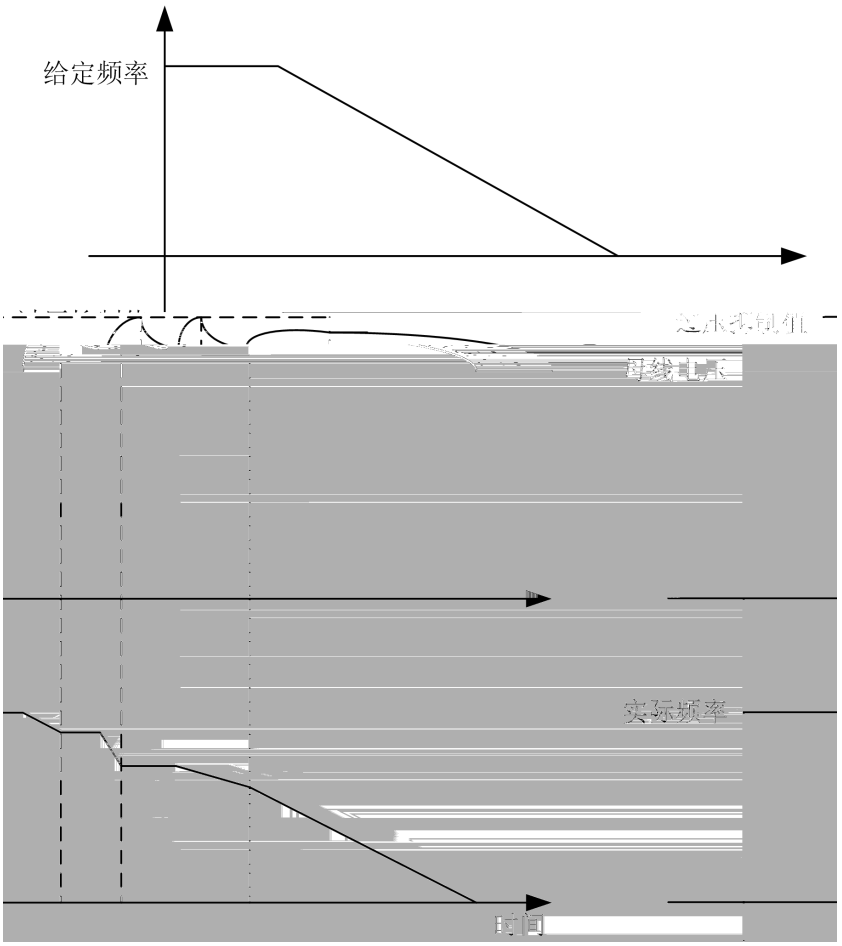


11

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

0 P16.0 380V P7.70 100V

711V = √ + +



P7.71 P7.71

7.6

1

P8.3

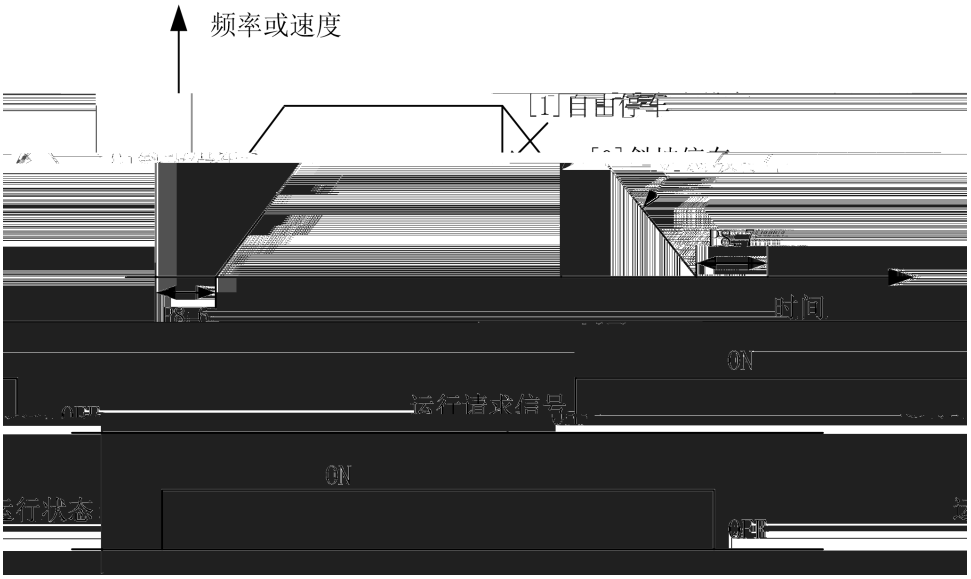
[0]

[1]

P8.6 P8.6

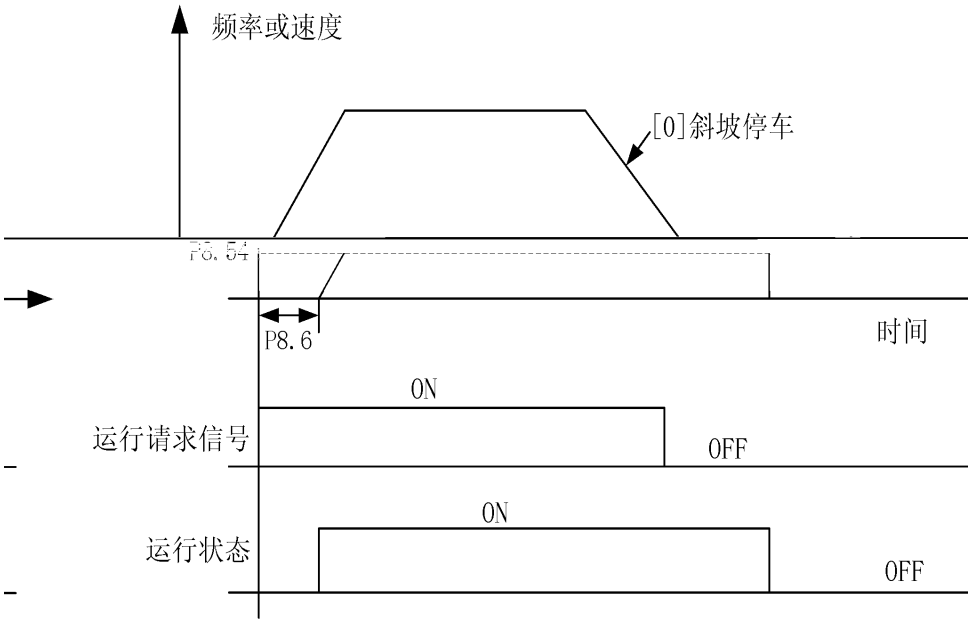
P8.7

mĚ ôz



P8.54 0 P8.3 [0]

P8.54

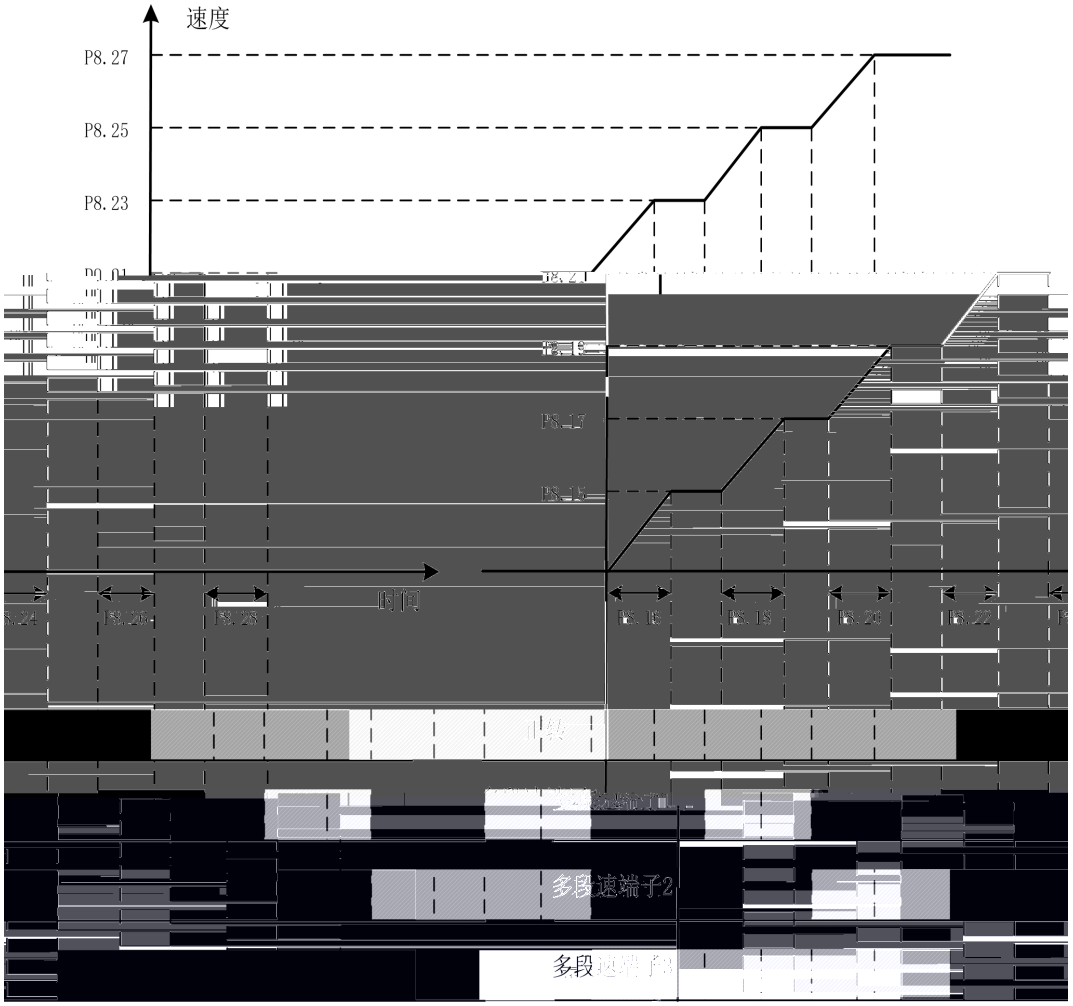


2

P8.14

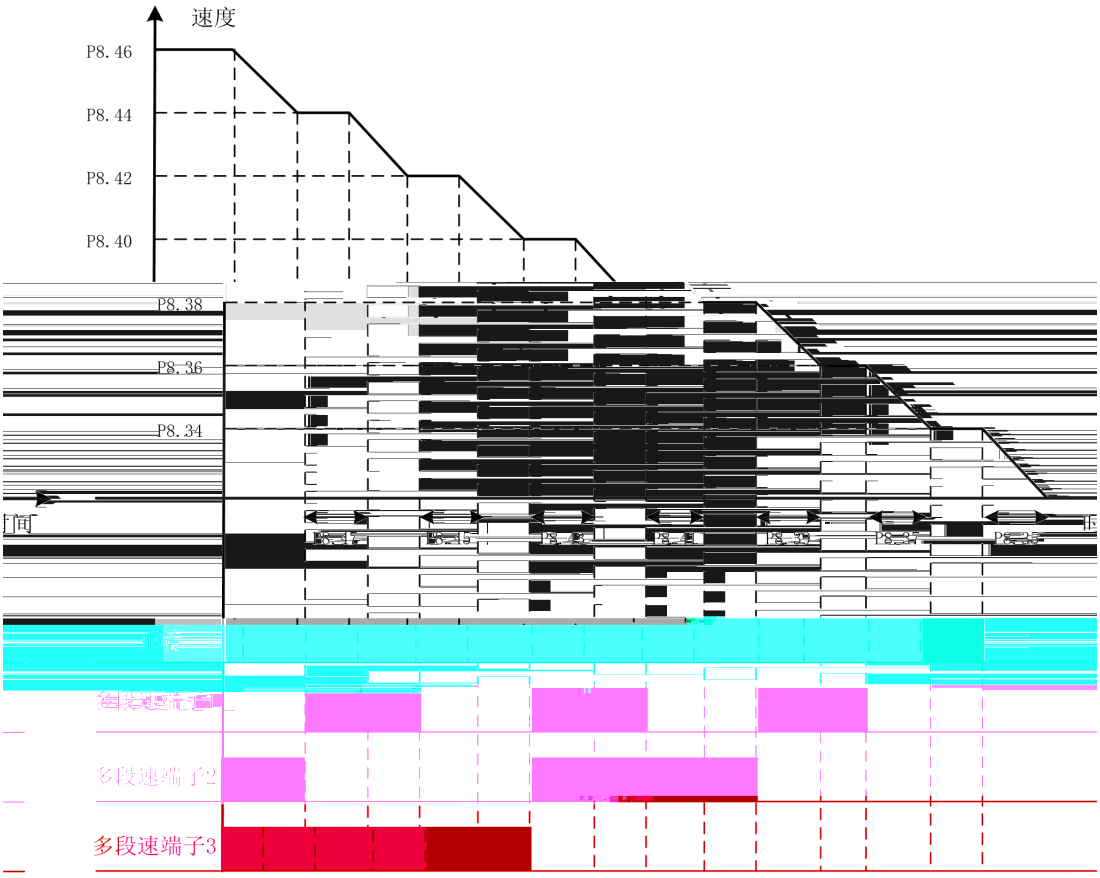
P8.14 P8.33

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 P8.32

1 =P8.33 × P8.35 × (× 0.001)

4

P8.53 [0] P8.55 [1]

P8.56 P8.53 [1] P8.55 [1]

P8.56

7.7

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]

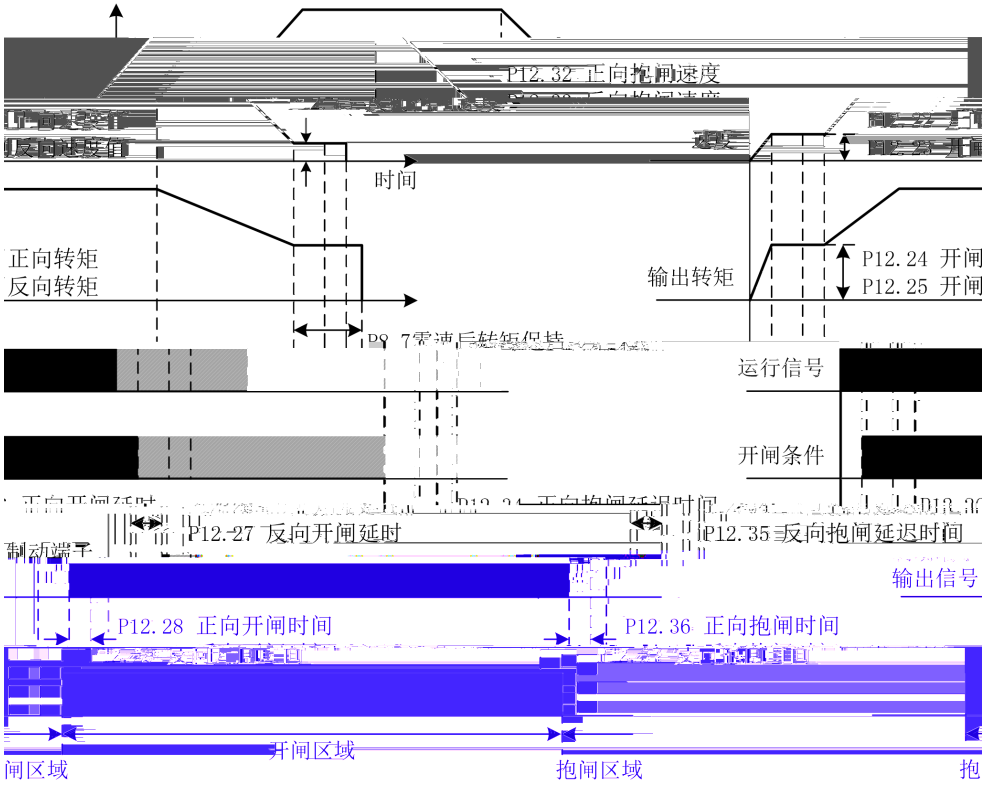
P12.22 P12.23 P12.24 P12.25

3. ;

