GUIDE

HF680N

1.

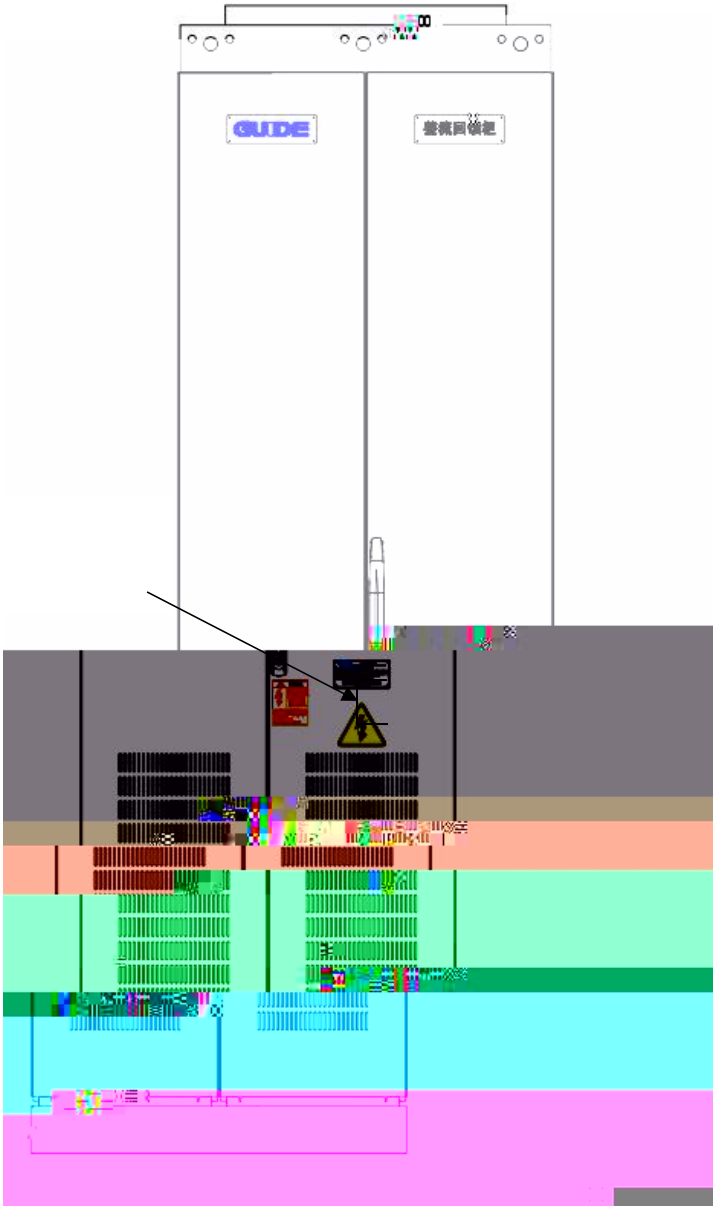
1.1

1

RCD

RCM

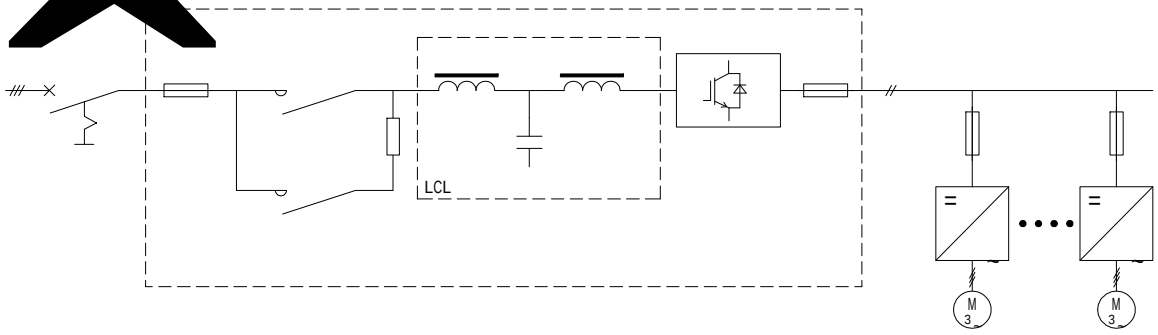
HF680N02C-400-5



2

1

HF680N LCL



IGBT AFE

DC24V

IGBT

2.2

1

AFE

2

		PID
		/ /
		HE
		/ /

2.3

GDHF-ADPX1 DP Profibus DP GDHF-ADPX1 HF680N02M HF680N03M

GDHF-APGX1 PG F6 PG GDHF-APGX1 HF680N03M 15V PG

PN

2.4

1. / “ ” / 2. 3. - R S T - U V W - P N 4. 5 5. , ,

1. ä 2. 3. 40 4. 1.2 ‘

2.4.1

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

1 5

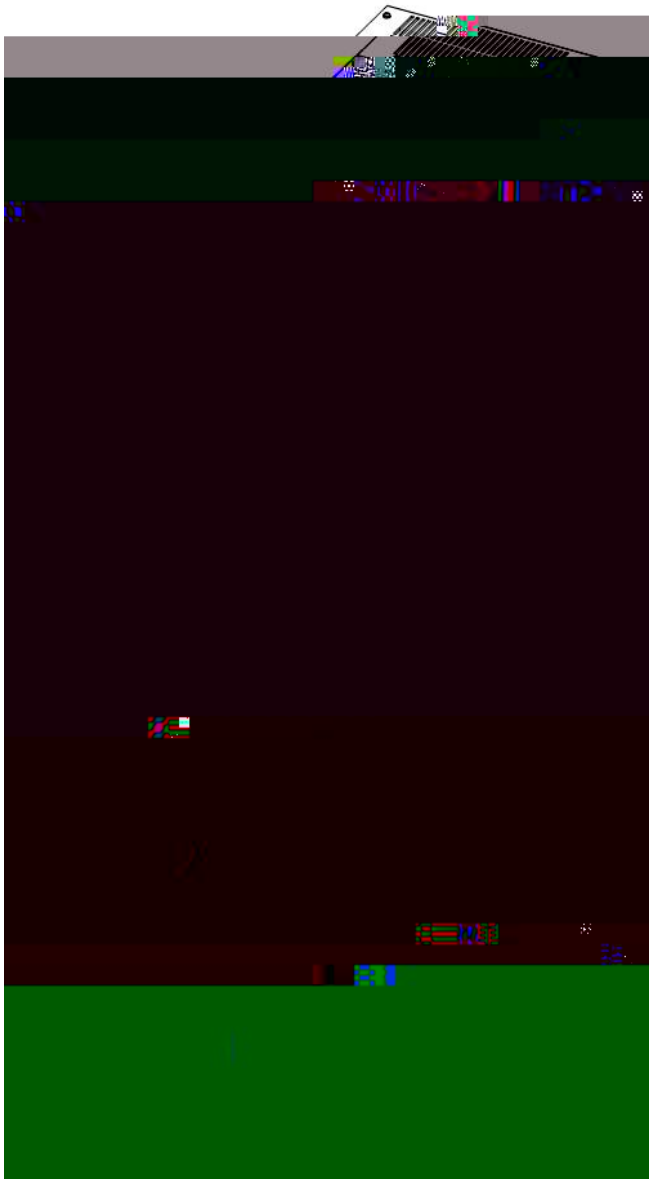
2.4.2

-
- -10 +40 +40 +50 1
  2% 50
- 95%RH
-
-
-
-
-
- 1000 1000 100 1%
  3000

2.4.3

	A ≥ 200mm	B ≥ 50mm

50mm



LCL

3.