P12.32[ ] P12.33[ ]

P12.36　P12.37

P16



7.8　　V/F

1

P16.0　P16.9

P16.7　　120 × P16.5/P16.6　　P16.9

120 × P16.5/P16.7

P16.2　　P16.4

2

P16.12

0.5Hz~2Hz >50Hz

1kHz			
5kHz			
10kHz			

	kHz
37kW 132kW	3
160kW 250kW	2.5
280kW 400kW	2

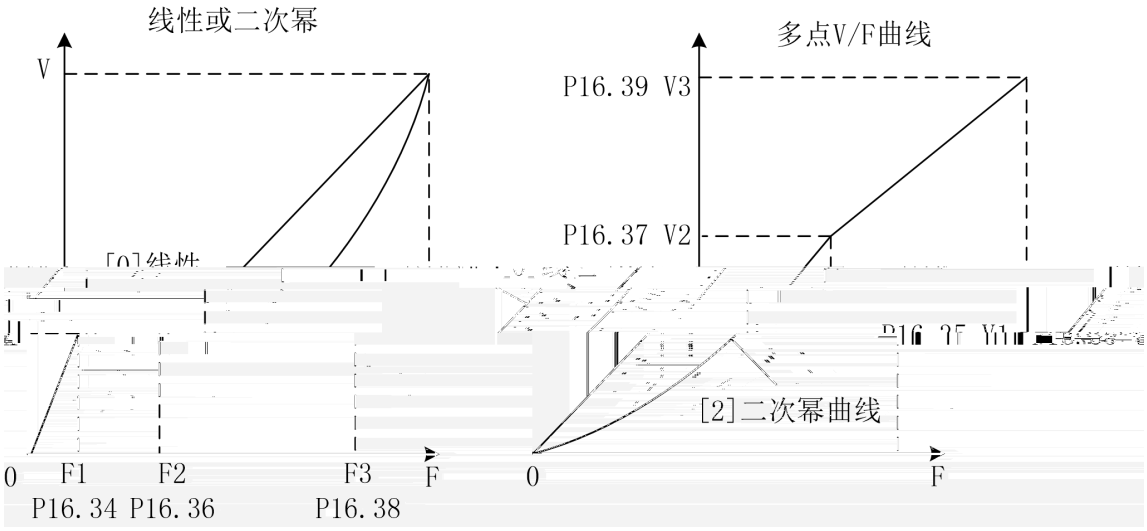
3 V/F

P16.14 V/F P16.11=0

[0] V/F

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

[2]



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

V1 V2 V3 F1 F2 F3

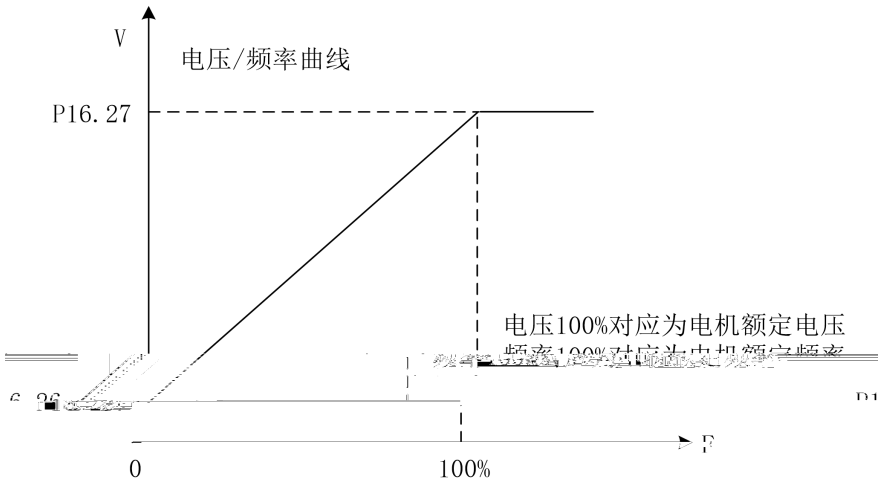
4

P16.15 V/F

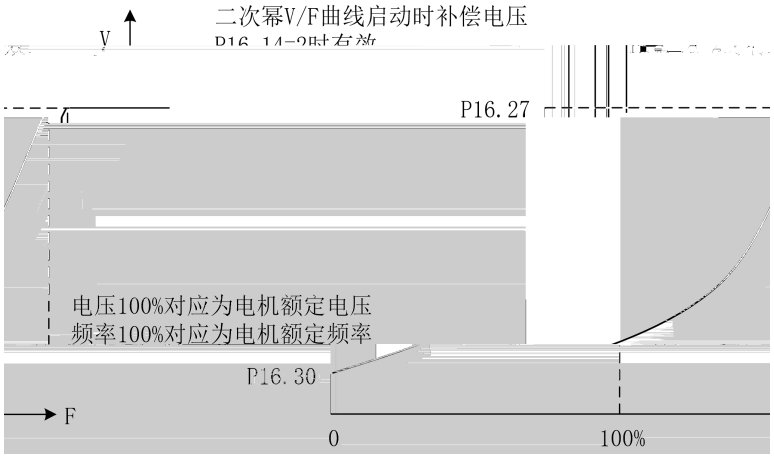
V/F

5

P16.14=[0] V/F V/F P16.26 P16.26 P16.27



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



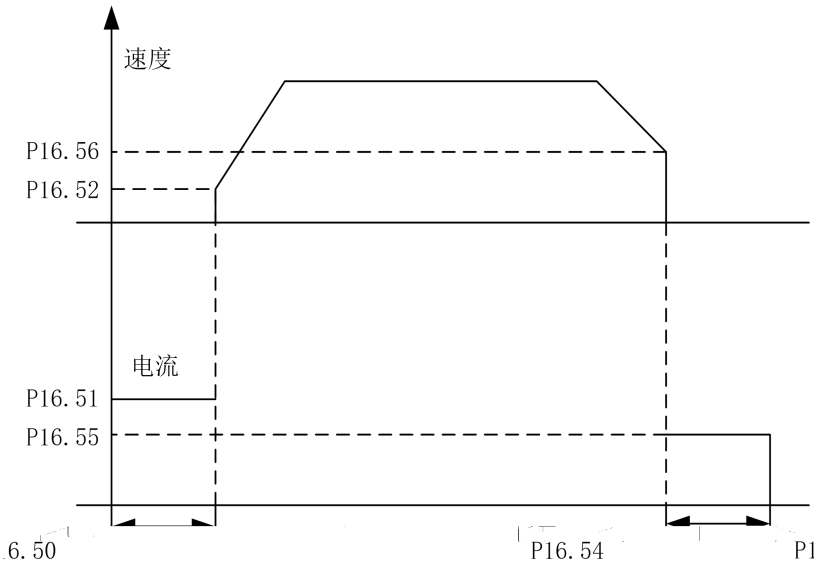
6

P16.50 P16.56

V/F

P16.50 P16.51 P16.52

P16.54 P16.55 P16.56



7

P16.64

7.9

1

P20.0

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

P20.0=0 P20.1≠0 P20.2≠0

P20.0=1 P20.1≠0 P20.2≠0 1

0

P16.11 [1] [2]

P20.3 P20.1 [4]

2

P12.24 P12.25 0%

3

P20.7

P20.8 P20.9 P20.7=1

4

P20.15 A B

A B U V W

[0]

[1] A B

5

GDHF-PGD2 PG

GDHF-PGD2 PG

DI “[10]” DP “CW0.9”

P20.26 P20.27 0

2%

P20.34 [0] 1

0 P20.26 P20.27 0

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

P20.34 [1] 2

200 P20.26 P20.27 0

HF650 P20.34 [1]

HF650 P20.34 [0]

6 DROOP

DROOP DROOP

P20.60 0

DROOP P20.61 DROOP

7 1

8 **2**

P20.1 P20.2 [0]

9

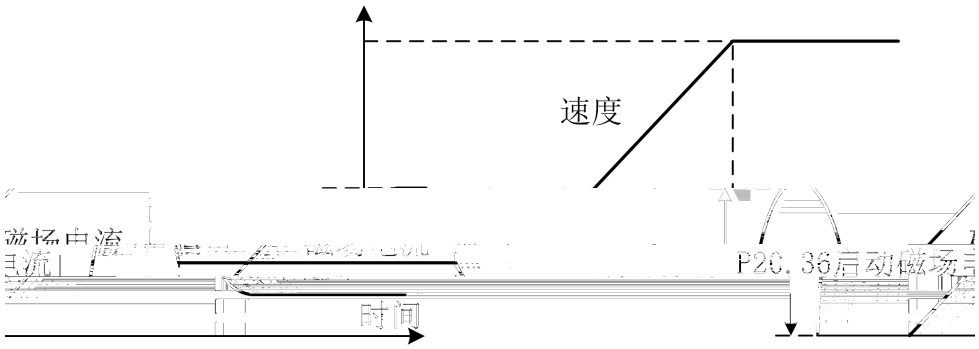
PGD1

PLC DI

DP CW0.10 “1”

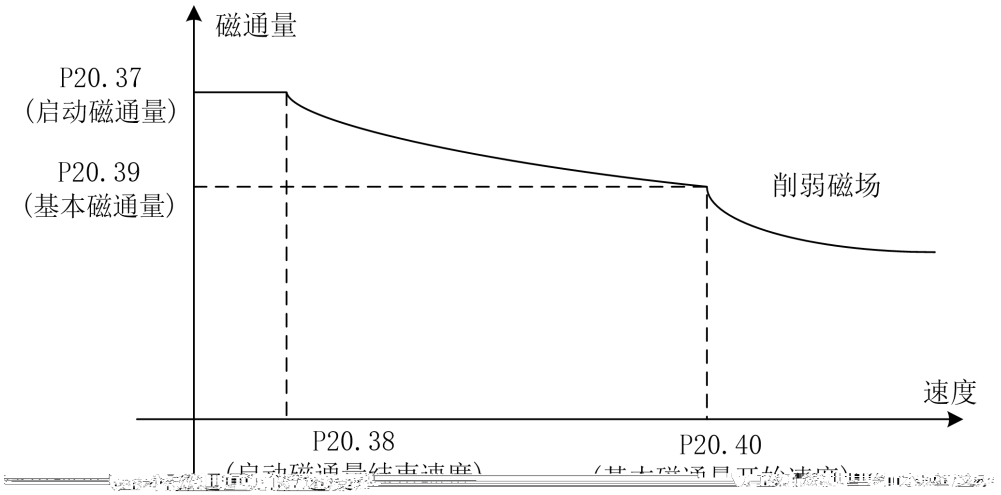
10

P20.36



11

P20.37 P20.40

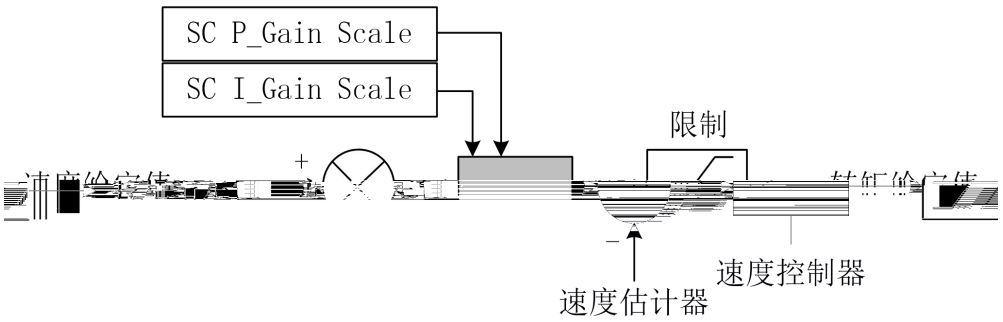


12

P20.55 ,

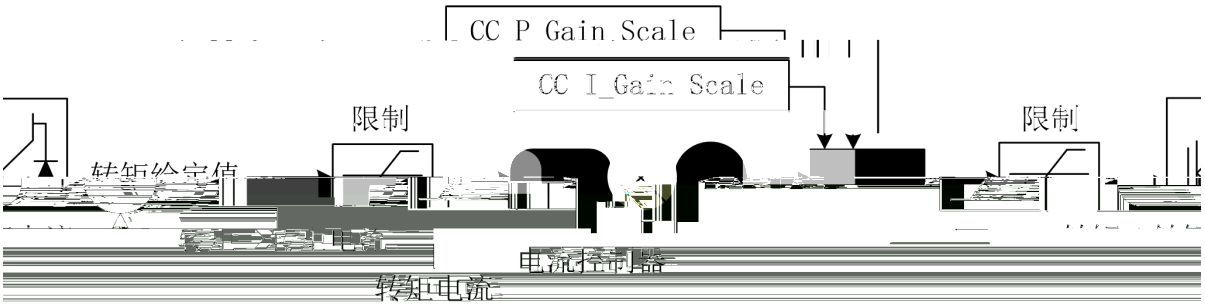
P20.56 ,

%



13

P20.62 P20.63 %



7.10

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	

7.11

1 †

P12.22	0.8; 1.5;			0.8	
P12.23	0.8; 1.5;				
P12.24	30;	5;			
P12.25	20;	5;			
P12.32	0.5%			0.5	
P12.33	0.5%			0;5	
P12.40	10		100%	P16.6 10 %	
P12.41	0.1s			0.3s 3s	0.1s
P12.42	xxx s				

2

P20.21 0 “ ”

50HZ

P20.22 85HZ

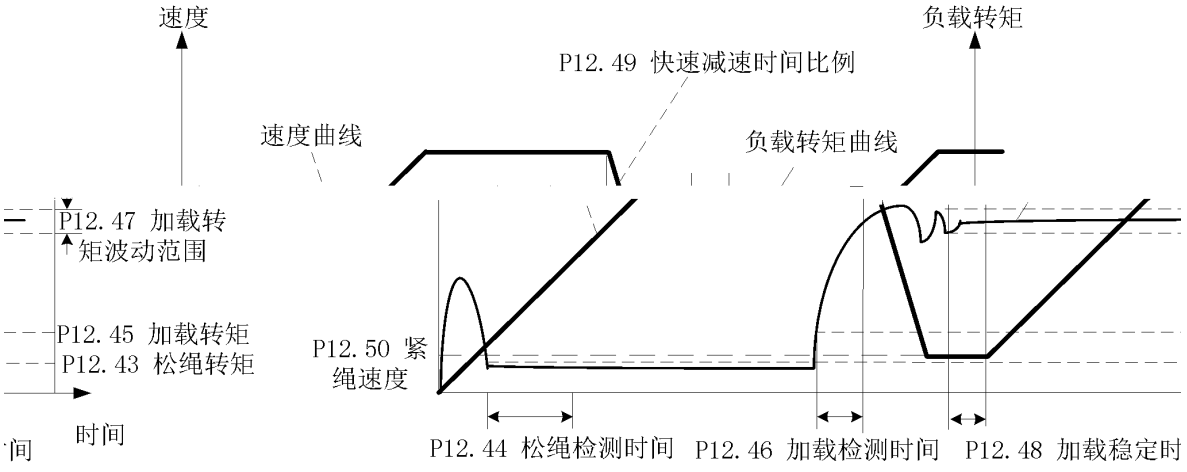
%

85/50*100%=170%

P20.23

3

P12.43		20%	
P12.44		0.2s	
P12.45		30%	P12.43
P12.46		0.1s	
P12.47		10%	
P12.48		3s	P12.47
P12.49		0.2	
P12.50		3%	
P12.38		1	1 0
P4.3	4	3	