3.1

LCL

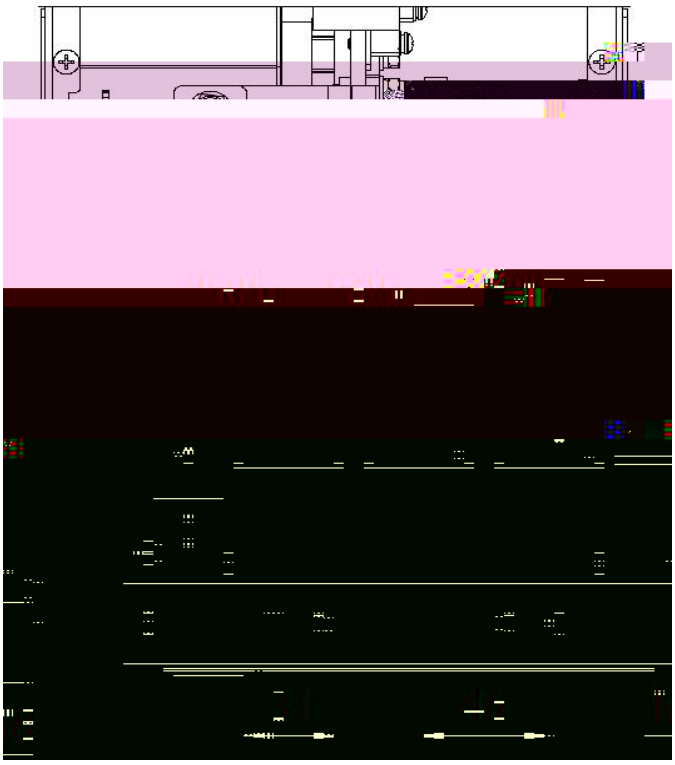
LCL

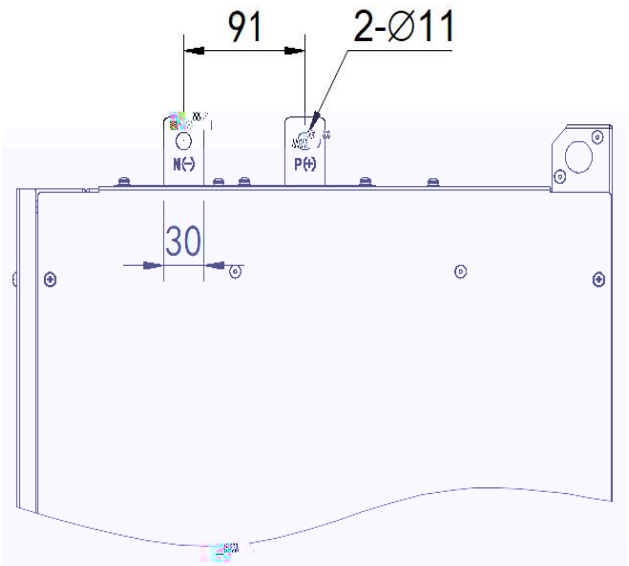
3.2

1

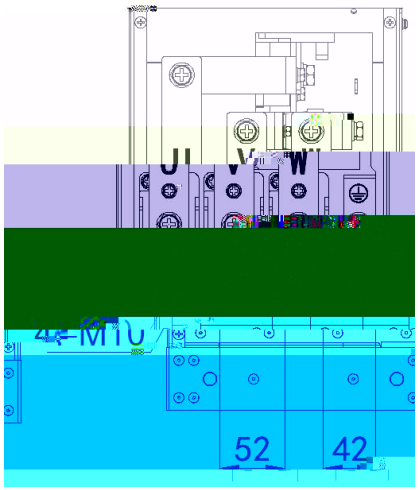
P +	
N -	
R S T	
	

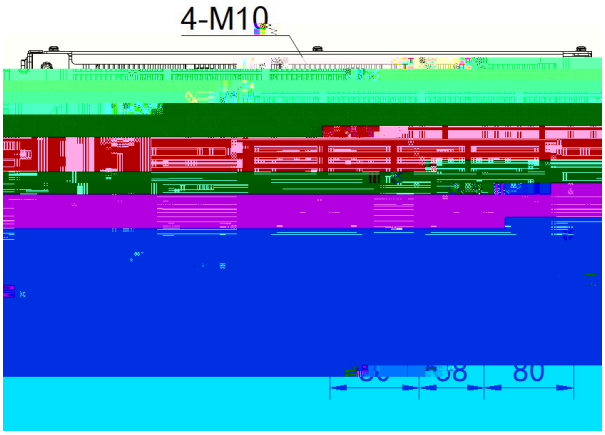
B4





B5





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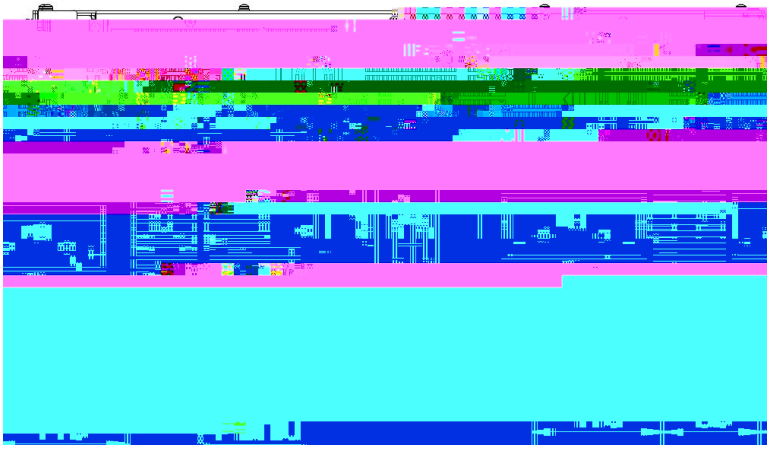
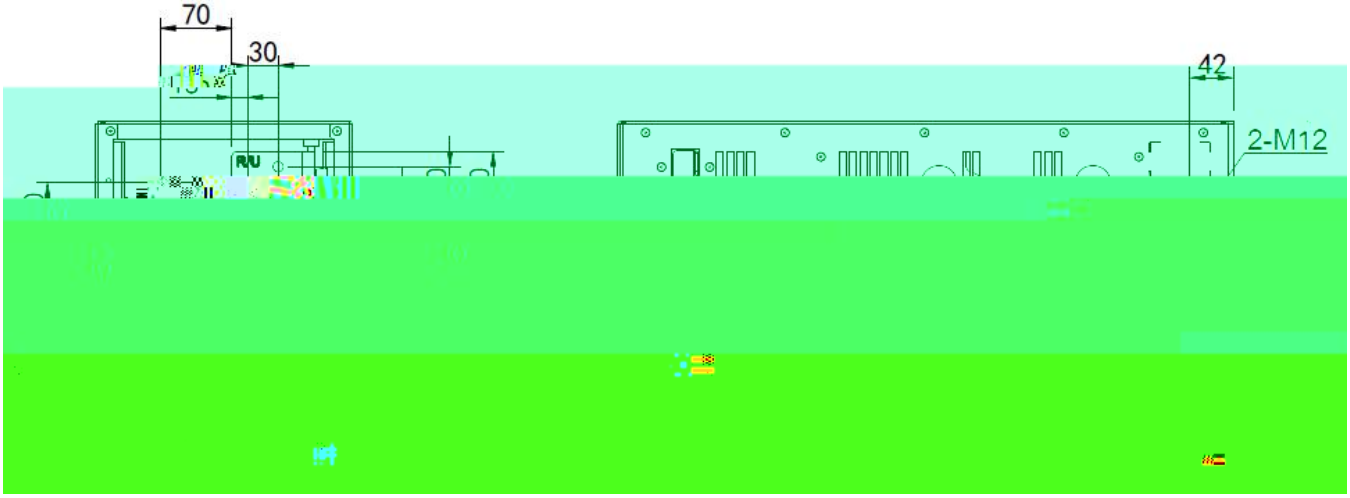
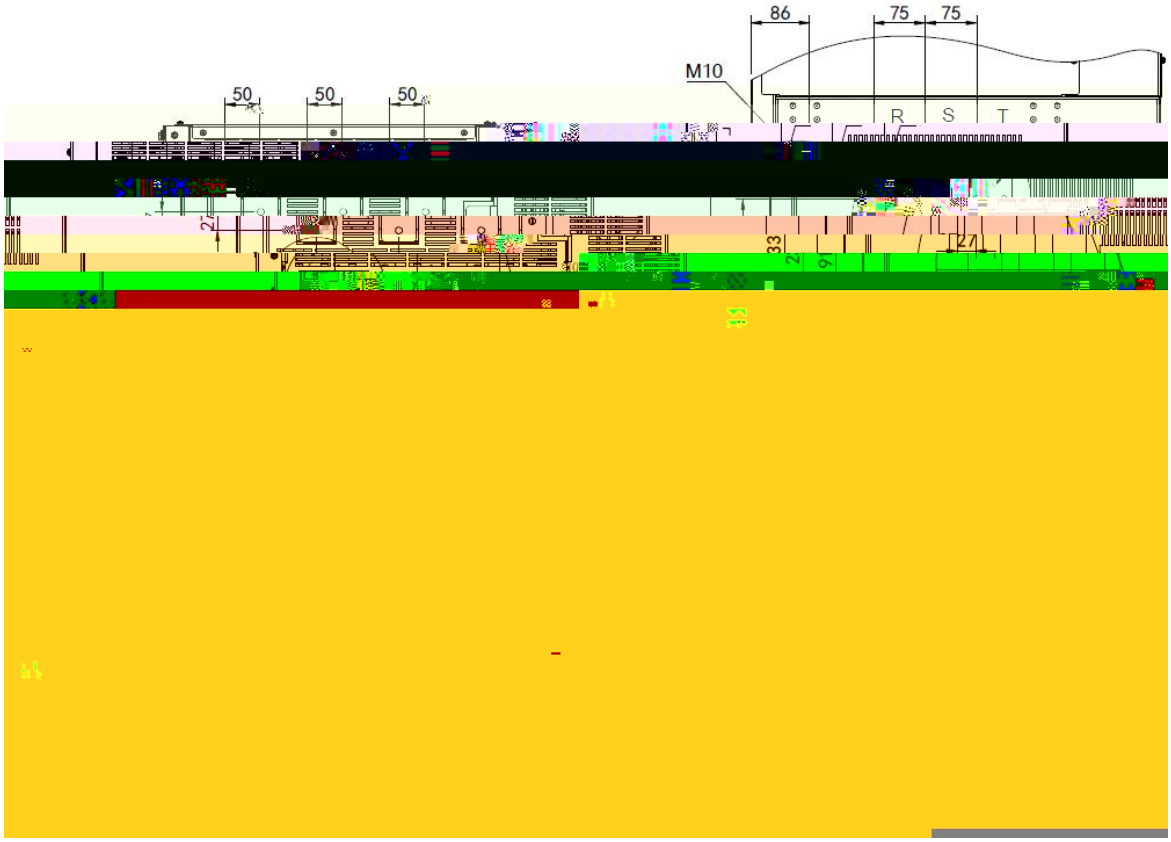