4

V/F

P8.7		15	
P8.66		70	
P8.67		40%	0
P8.70			

1

5

P3.5		6	30	/		COM		COM
P3.6		7	40			COM	2	
P3.7		8	41		COM			
P12.18	FCD LSW_2X		2		16		1	
P12.19	FCD MSW_2X		2		16		1	
P12.20	FCD m/min _2X		2					

1 FCD LSW FCD MSW

101.62 1 32 LSW 102.63 1 32 MSW

2 40

30HZ

3 “ ” 2

4 “ ”

6

“ ”

“ ” 5

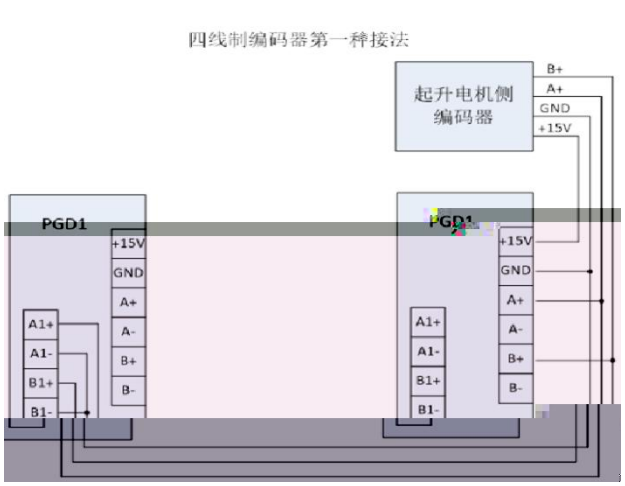
P27.10-P27.24	DI9-DI23	22	DI DI “ ”
P12.8	7	Hz	
P12.9	8	Hz	
P12.10	9	Hz	
P12.11	10	Hz	
P12.12	11	Hz	

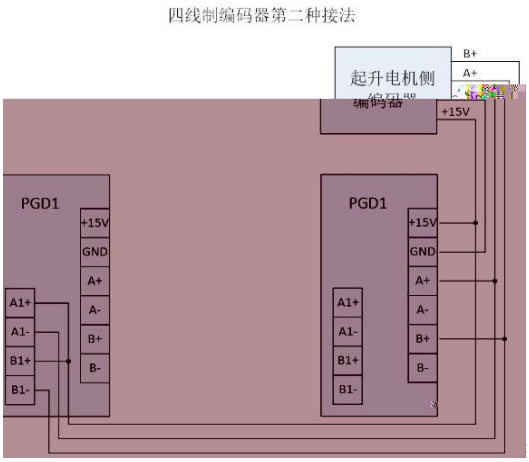
7

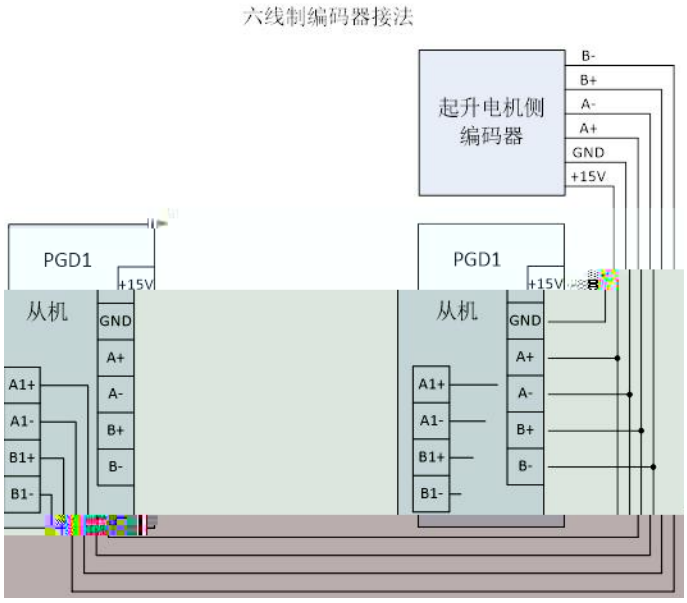
PGD1 PGD1 A1+

A1- B1+, B1-

a







P20.14

101.64 101.65

b

P3.6	7	21	DI
P3.7	8	29	1
P8.8		15s	8
P8.59			
P8.60		15	P8.60
P8.68	16		
P8.69	16		
P8.70		50ms	P8.70
P8.71		0	0 1

c

T

P8.59.

( )( )

8

8.1

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

W21	1 SLV1_CAN_ERR	1	1

8.2

[E052]	U IGBT ERR_UT not reset	IGBT IGBT
[E054]	V IGBT ERR_UT not reset	IGBT IGBT
[E055]	W IGBT ERR_UT not reset	IGBT IGBT
[E056]	ERR_SLAVE_FAULT not reset	
[E057]	ERR_DB not reset	IGBT IGBT
[E100]	OV	P8.35(1) P7.12( )
[E105]	UV	P7.13( )
[E106]	1 Brake abnormal 1	DI
[E107]	2 Brake abnormal 2	DI
[E108]	DC switch open	
[E110]		

OC

P7.4( )

P7.48(1)

[E111]

OL

[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	
[E152]	U IGBT PDP[U]	IGBT IGBT
[E154]	V IGBT PDP[V]	IGBT IGBT
[E155]	W IGBT PDP[W]	IGBT IGBT
[E156]	Hardware OC	
[E157]	PDP[DB]	
[E160]	SLAVE FAULT	
[E161]	SLV_NOT_RDY	
[E162]	1 CAN SLV1_CAN_ERR	1

[E167]	CAN CAN_ERR	
[E170]	MOTOR TUNING FAIL	P7.33
[E180]	DP P/B ERROR	
[E181]	DP P/B_EM	CW0.4
[E200]	LOCAL_EM	[ ] P3
[E201]	REMOTE_EM	[ ] P3
[E202]	Modbus MODBUS EMERGENCY	Modbus CW0.4
[E203]	DRIVE DISABLED	DP
[E204]	DI ERR DUPLICATE DI SET	DI
[E210]	Panel Error	
[E220]	CRC MEMORY CRC ERR	
[E221]	PARAMETER ERROR	

8.3

		•	•
		• ON	• ON
		• COM	• COM
		•	•
			•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		•	•
		• ON ON	• ON
		•	• V W
		•	• /
		•	•
			•
		•	•
		•	•
		•	•
		•	•
		•	•

	•	•
	•	•
	•	•

9

1. 2. 3. 4.
1. CMOS 2. 3.

9.1

ה Ď

9.2

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

9.3

	2	1 2
PCB		

9.4

5

5

(400-0077-570)

1 40

2 80%

3 24 /

9.5

1

2

5

p

```
0XC601, 0X06C0, 0X0780, 0XC741, 0X0500, 0XC5C1, 0XC481, 0X0440,
0XCC01, 0X0CC0, 0X0D80, 0XCD41, 0X0F00, 0XCFC1, 0XCE81, 0X0E40,
0X0A00, 0XCAC1, 0XCB81, 0X0B40, 0XC901, 0X09C0, 0X0880, 0XC841,
0XD801, 0X18C0, 0X1980, 0XD941, 0X1B00, 0XDBC1, 0XDA81, 0X1A40,
0X1E00, 0XDEC1, 0XDF81, 0X1F40, 0XDD01, 0X1DC0, 0X1C80, 0XDC41,
0X1400, 0XD4C1, 0XD581, 0X1540, 0XD701, 0X17C0, 0X1680, 0XD641,
0XD201, 0X12C0, 0X1380, 0XD341, 0X1100, 0XD1C1, 0XD081, 0X1040,
0XF001, 0X30C0, 0X3180, 0XF141, 0X3300, 0XF3C1, 0XF281, 0X3240,
0X3600, 0XF6C1, 0XF781, 0X3740, 0XF501, 0X35C0, 0X3480, 0XF441,
0X3C00, 0XFCC1, 0XFD81, 0X3D40, 0XFF01, 0X3FC0, 0X3E80, 0XFE41,
0XFA01, 0X3AC0, 0X3B80, 0XFB41, 0X3900, 0XF9C1, 0XF881, 0X3840,
0X2800, 0XE8C1, 0XE981, 0X2940, 0XEB01, 0X2BC0, 0X2A80, 0XEA41,
0XEE01, 0X2EC0, 0X2F80, 0XEF41, 0X2D00, 0XEDC1, 0XEC81, 0X2C40,
0XE401, 0X24C0, 0X2580, 0XE541, 0X2700, 0XE7C1, 0XE681, 0X2640,
0X2200, 0XE2C1, 0XE381, 0X2340, 0XE101, 0X21C0, 0X2080, 0XE041,
0XA001, 0X60C0, 0X6180, 0XA141, 0X6300, 0XA3C1, 0XA281, 0X6240,
0X6600, 0XA6C1, 0XA781, 0X6740, 0XA501, 0X65C0, 0X6480, 0XA441,
0X6C00, 0XACC1, 0XAD81, 0X6D40, 0XAF01, 0X6FC0, 0X6E80, 0XAE41,
0XAA01, 0X6AC0, 0X6B80, 0XAB41, 0X6900, 0XA9C1, 0XA881, 0X6840,
0X7800, 0XB8C1, 0XB981, 0X7940, 0XBB01, 0X7BC0, 0X7A80, 0XBA41,
0XBE01, 0X7EC0, 0X7F80, 0XBF41, 0X7D00, 0XBDC1, 0XBC81, 0X7C40,
0XB401, 0X74C0, 0X7580, 0XB541, 0X7700, 0XB7C1, 0XB681, 0X7640,
0X7200, 0XB2C1, 0XB381, 0X7340, 0XB101, 0X71C0, 0X7080, 0XB041,
0X5000, 0X90C1, 0X9181, 0X5140, 0X9301, 0X53C0, 0X5280, 0X9241,
0X9601, 0X56C0, 0X5780, 0X9741, 0X5500, 0X95C1, 0X9481, 0X5440,
0X9C01, 0X5CC0, 0X5D80, 0X9D41, 0X5F00, 0X9FC1, 0X9E81, 0X5E40,
0X5A00, 0X9AC1, 0X9B81, 0X5B40, 0X9901, 0X59C0, 0X5880, 0X9841,
0X8801, 0X48C0, 0X4980, 0X8941, 0X4B00, 0X8BC1, 0X8A81, 0X4A40,
0X4E00, 0X8EC1, 0X8F81, 0X4F40, 0X8D01, 0X4DC0, 0X4C80, 0X8C41,
```

```
        0X4400, 0X84C1, 0X8581, 0X4540, 0X8701, 0X47C0, 0X4680, 0X8641,
        0X8201, 0X42C0, 0X4380, 0X8341, 0X4100, 0X81C1, 0X8081, 0X4040 };

    INT8U nTemp;
    INT16U wCRCWord = 0xFFFF;

        while (wLength--)
        {
            nTemp = *nData++ ^ wCRCWord;
            wCRCWord >>= 8;
            wCRCWord  ^= wCRCTable[nTemp];
        }
        return wCRCWord;
} // End: CRC16
```

A.3 MODBUS

MODBUS

MODBUS MODBUS

MODBUS MODBUS MODBUS

RTU 3.5

T3.5 0...9

A...F

3.5

1.5

3.5

CRC

MODBUS

MODBUS

				CRC	
T3.5	1Byte	1Byte	NBytes	2Bytes	T3.5

MODBUS 1 ~ 247 0 247

GUIDE

F01 F02 F03 F04 F06 F16 MODBUS

MODBUS

CRC 16 CRC

CRC16

A.4 MODBUS

0x01(HEX) (Read Coils)

0		1 ~ 247
1		0x01
2	[ ]	
3	[ ]	
4	[ ]	<N>
5	[ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

0		1 ~ 247
1		0x01
2		N / 8
3	[8-0]	
4	[16-9]	
.....	CRC [ ]	CRC16
.....	CRC [ ]	
(N / 8 + 5)		

0x02(HEX) (Read Discrete Inputs)

0		1 ~ 247
1		0x02
2	[ ]	
3	[ ]	
4	[ ]	Input <N>
5	[ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

0		1 ~ 247
1		0x02
2		N / 8
3	Input[8-0]	Input
4	Input [16-9]	
.....	CRC [ ]	CRC16
.....	CRC [ ]	
(N / 8 + 5)		

0x03(HEX) (Read Holding Registers)

0		1 ~ 247
1		3
2	[ ]	
3	[ ]	
4	[ ]	<N>
5	[ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

0		1 ~ 247
1		3
2		2 × N
3	1 [ ]	
4	1 [ ]	
5	2 [ ]	
6	2 [ ]	
……	……	……
2 × N+1	N [ ]	N
2 × N+2	N [ ]	
2 × N+3	CRC [ ]	CRC16
2 × N+4	CRC [ ]	
(2 × N + 5)		

0x06(HEX) (Write Single Holding Registers)

0		1 ~ 247
1		6
2	[ ]	
3	[ ]	
4	1 [ ]	
5	1 [ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

0		1 ~ 247
1		6
2	[ ]	
3	[ ]	
4	1 [ ]	
5	1 [ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

0x10(HEX) (Write Multiple Holding Registers)

0		1 ~ 247
1		16
2	[ ]	
3	[ ]	
4	[ ]	<N>
5	[ ]	
6		2×N
7	1 [ ]	
8	1[ ]	
9	2 [ ]	
10	2[ ]	
……	……	……
2×N + 5	N[ ]	N
2×N + 6	N[ ]	
2×N + 7	CRC [ ]	CRC16
2×N + 8	CRC [ ]	
(2×N + 9)		

0		1 ~ 247
1		16
2	[ ]	
3	[ ]	
4	[ ]	<N>
5	[ ]	
6	CRC [ ]	CRC16
7	CRC [ ]	
8		

A.5 MODBUS

0x01 Coils		
0		0 1
1		0 1
2		1
3		1
4		0 1
5		0 1
6		00 1 01 2 10 3 11 4
7		
8		0 Disable 1 Enable
9	Orientation Enable	0 Disable 1 Enable
63		1 Restart

0x02 Discrete Input		
0		0 1
1		0 1
2		0 1
3		0 1
4		0 1
5		0 1
10	/	0 1
11		00 1 01 2 10 3 11 4
12		
13		0 1