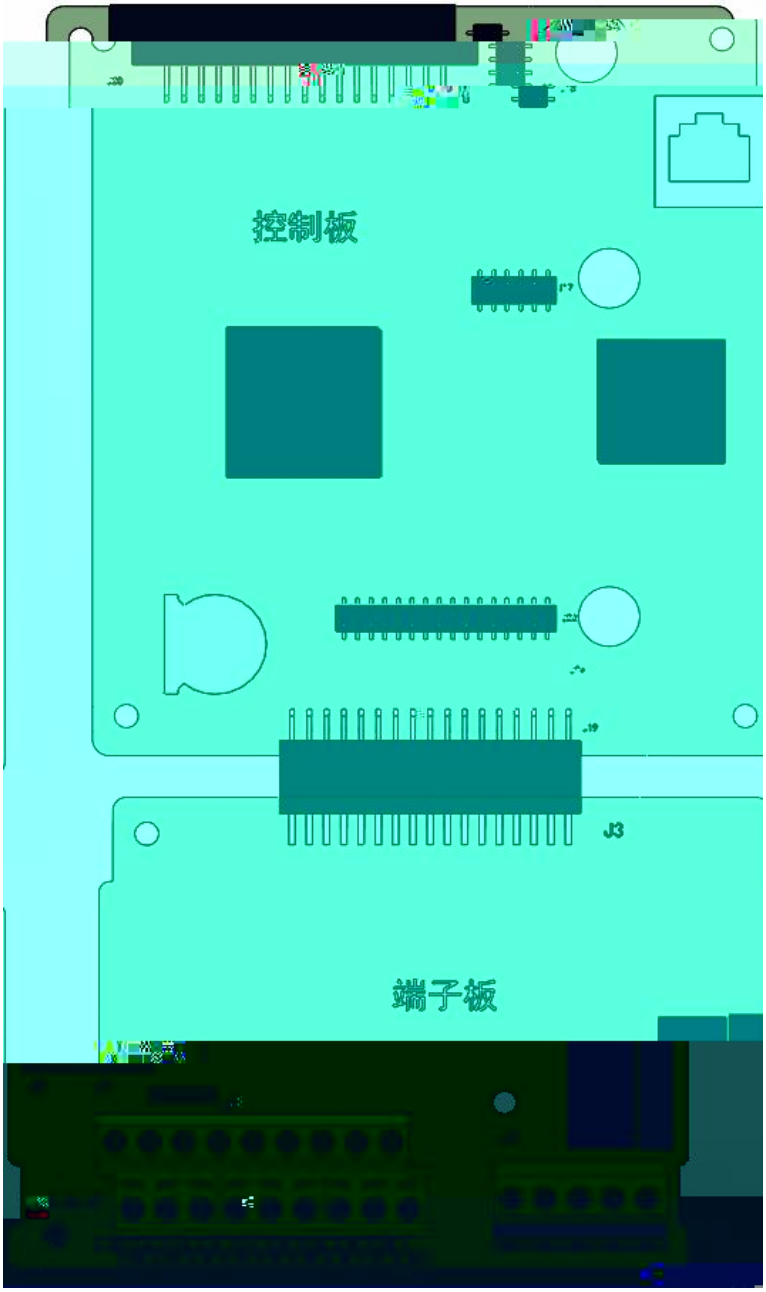
2 LCL

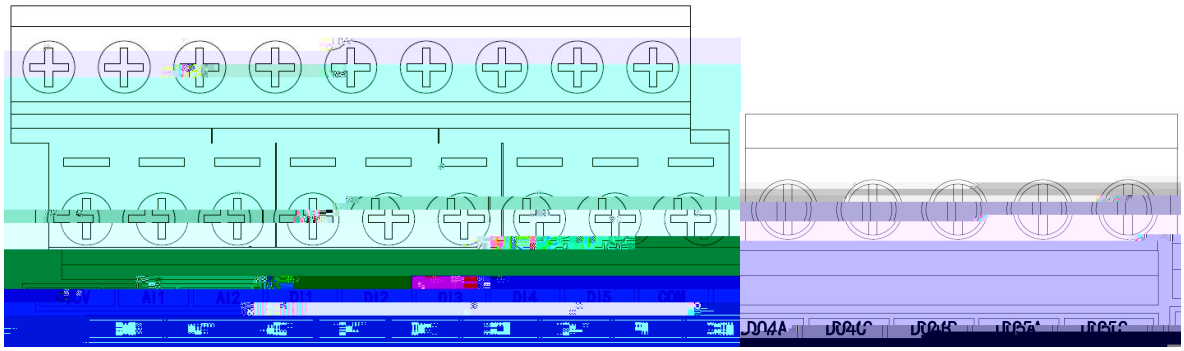
R S T	LCL
	LCL
P + N -	LCL
PTC	LCL



B6 LCL

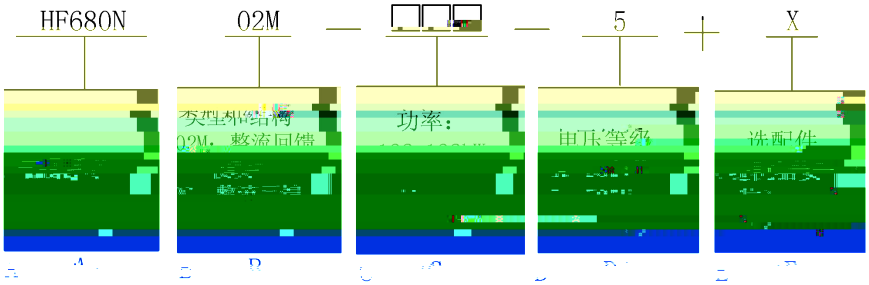
2





	+10V-GND	10V	+10V 50mA 1kΩ~5kΩ
	+24V-COM	24V	+24V 200mA
	PW		24V DI1~DI5 DO1 PW 24V
	AI1-GND	1	DC -10V~10V 100kΩ
	AI2-GND	2	-10VDC~10VDC/0mA~20mA J1 100kΩ 500Ω
	DI1- PW	1	3.3kΩ 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	AO1-GND	1	J2 0V~10V 0mA~20mA
	AO2-GND	2	J8 0V~10V 0mA~20mA
	DO1-COM	1	0V~24V 0mA~50mA
	DO4A-DO4C	1	250VAC 3A COSϕ=0.4 30VDC 1A
	DO4B-DO4C	2	
	DO5A-DO5C	3	250VAC 2A COSϕ=0.4 30VDC 1A

	J1	AI2	
	J2	AO1	
	J3	AO2	



A	
B	02M 02C
C	132 132kW 3000 3000kW
D	5 380V 5 500V
E	

MB01	Modbus RTU	DP01	Profibus DP
PN01	Profinet	CAN01	CANopen

	Iac A					Pdch kW	
		Idc A	Pdc kW	Idch A	Pdch kW		
HF680N02C-2000-5	2805	3400	2567	2649	2000	2000	B6*4
HF680N02C-2500-5	3478	4215	3183	3311	2500	2500	B6*5