0x03 Holding Regs		
0	DO	[R/W] : DO
50	AO 1	[R/W] : 10 => 1.0[%]
51	AO 2	[R/W] : 10 => 1.0[%]
60	Error Code	[07..00] : ERROR CODE [15..08] : WARNING CODE
62	Parameter Error	[07..00] : ERROR CODE [15..08] : WARNING CODE
100	Speed Set [Hz] @Modbus	[R/W] : ±10 => ±1.0[Hz]
101	Speed Set [rpm] @Modbus	[R/W] : ±1 => ±1[rpm]
102	Speed Set [%] @Modbus	[R/W] : ±10 => ±1.0[%]
103	Torque Set [%] @Modbus	[R/W] : ±10 => ±1.0[%]
104	Torque Limit Set [%] @Modbus	[R/W] : ±10 => ±1.0[%]
105	Active Current Set [%] @Modbus	[R/W] : ±10 => ±1.0[%]
106	Reactive Current Set [%] @Modbus	[R/W] : ±10 => ±1.0[%]
107	Accel_Time Multiplier	[R/W] : 1000 => 1.0, [0.05 ~ 10.0]
108	Decel_Time Multiplier	[R/W] : 1000 => 1.0, [0.05 ~ 10.0]
4500	Speed [Hz]	[R] : ±10 => ±1.0[Hz]
4501	Speed [rpm]	[R] : ±1 => ±1.0[rpm], @100ms
4502	Speed [%]	[R] : ±10 => ±1.0[%]
4503	Output Current	[R] : ±10 => ±1.0[A], @100ms
4504	Output Voltage	[R] : ±10 => ±1.0[V], @100ms
4505	DC-Link Voltage	[R] : ±10 => ±1.0[V], @100ms
4506	Output Torque	[R] : ±10 => ±1.0[%], @100ms
4507	Load Torque	[R] : ±10 => ±1.0[%], @100ms
4508	Output Power	[R] : ±10 => ±1.0[kW], @250ms
4509	Temperature	[R] : 10 => 1.0[ ]
4510	Speed_e [Hz]	[R] : ±10 => ±1.0[Hz]
4511	Speed_e [rpm]	[R] : ±1 => ±1.0[rpm]
4512	Speed_e [%]	[R] : ±10 => ±1.0[%]
4513	Speed Set [Hz]	[R] : ±10 => ±1.0[Hz]
4514	Speed Set [rpm]	[R] : ±1 => ±1.0[rpm]
4515	Speed Set [%]	[R] : ±10 => ±1.0[%]
4516	Speed Set [Hz] @Ramp	[R] : ±10 => ±1.0[Hz]
4517	Speed Set [rpm] @Ramp	[R] : ±1 => ±1.0[rpm]
4518	Speed Set [%] @Ramp	[R] : ±10 => ±1.0[%]
4519	Torque Set [%]	[R] : ±10 => ±1.0[%]

0x04 Input Regs		
0	DI	[R]
50	AI 1 [V]	[R] : 100 => 1.0[V], -10 ~ +10[V]
51	AI 1 [I]	[R] : 100 => 1[mA], 0 ~ 20[mA]
52	AI2 [V]	[R] : 100 => 1.0[V], -10 ~ +10[V]
53	AI2 [I]	[R] : 100 => 1[mA], 0 ~ 20[mA]

B

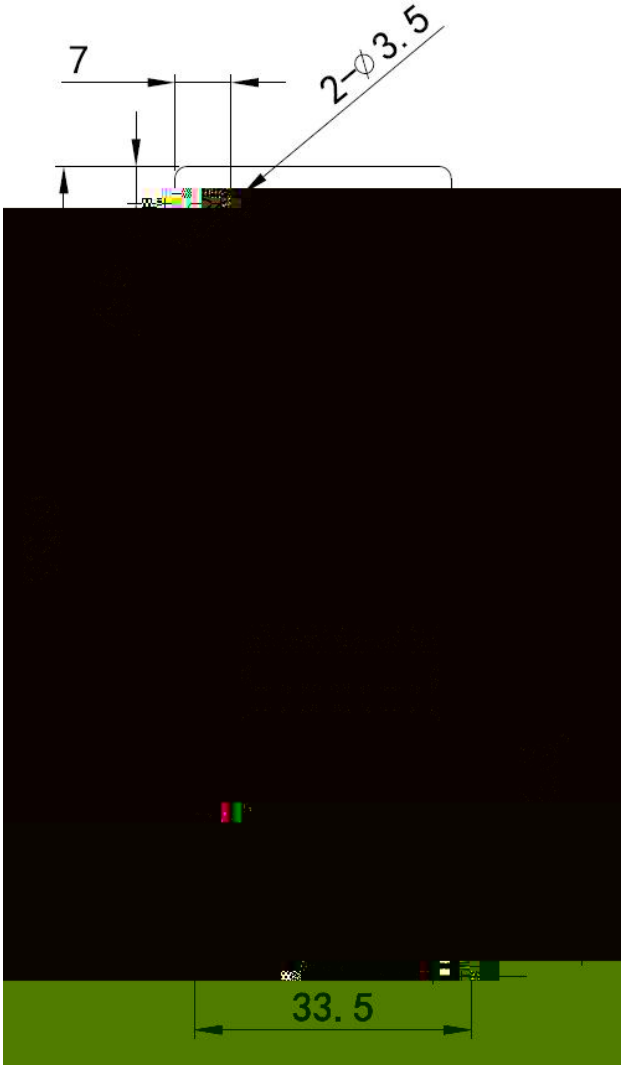
B1 PG

B1.1

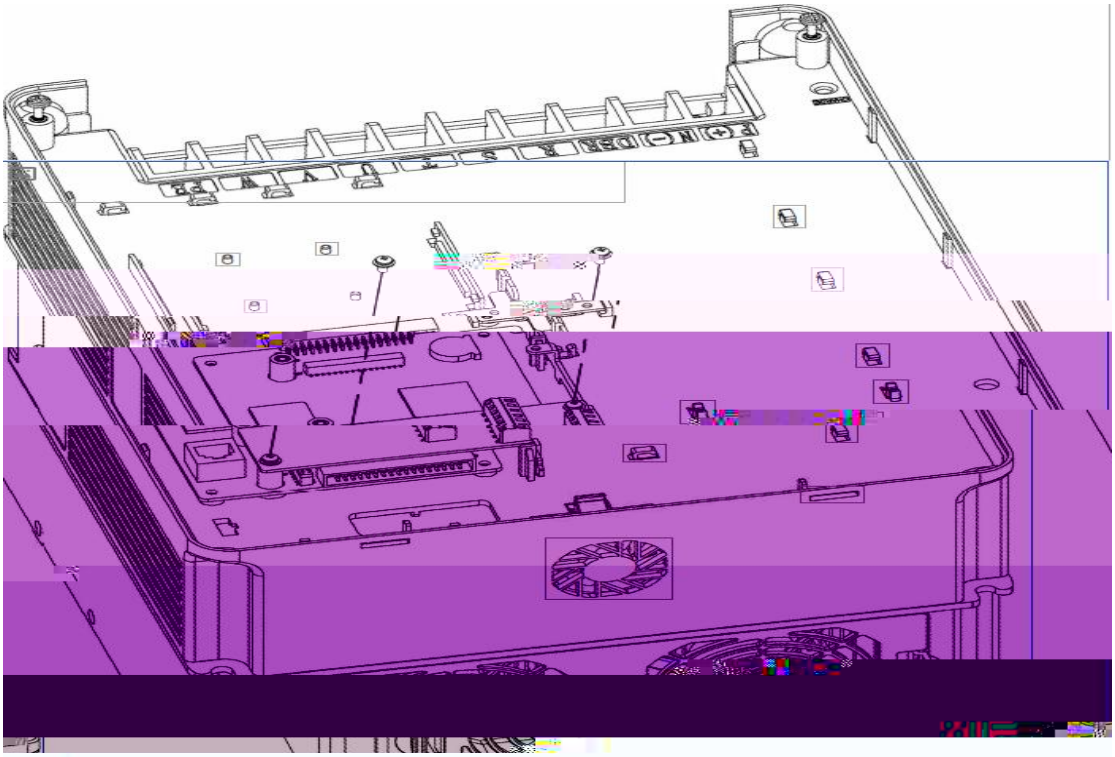
1.1.1

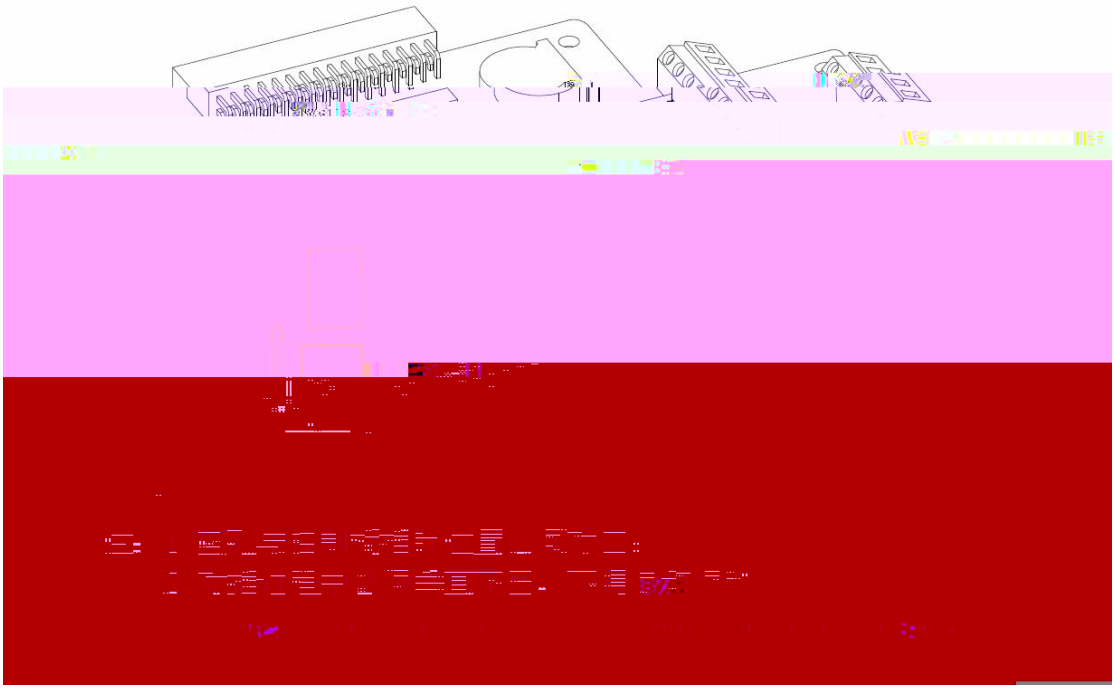
PG GDHF-APGX1

1.1.2



PG





PG

B1.2

1.2.1

PG PG

ض À D -15V

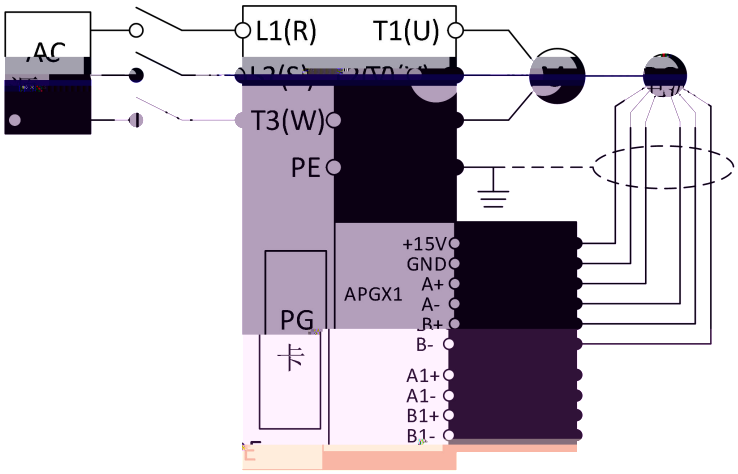
1.2.2

PG 10

B-	B+	A-	A+	GND	+15V

B1-	B1+	A1-	A1+

+15V GND A+ A-



PG

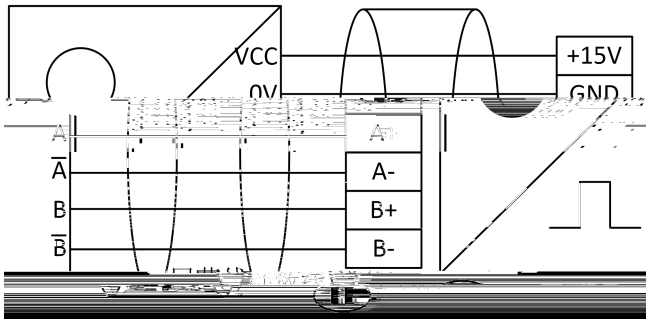
PG

PE

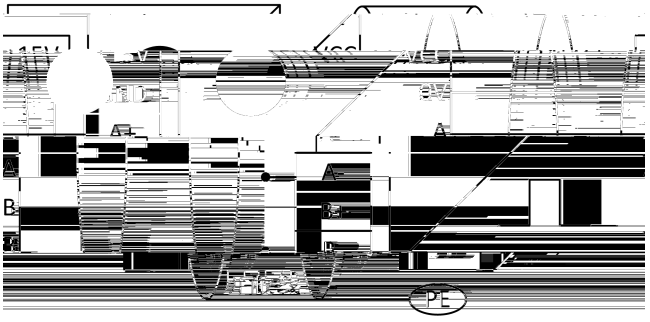
B1.3

PG

1.3.1

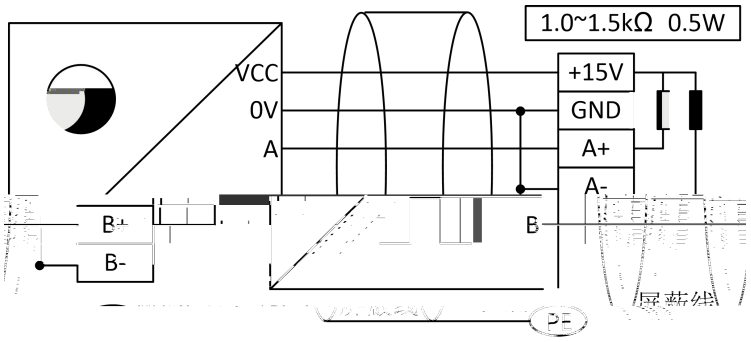


	HLE45-1024L-6F.AC
	RHI90N-ONAK1R61N-1024
	EC120P45-H6PR-1024



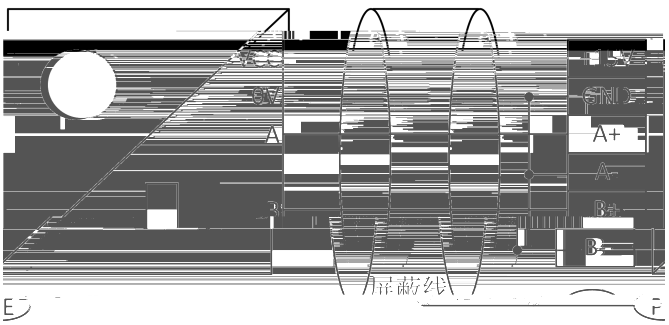
	HLE45-600L-3F.AC
	RV178N-10CALA31N-1024
	EC120P45-P6PR-1024

1.3.2



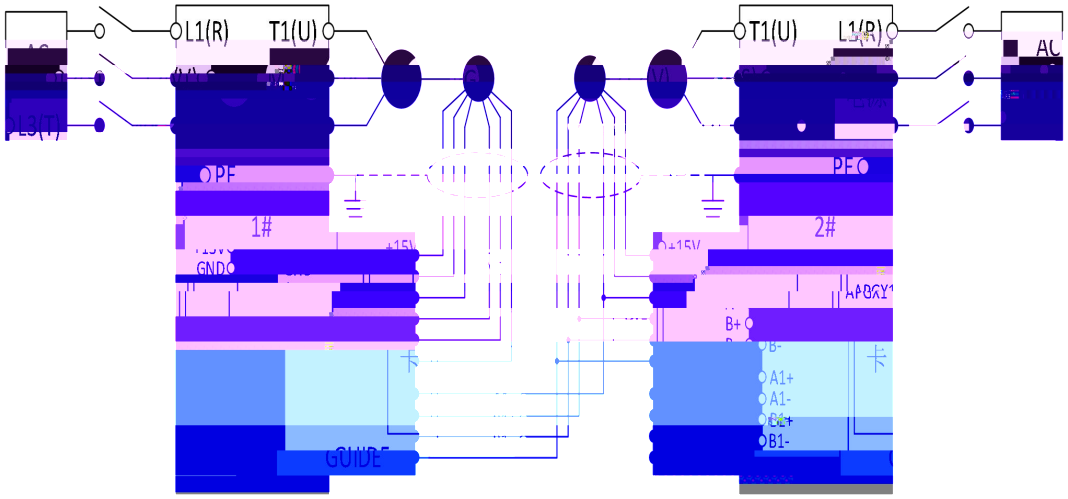
	HLE45-1024L-30C.AC
	EB38A6-C4PR-1024

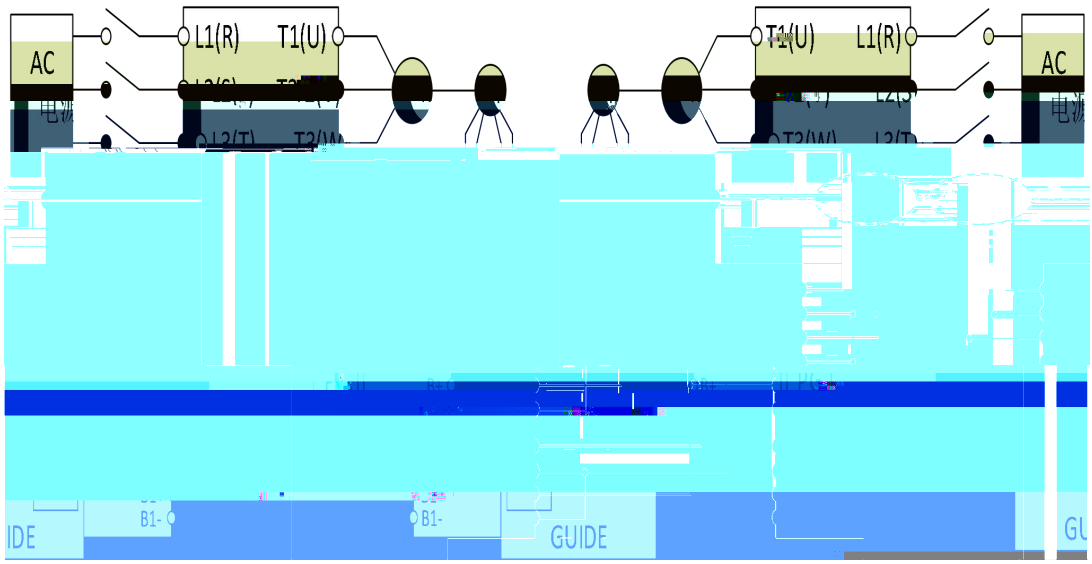
1.3.3



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

1.3.4





B2 CAN

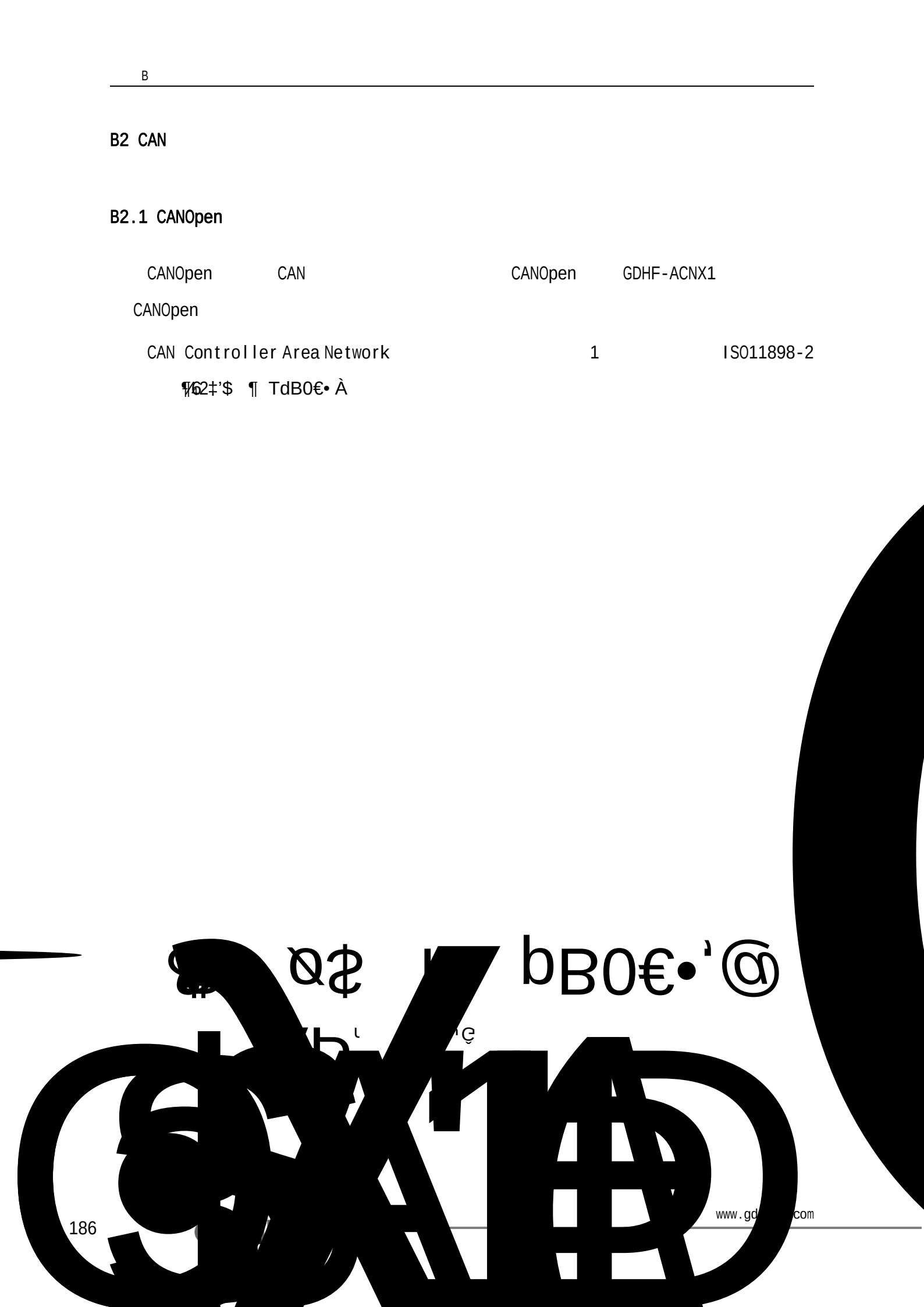
B2.1 CANOpen

CANOpen CAN CANOpen GDHF-ACNX1

CANOpen

CAN Controller Area Network 1 ISO11898-2

¶62‡'$ ¶ TdB0€• À



X1

CANOpen GDHF-ACNX1

CANOpen CANOpen

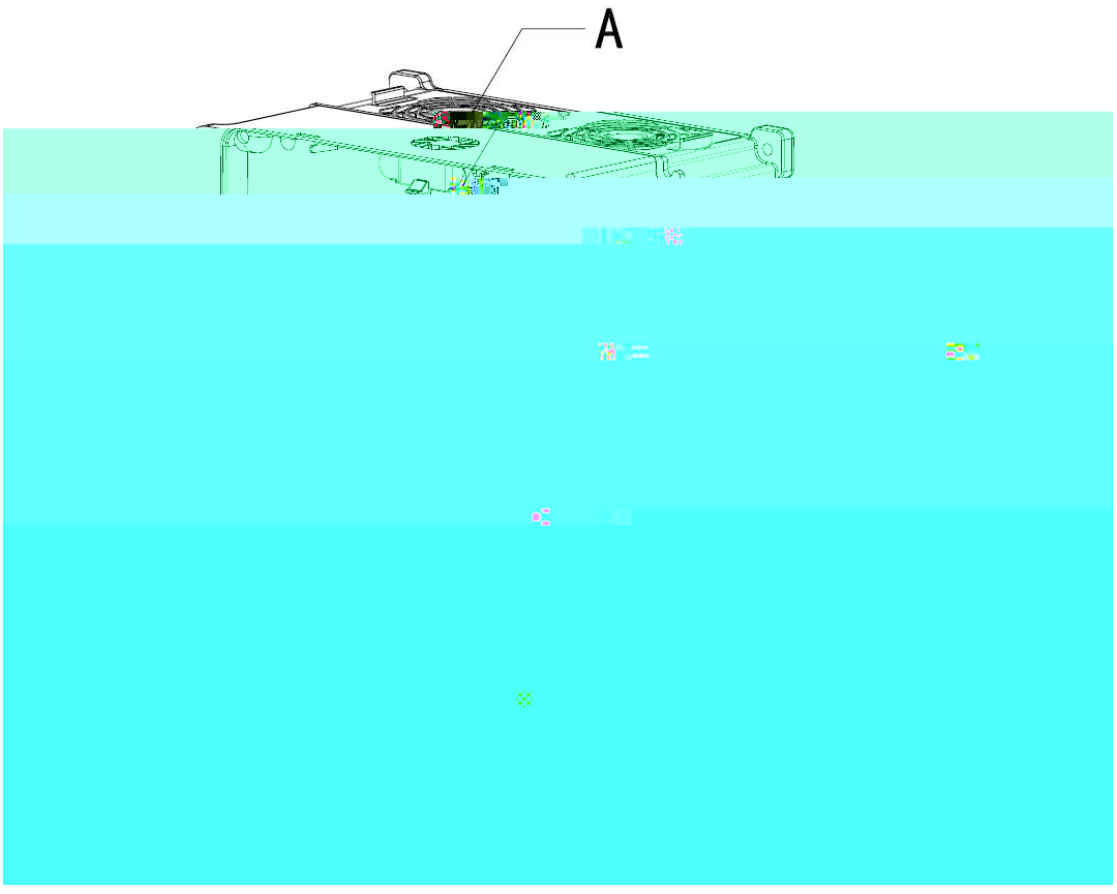
CANOpen GDHF-ACNX1

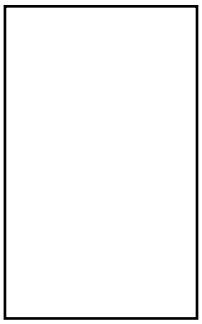
-
-
- PID
-
-
-

CANOpen GDHF-ACNX1 J25

EMC GDHF-ACNX1

CAN





B2.4 CANOpen

P31.0	CAN	[0] [1]	0 1	0
P31.1	CANopen ID	CANopen ID	1 127	0
P31.2		CAN		
P31.3	CAN		0 60	0
P31.4	CAN			

B2.5 CANOpen

[0] CANOpen [1] CANOpen

CANopen ID CANOpen ID

CAN 20Kbps ~ 1000Kbps

CAN

0

CAN

4

CANOpen GDHF-ACNX1 CANOpen

COB-ID

Canopen CAN ID

COB-ID										
				ID						
10	9	8	7	6	5	4	3	2	1	0

	( )	COB-ID( )
NMT	0	0x00

SYNC	1	0x80
EMERGENCY	1	0x81 ~ 0xFF
PDO1 TX	11	0x181 ~ 0x1FF
PDO1 RX	100	0x201 ~ 0x27F
PDO2 TX	101	0x281 ~ 0x2FF
PDO2 RX	110	0x301 ~ 0x37F
PDO3 TX	111	0x381 ~ 0x3FF
PDO3 RX	1000	0x401 ~ 0x47F
PDO4 TX	1001	0x481 ~ 0x4FF
PDO4 RX	1010	0x501 ~ 0x57F
SDO TX	1011	0x581 ~ 0x5FF
SDO RX	1100	0x601 ~ 0x67F
	1110	0x701 ~ 0x77F

Canopen

HEX					
1000	0		RO	UNSIGNED32	0x0000 0000
1001	0		RO	UNSIGNED8	
1003					
	0		RW	UNSIGNED32	
	1		RO	UNSIGNED32	
1005	0	COB-ID SYNC	RW	UNSIGNED32	0x80
1006	0		RW	UNSIGNED32	0x80
1008	0		CONST	String	GD_CANopen
1009	0		CONST	String	V1.00
100A	0		CONST	String	V1.00
100C	0		RW	UNSIGNED16	0
100D	0		RW	UNSIGNED8	0
100E	0	COB-ID	RW	UNSIGNED32	NodeID+0x700
1016					
	0		RO	UNSIGNED8	1
	1		RW	UNSIGNED32	0
1017	0		RW	UNSIGNED16	0
1400		PDO1 RX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x200
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
1401		PDO2 RX			
	0		RO	UNSIGNED8	5

	1	COB-ID	RW	UNSIGNED32	NodeID+0x300
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
1402		PDO3 RX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x400
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
1403		PDO4 RX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x500
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
1600		PDO1 RX			
	0		RO	UNSIGNED8	4
	1		RO	UNSIGNED32	
	2		RO	UNSIGNED32	
	3		RO	UNSIGNED32	
	4		RO	UNSIGNED32	
1601		PDO2 RX			
	0		RO	UNSIGNED8	4
	1		RO	UNSIGNED32	
	2		RO	UNSIGNED32	
	3		RO	UNSIGNED32	
	4		RO	UNSIGNED32	
1602		PDO3 RX			
	0		RO	UNSIGNED8	4
	1		RO	UNSIGNED32	
	2		RO	UNSIGNED32	
	3		RO	UNSIGNED32	
	4		RO	UNSIGNED32	
1603		PDO4 RX			
	0		RO	UNSIGNED8	4
	1		RO	UNSIGNED32	
	2		RO	UNSIGNED32	
	3		RO	UNSIGNED32	
	4		RO	UNSIGNED32	
1800		PDO1 TX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x180