HF680N02C-3200-5	4152	5032	3799	4238	3200	3200	B6*6

1 HF680N02M
2 HF680N02M

3.4

LCL

	LCL	
HF680N02M-160-5	GDHF680N-LCL-160-5	3 × 7R5
HF680N02M-220-5	GDHF680N-LCL-220-5	3 × 7R5
HF680N02M-315-5	GDHF680N-LCL-355-5	3 × 4R
HF680N02M-355-5	GDHF680N-LCL-355-5	3 × 2R5
HF680N02M-400-5	GDHF680N-LCL-450-5	3 × 2R5
HF680N02M-450-5	GDHF680N-LCL-450-5	3 × 2R5
HF680N02M-500-5	GDHF680N-LCL-560-5	3 × 2R5
HF680N02M-560-5	GDHF680N-LCL-560-5	3 × 2R5

“ ”

LCL

3.6

		380V 500V
		50 / 60Hz
		-10% +10%
		<AC350V 15ms
		AFE
		0.999
		3%
		150% 5 1 180% 5 1
		570 810V
		1kHz 10kHz

3.7

+LCL		kW
HF680N02M-160-5+GDHF680N-LCL-160-5	B4	4.6
HF680N02M-220-5+GDHF680N-LCL-220-5	B5	6.3
HF680N02M-315-5+GDHF680N-LCL-355-5	B6	9.0
HF680N02M-355-5+GDHF680N-LCL-355-5		10.1
HF680N02M-400-5+GDHF680N-LCL-450-5		11.4
HF680N02M-450-5+GDHF680N-LCL-450-5		12.8
HF680N02M-500-5+GDHF680N-LCL-560-5		14.3
HF680N02M-560-5+GDHF680N-LCL-560-5		16.0