	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
	6	SYNC start value	RW	UNSIGNED8	1
1801		PDO2 TX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x280
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
	6	SYNC start value	RW	UNSIGNED8	1
1802		PDO3 TX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x380
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
	6	SYNC start value	RW	UNSIGNED8	1
1803		PDO4 TX			
	0		RO	UNSIGNED8	5
	1	COB-ID	RW	UNSIGNED32	NodeID+0x480
	2		RW	UNSIGNED8	254
	3	inhibit time	RW	UNSIGNED16	100
	5	Eventtimer	RW	UNSIGNED16	0
	6	SYNC start value	RW	UNSIGNED8	1
1A00		PDO1 TX			
	0		RO	UNSIGNED8	4
	1		RW	UNSIGNED32	
	2		RW	UNSIGNED32	
	3		RW	UNSIGNED32	
	4		RW	UNSIGNED32	
1A01		PDO2 TX			
	0		RO	UNSIGNED8	4
	1		RW	UNSIGNED32	
	2		RW	UNSIGNED32	
	3		RW	UNSIGNED32	
	4		RW	UNSIGNED32	
1A02		PDO3 TX			
	0		RO	UNSIGNED8	4
	1		RW	UNSIGNED32	
	2		RW	UNSIGNED32	
	3		RW	UNSIGNED32	
	4		RW	UNSIGNED32	

1A03		PDO4 TX			
	0		RO	UNSIGNED8	4
	1		RO	UNSIGNED32	
	2		RO	UNSIGNED32	
	3		RO	UNSIGNED32	
	4		RO	UNSIGNED32	

RPD

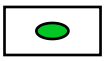
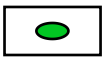
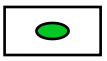
MODBUS						
register_0		× 1	W/R	N/A	0	1
register_1		× 1	W/R	N/A	0	1
register_2		× 10	W/R		0	3000
register_3		× 10	W/R		0	2000
register_4		× 10	W/R		0	3000
register_5		× 1	W/R	N/A	0	1
register_6		× 10	W/R		0	2000
register_7		× 10	W/R		0	2000
register_8		× 1000	W/R	N/A	50	10000
register_9		× 1000	W/R	N/A	50	10000
register_10		× 1	W/R	N/A	0	1
register_11		× 1	W/R	N/A	0	1
register_12	DI	× 1	R	N/A		
register_13	DO	× 1	R	N/A		
register_14	AI1	× 100	R			
register_15	AI1	× 100	R			
register_16	AI2	× 100	R			
register_17	AI2	× 100	R			
register_18	AI1	× 100	R			
register_19	AI2	× 100	R			
register_20	AO1	× 1	R			
register_21	AO2	× 1	R			
register_22		× 10	R			
register_23	@	× 10	R	_		
register_24	A	× 10	R	_		
register_25	B	× 10	R	_		
register_26	C	× 10	R	_		
register_27		× 100	R			
register_28	@	× 10	R			
register_29		× 10	R	/		

register_30	_	×10	R	/		
register_31	@	×10	R	_		
register_32		×10	R			
register_33		×10	R			
register_34		×10	R			
register_35	_ @	×10	R			
register_36	(AFE)	×10	R	_		
register_37	(AFE)	×100	R			
register_38		×1	R	N/A		
register_39		×1	R	N/A		
register_40		×1	R	N/A		
register_41		×10	R			
register_42	T1	×10	R			
register_43	T2	×10	R			
register_44		×1	R	N/A		
register_45	@	×100	R	N/A		
register_46		×1	R	N/A		
register_47	@	×1	R	N/A		
register_48		×1	R	N/A		
register_49	@	×1	R	N/A		
register_50	@	×1	R	N/A		
register_51		×1	R	N/A		
register_52	1	×1	R	N/A		
register_53	2	×1	R	N/A		
register_54	1_32 _LSW	×1	R	N/A		
register_55	1_32 _MSW	×1	R	N/A		
register_56	2_32 _LSW	×1	R	N/A		
register_57	2_32 _MSW	×1	R	N/A		
register_58	A @ 1	×10	R	_		
register_59	A @ 2	×10	R	_		
register_60	A @ 3	×10	R	_		
register_61	@ 1	×1	R	N/A		

B2.6

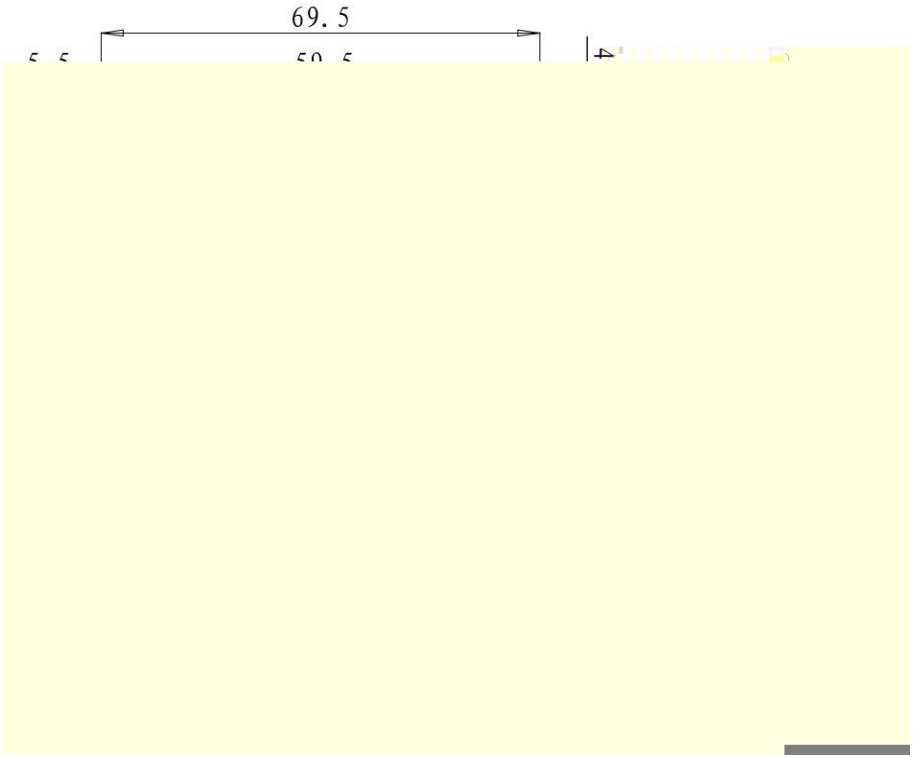
GDHF-ACNX1 3 LED LED

LED

LED		
		
RUN	COM	BUSError

RUN		10Hz 1Hz
RX		
TX		

B2.7

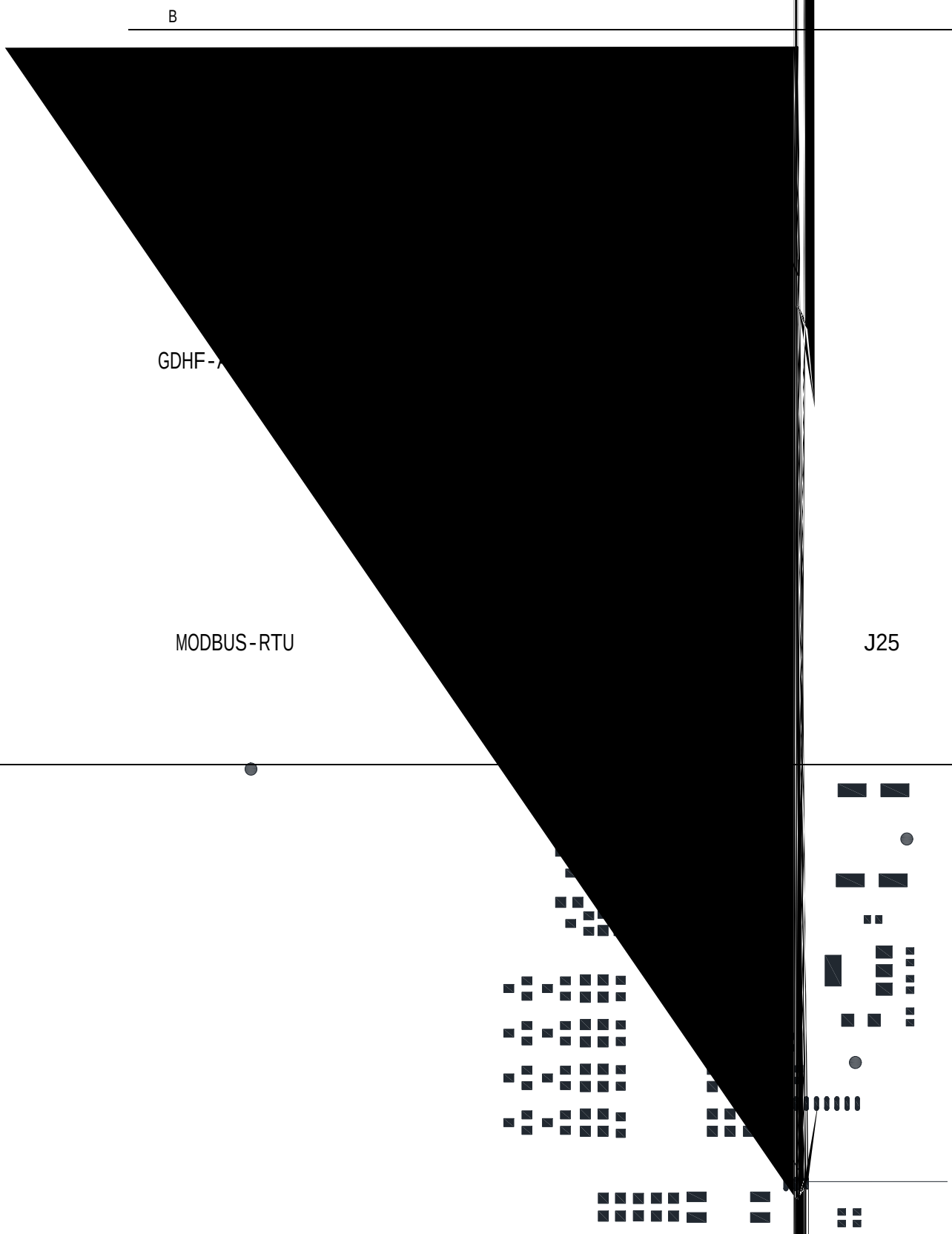


GDHF-ACNX1 mm

HF650N

DIP

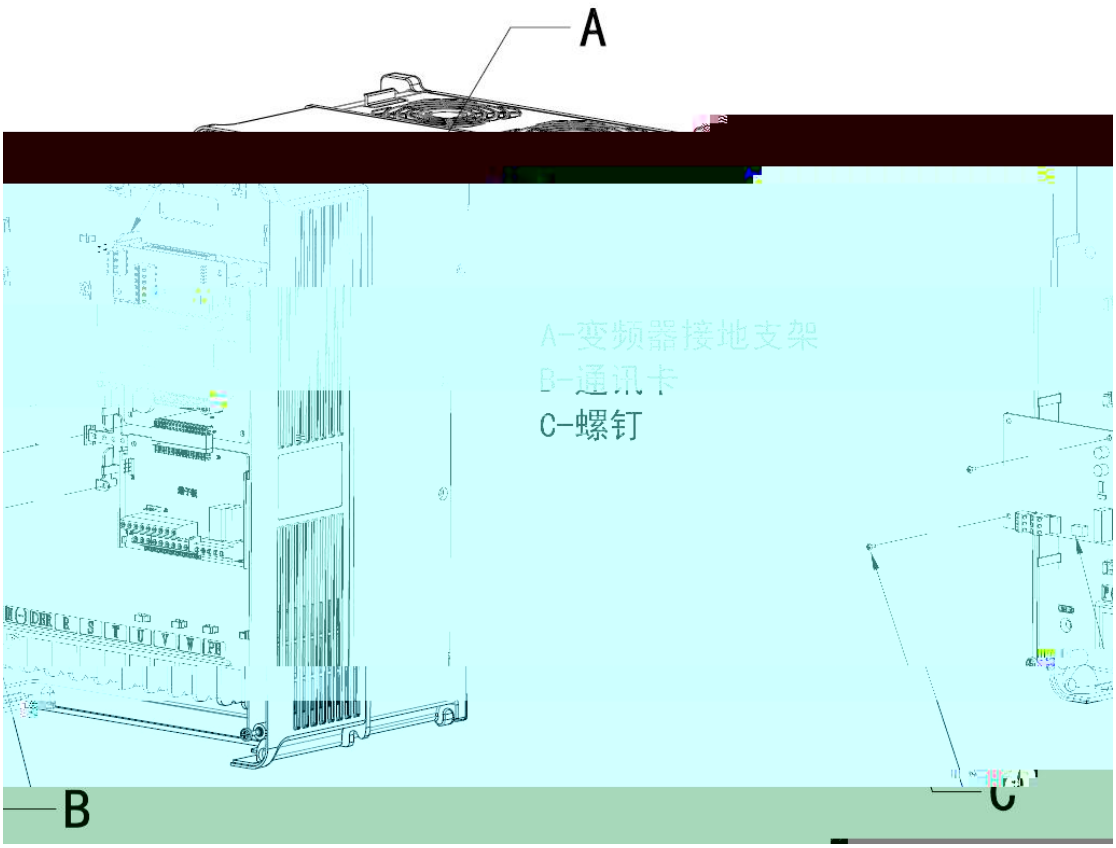
-
-
-
-


B
GDHF-
MODBUS-RTU
J25

GDHF-AMBX1 J25 GDHF-AMBX1
GDHF-AMBX1

- GDHF-AMBX1
- GDHF-AMBX1
-

EMC GDHF-AMBX1
GDHF-AMBX1 PE



B3.2

MODBUS J1 RS485 i

MODBUS ID

MODBUS

MODBUS

MODBUS

[1]RS485

B3.5

GDHF-AMBX1

MODBUS 2

=

×

× 1	
× 10	1
× 100	2
× 1000	3

MODBUS		
1	1	× 1
1	0.1	× 10
1	0.01	× 100
1	0.001	× 1000

Hz × 10 49.9Hz

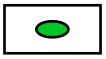
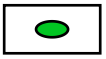
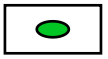
GDHF-AMBX1 49.9 × 10 = 499

499 49.9Hz

B3.6

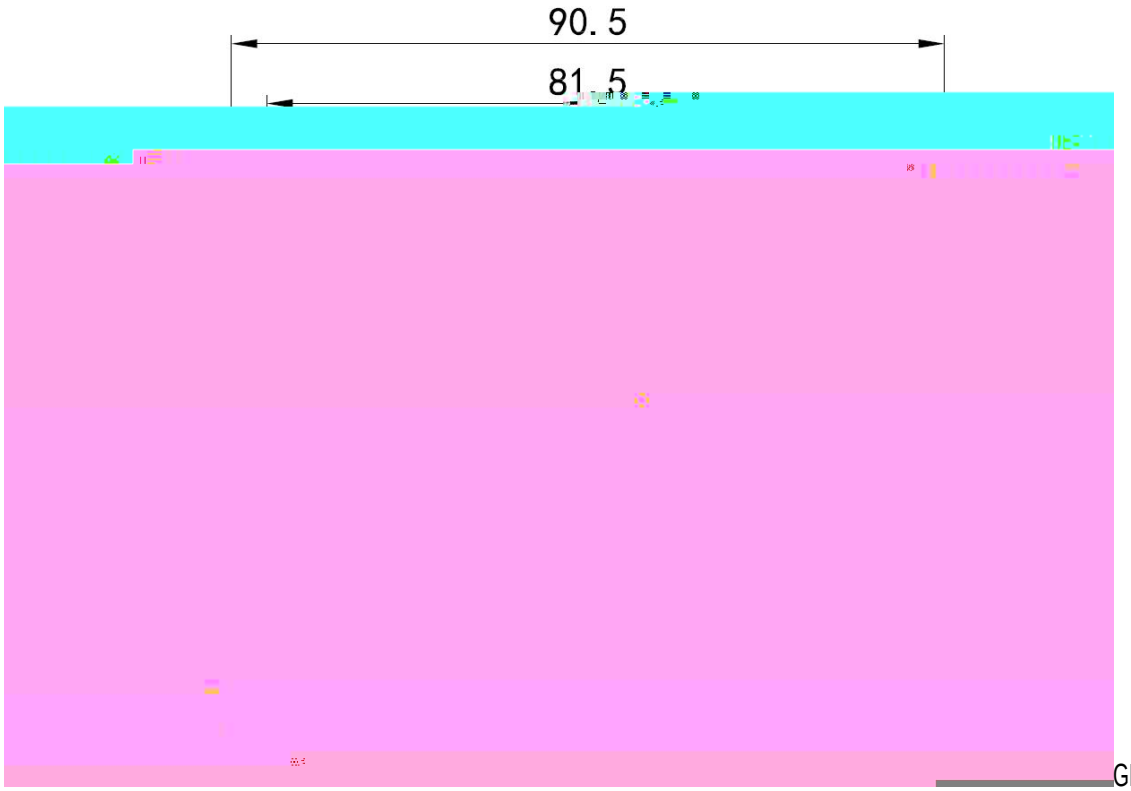
GDHF-AMBX1 3 LED LED

LED

LED		
		
RUN	RX	TX

RUN		MODBUS 10Hz 1Hz
RX		
TX		

B3.7



GDHF-A

MBX1 mm

HF650N

DIP

-
-
-
-

B3.8

MODBUS EIA/TIA485-A

RS485 127 31 1

RS-485

RS485		
LINE A	LINE B	
135~165(3~20MHz)	100~130(f>100KHz)	W
<30	<60	PF/m
<110	--	Ω/Km
>0.64	>0.53	mm
>0.34	>0.22	mm^2

Kbit/s	<93.75	115.2
LINE A ( )	1200	1000
LINE B ( )	1200	600

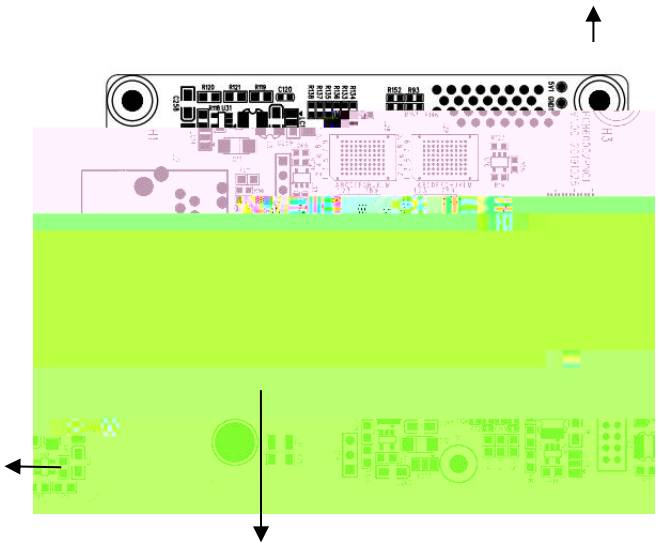
B4 PN

PROFINET GDHF-APNX1 HF650N
PROFINET PROFINET
PROFINET GDHF-APNX1

-
-
- PID
-
-
-

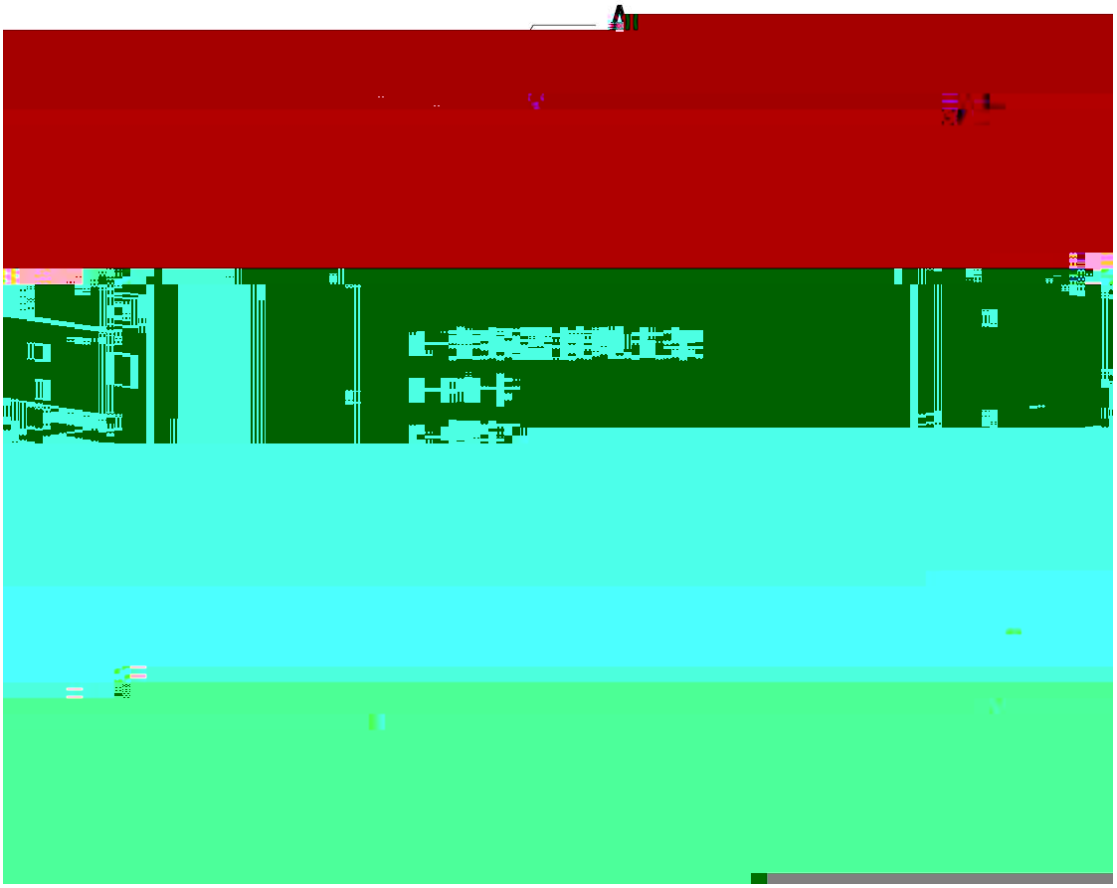
PROFINET GDHF-APNX1 J25

B4.1 PN



GDHF-APNX1

PROFINET



PN

B4.1.1 PROFINET

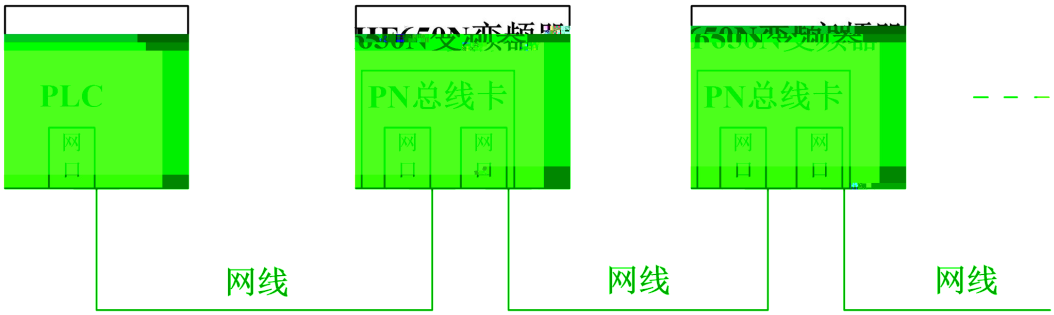
GDHF-APNX1 J2 J3 A B

A	A
B	B

A B

PROFINET

5E TIA/EIA-568-B



PROFINET

B4.2

PROFINET GDHF-APNX1

(GSDML)

www.gdetec.com GSDML

B4.3 PROFINET

PROFINET GDHF-APNX1 PROFINET PROFINET

PPO

Parameter/Process Data Objects / PPO

B4.3.1PROFINET

GDHF-APNX1 PROFINET

PROFINET

P33.0		[0] [1]	0	1	0
P33.2		[0]PPO1 [1]PPO2 [2]PPO5	0	2	1
P33.5		[0] [1] [2] [3]	0	3	0
P33.6		ms	0	1000	50
P33.7		[0] [1]	0	1	1
P33.8		s	0.0	10.0	3.0
P33.9	[WO]		0	1000	0
P33.10	[WO]	[0] ×1 [1] ×10 [2] ×100 [3] ×1000 [4] ×10000	0	4	0
…	…	…	…		…
P33.45	[WO]				

PPP05

3.

HF650N

4.

PLC

5.

HF650N

6.

PLC

7.

PROFINET GDHF-APNX1 100Mb/s

B4.4

B4.4.1 PPO

	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15
PPO1	W0	W1	W2	W3	W4	W5										
PPO2	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9						
PPO5	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13		

PPO

B4.4.2

PLC

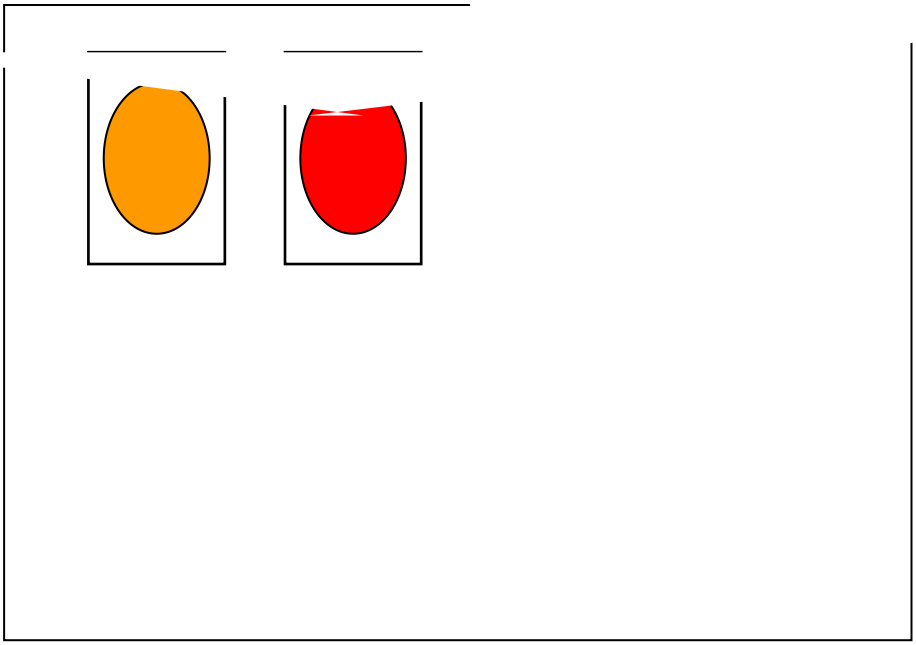
WO	PA_CTRL	bit		
		0	PA_ENABLE	‘0’ ‘1’
		1	WRITE	‘0’ ‘1’
		2	SAVE_to_FLASH	‘0’ ‘1’ FLASH
		3 ~ 15	Reserved	
W1	Address	byte	[15..08]	[07..00]
		Data		
W2	0	0		
W3	Data	16		

PLC

WO	PA_STATUS	bit		
		0	Reserved	
		1	Reserved	
		2	SAVE_to_FLASH	‘0’ ‘1’ FLASH
		3	ILLEGAL_ADDRESS	‘0’ ‘1’
		4 ~ 15	Reserved	
W1	Address	byte	[15..08]	[07..00]
		Data		
W2	0	0		
W3	Data	16		

B4.5

GDHF-APNX1 4
GDHF-APNX1
LED



HF650N

(1)

CWO.0	RUN	‘0’ ‘1’
CWO.1	RUN@REV	‘0’ ‘1’
CWO.2	AntiCrabOpen	‘0’ ‘1’
CWO.3	RESET	‘0’ ‘1’
CWO.4	External FAULT	‘0’ ‘1’ PROFINET
CWO.5	External ALARM	‘0’ ‘1’ PROFINET
CWO.6	DRIVE ENABLE	‘0’ ‘1’
CWO.7	MA/SL Switch	
CWO.8	SPD/TRQ Switch	‘0’ ‘1’
CWO.9	HOOK	‘0’ ‘1’
CWO.10	FIELD ENABLE	‘0’ ‘1’
CWO.11	Torque_Limit_Ctrl	‘0’ ‘1’ PROFINET
CWO.12 CWO.13	MOTION_CTRL	‘00’ 1 ‘01’ 2 ‘10’ 3 ‘11’ 4
CWO.14	TORQUE_ZERO	‘0’ ‘1’

CWO.15	FREE_RUNNING_STOP	‘0’ ‘1’

2

SWO.0	READY	‘0’ ‘1’
SWO.1	RUN	‘0’ ‘1’
SWO.2	FAULT	‘0’ ‘1’
SWO.3	MOTOR BRAKE	‘0’ ‘1’
SWO.4	WARNING	‘0’ ‘1’
SWO.5	DIRECTION	‘0’ ‘1’
SWO.6	M_STEP0	1 ‘0’ 1 ‘1’ 1
SWO.7	M_STEP1	2 ‘0’ 2 ‘1’ 2
SWO.8	M_STEP2	3 ‘0’ 3 ‘1’ 3
SWO.9	M_STEP3	4 ‘0’ 4 ‘1’ 4
SWO.10	Reserved	
SWO.11	Reserved	
SWO.12	REMOTE/LOCAL	/ ‘0’ ‘1’
SWO.13	Reserved	
SWO.14	MOTION SEL	‘00’ 1 ‘01’ 2