3.7

(1) IGBT

(2) 50%

(3) 0.999

(4) 3% GB/T 24337-2009

(5) 380V 500V -10% +10%

(6) DP PN

(7)

(8) 160kW 3200kW

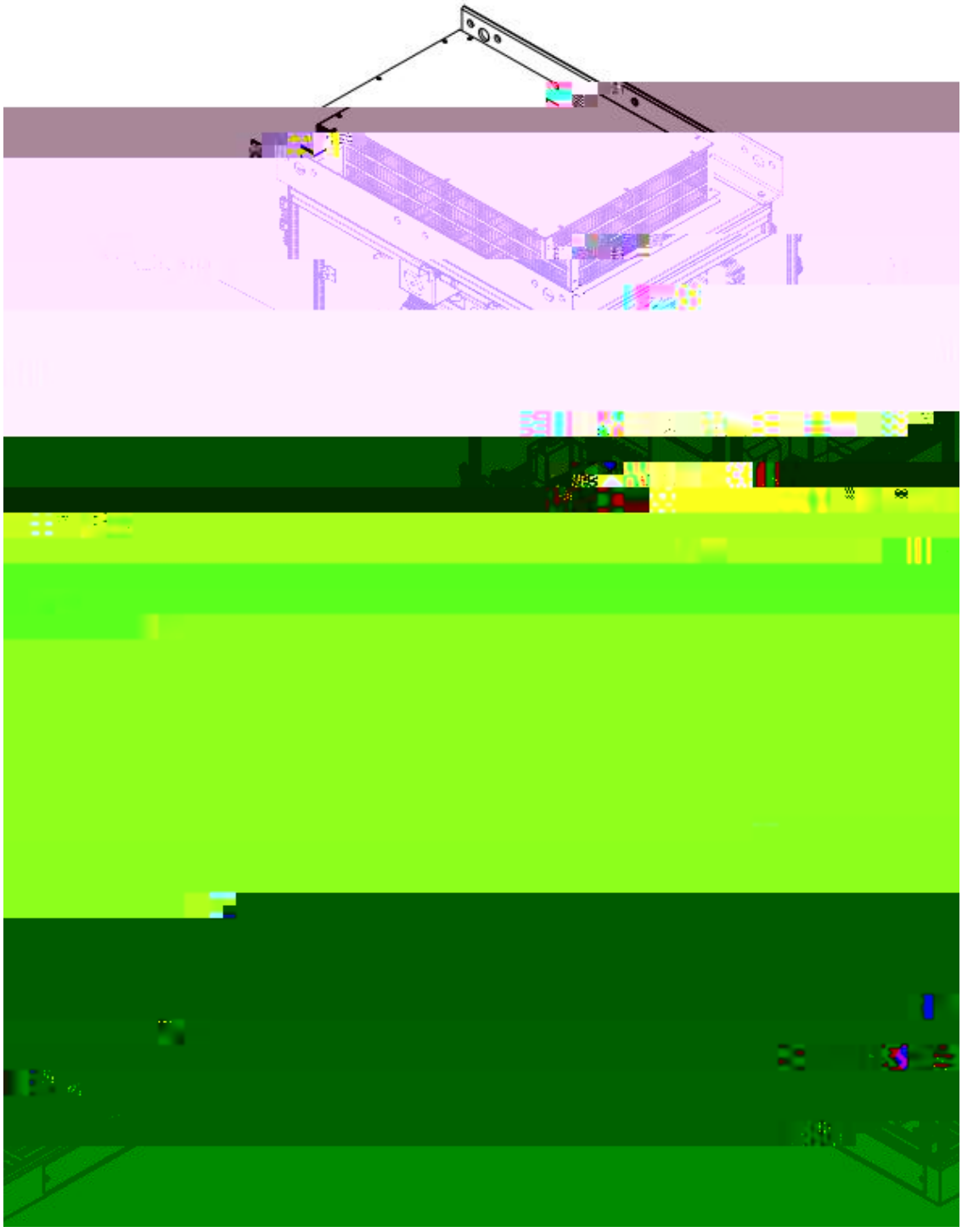
3.8

1

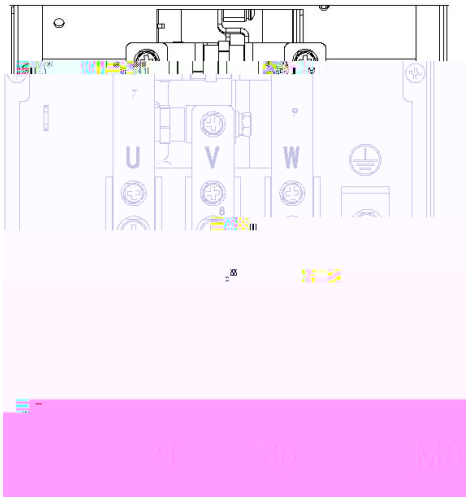
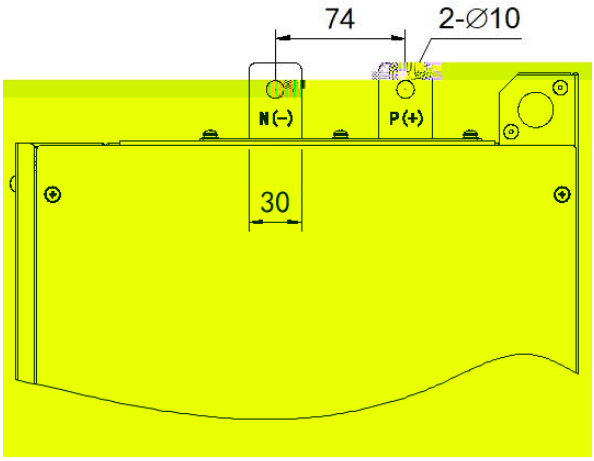
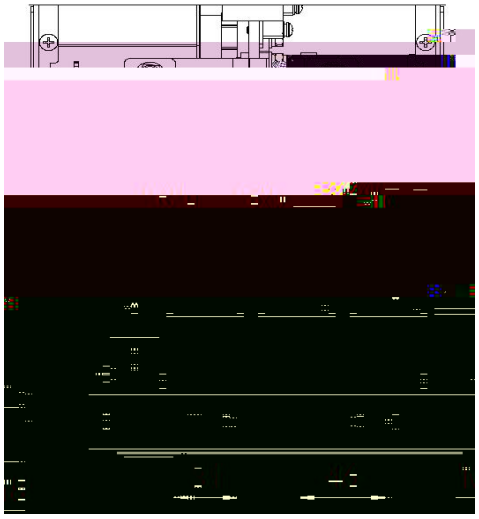
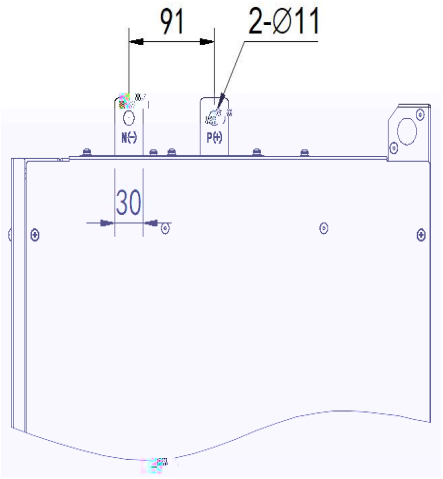
2 500kW

500kW

1 ( ) a



2 b

B3	
	
B4	
	

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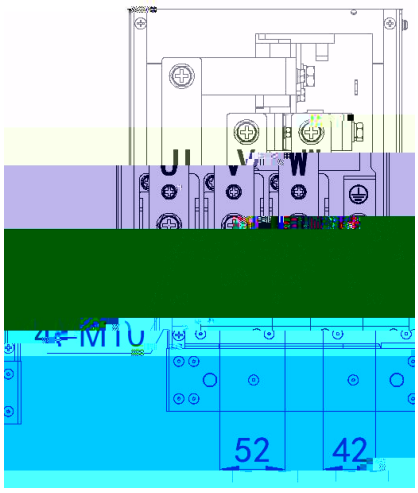
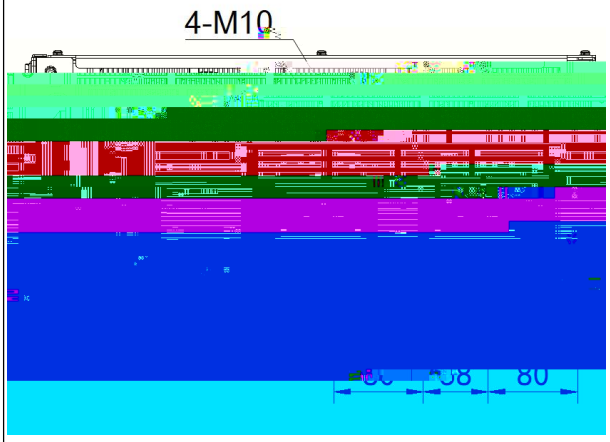
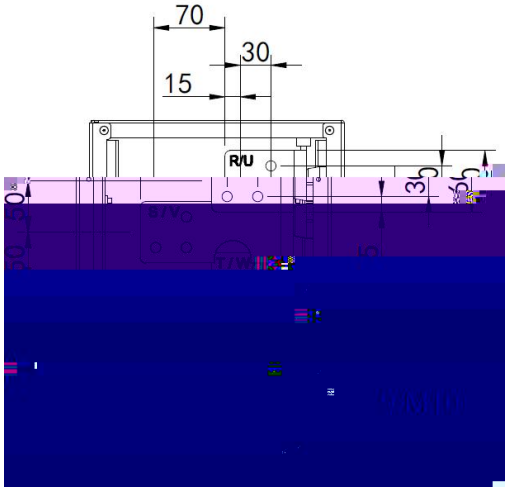
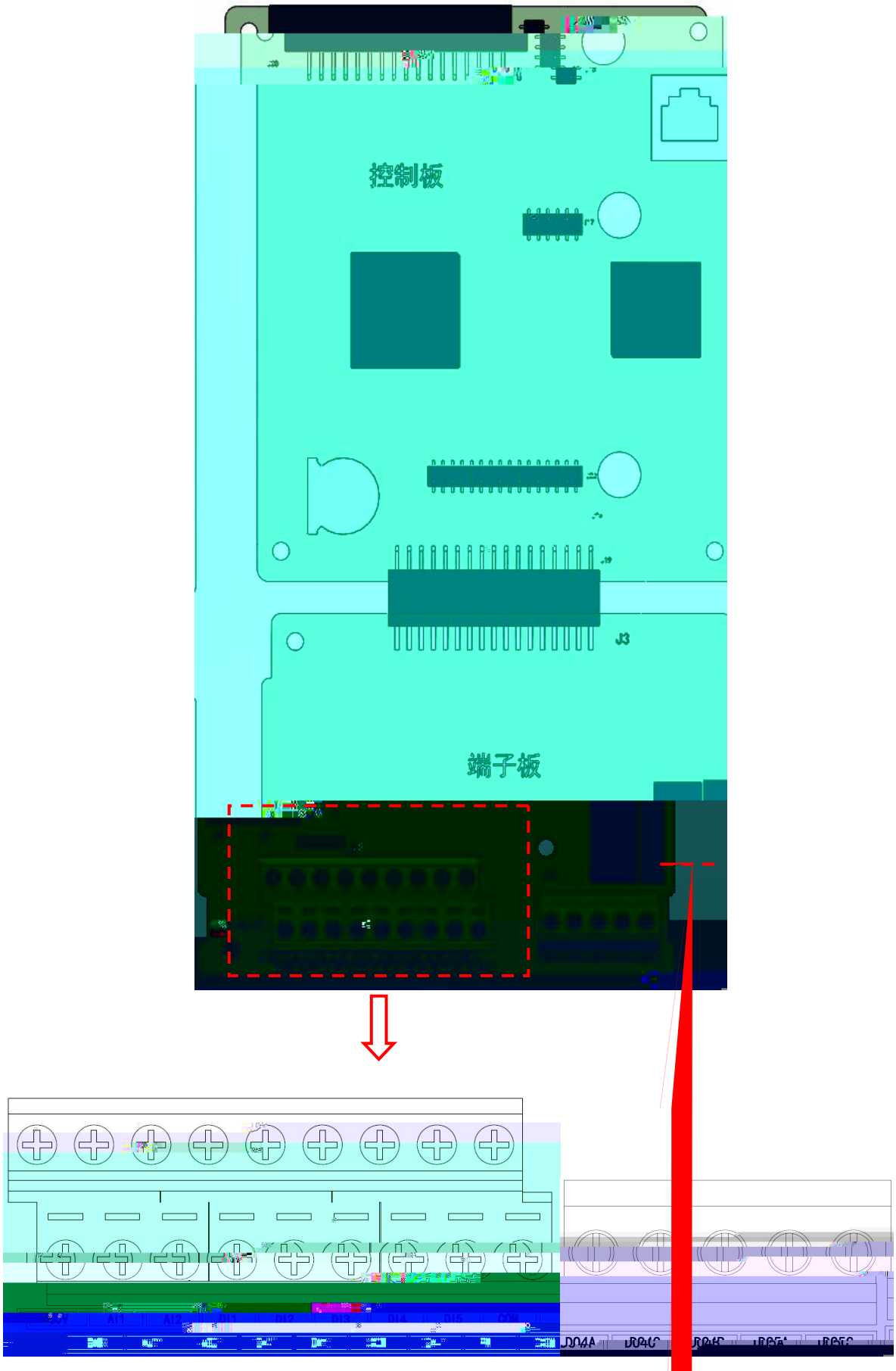