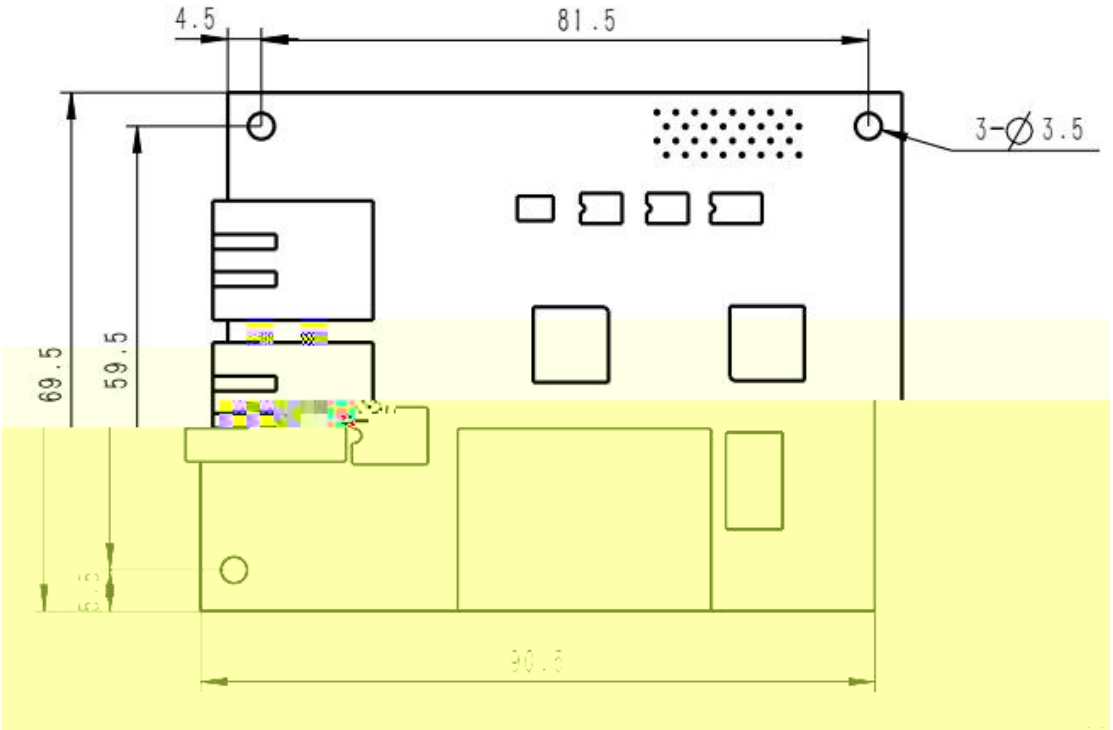
SW0.15		‘10’ 3 ‘11’ 4

16 1 15

PROFINET PROFINET

16 PROFINET

B4.6



PROFINET mm

HF650N

PROFINET

B4.7 PROFINET

PROFINET

5E TIA/EIA-568-B

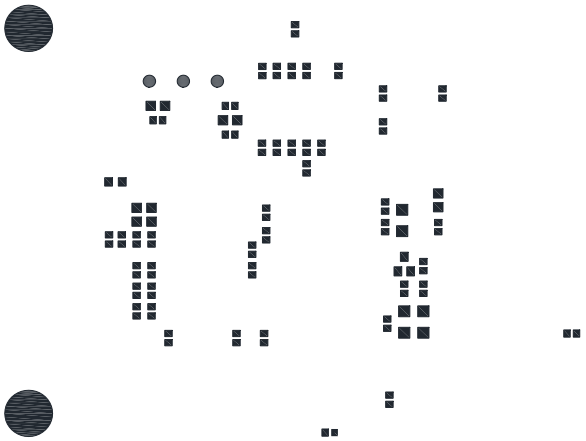
	A PROFINET	B DIN 19245 Part1	
	135~165(3~20MHz)	100~130(f>100kHz)	W
	<30	<60	pF/m
	<110	--	Ω/km
	>0.64	>0.53	mm
	>0.34	>0.22	mm^2

100

100Mbit/s

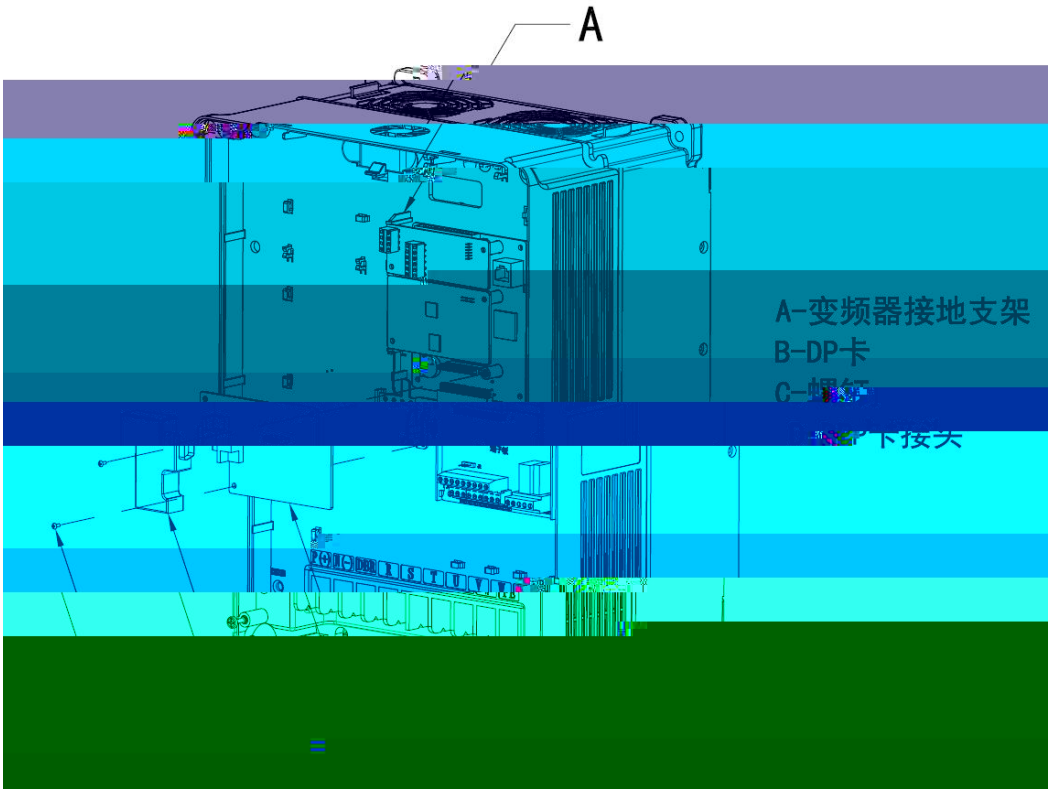
PROFINET V2.31

B5 DP



EMC GDHF-ADPX1

DP



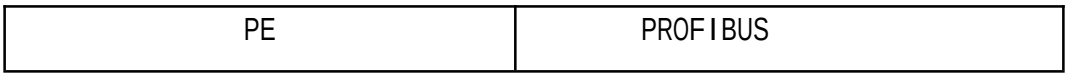
15KW DP

DP

B5.1 PROFIBUS

DP

B1	B
A1	A
PE	PROFIBUS
B2	B
A2	A



A B

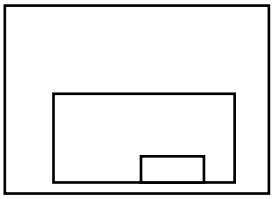
M PE

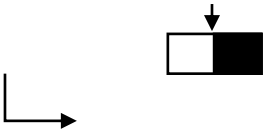
PROFIBUS

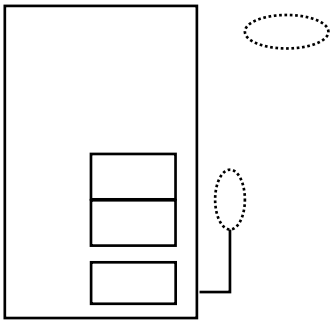
PROFIBUS

PROFIBUS GDHF-ADPX1 PE

PROFIBUS







PROFIBUS

P33.0	Profibus	[0] [1]	0 1	0
P33.1		PLC	1 255	1
P33.2		[0]PPO1 [1]PPO2 [2]PPO5 [3]GUIDE	0 3	2
P33.3			0 16	14
P33.4			0 16	14
P33.5		[0] [1] [2] [3]	0 3	0
P33.6		ms	0 1000	50
P33.7		[0] [1]	0 1	0
P33.8		s	0.0 10.0	3.0
P33.13	[WO]		0 1000	0
P33.14	[WO]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000	0 4	0
…	…	…	…	…
P33.45	[WO]		0 1000	0
P33.46	[WO]	[0] × 1 [1] × 10 [2] × 100 [3] × 1000 [4] × 10000 [5] [%] × 1 [6] [%] × 10 [7] [%] × 100	0 4	0
…	…	…	…	…

1.PROFIBUS

[0] PROFIBUS [1] PROFIBUS

2.

PROFIBUS

3.PPO

PROFIBUS PPO PPO

4.

PPO [PPO1] 6 words in 6 words out [PPO2] 10 words in 10 words out [PPO5] 14 words in 14 words out [GUIDE] 16 words in 16 words out

5.

PPO [PPO1] 6 words in 6 words out [PPO2] 10 words in 10 words out [PPO5] 14 words in 14 words out [GUIDE] 16 words in 16 words out

6.

HF650N

7.

PLC

8.

HF650N

9.

PLC

10.

PROFIBUS DP GDHF-ADPX1 PROFIBUS 9.6 kbit/s 19.2 kbit/s 45.45 kbit/s 93.75 kbit/s 187.5 kbit/s 500 kbit/s 1.5 Mbit/s 3Mbit/s 6 Mbit/s 12 Mbit/s GDHF-ADPX1

OF DP

OFIBU GDHF-AD PROFIBUS-DP ROFIB DP

PROFIBUS-DP PPO Parameter/Process Data Objects /

PPO

B5.5

CW0.6	DRIVE ENABLE	‘0’ ‘1’
CW0.8	SPD/TRQ Switch	‘0’ ‘1’
CW0.9	HOOK	‘0’ ‘1’
CW0.10	Anti Crab Open	‘0’ ‘1’
CW0.11	Torque_Limit_Ctrl	‘0’ ‘1’ PROFIBUS
CW0.12 CW0.13	MOTION_CTRL	‘00’ 1 ‘01’ 2 ‘10’ 3 ‘11’ 4
CW0.14	TORQUE_ZERO	‘0’ ‘1’
CW0.15	FREE_RUNNING_STOP	‘0’ ‘1’

2

SW0.0	READY	‘0’ ‘1’
SW0.1	RUN	‘0’ ‘1’
SW0.2	FAULT	‘0’ ‘1’
SW0.3	MOTOR BRAKE	‘0’ ‘1’

SWO.4	WARNING	‘0’ ‘1’
SWO.5	DIRECTION	‘0’ ‘1’
SWO.6	M_STEP0	1 ‘0’ 1 ‘1’ 1
SWO.7	M_STEP1	2 ‘0’ 2 ‘1’ 2
SWO.8	M_STEP2	3 ‘0’ 3 ‘1’ 3
SWO.9	M_STEP3	4 ‘0’ 4 ‘1’ 4
SWO.10	Reserved	
SWO.11	Reserved	
SWO.12	REMOTE/LOCAL	/ ‘0’ ‘1’
SWO.13	Reserved	
SWO.14 SWO.15	MOTION SEL	‘00’ 1 ‘01’ 2 ‘10’ 3 ‘11’ 4

16 1 15

PROFIBUS

16 PROFIBUS

B5.6 PPO

	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13
PPO1	W0	W1	W2	W3	W4	W5								
PPO2	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9				
PPO5	W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13

PPO

B5.7

PLC

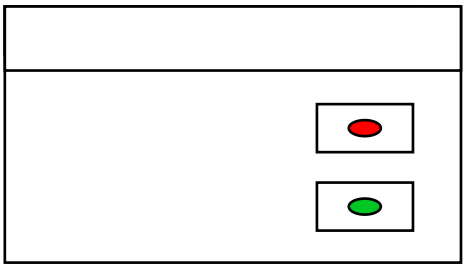
		bit			
W0	PA_CTRL	0	PA_ENABLE	‘0’ ‘1’	
		1	WRITE	‘0’ ‘1’	
		2	SAVE_to_FLASH	‘0’ ‘1’	FLASH
		3~15	Reserved		
W1	Address	byte	[15..08]		[07..00]
		Data			

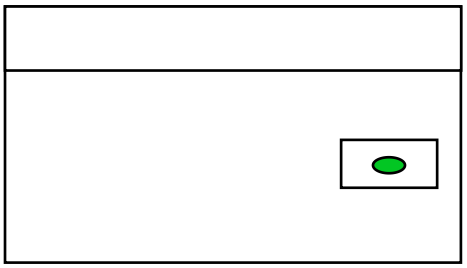
W0	PA_STATUS	bit		
		0	Reserved	
		1	Reserved	
		2	SAVE_to_FLASH	‘0’ ‘1’ FLASH
		3	ILLEGAL_ADDRESS	‘0’ ‘1’
		4~15	Reserved	
W1	Address	byte	[15..08]	[07..00]
		Data		
W2	0	0		
W3	Data	16		

B5.8

GDHF-ADPX1 2 LED 1 LED LED

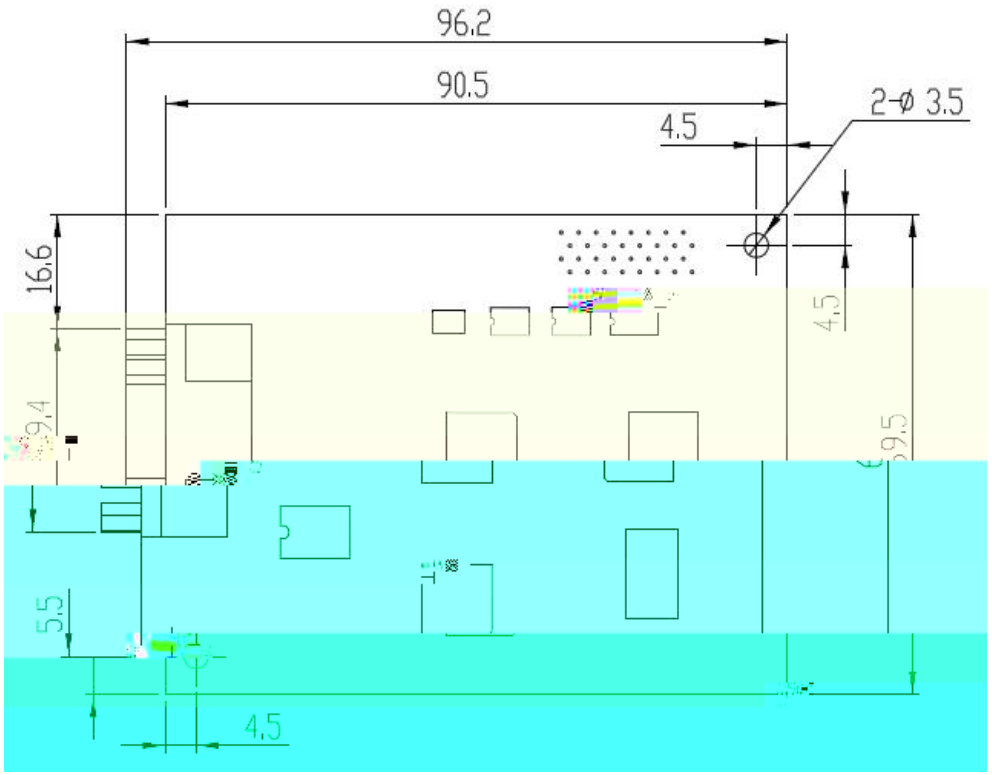
GDHF-ADPX1 LED





PBF		PROFIBUS PROFIBUS
PBOK		PROFIBUS PROFIBUS
D1		DP 4Hz DP 1Hz DP

B5.9



PROFIBUS_DP mm

HF650N

DIP

-
- PPO
-

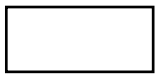
B5.10 PROFIBUS

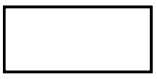
PROFIBUS-DP

127 31 1

RS-485

A	B	
PROFIBUS DP	DIN 19245 Part1	
135~165(3~20MHz)	100~130(f>100kHz)	W
<30	<60	





港迪刀盘主驱专用变频器 HF650N 系列

使用说明书版本：1.03

1

2

3

Wuhan Guide Technology Co.,Ltd.

6

430223
86-027-87927230
shfw@gdetec.com
www.gdetec.com
400-0077-570

武汉港迪技术股份有限公司
Wuhan Guide Technology Co.,Ltd.

GDHF650N-ZQ-DOC-UM-REV1.03
2024.04