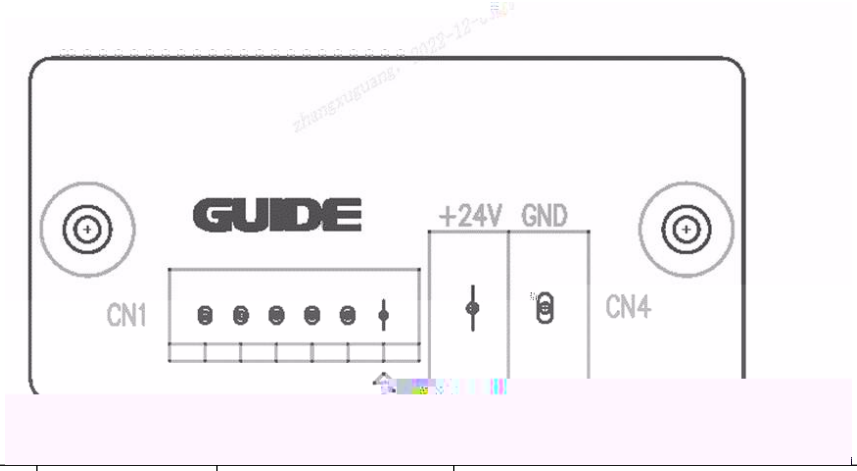
B6




控制板
J3
端子板

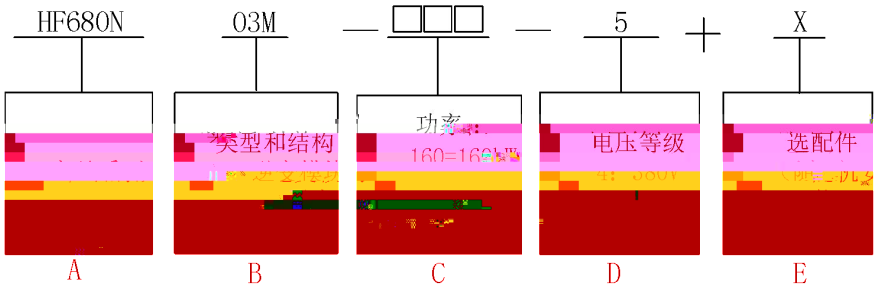
	+10V-GND	10	+10V 50mA 1kΩ~5
	+24V-COM	24V	+24V 200mA
	PW	71	24V DI1~DI5 DO1 PW 24V
	AI1-GND	1	DC -10V~10V 100kΩ
	AI2-GND	2 J1	-10VDC~10VDC/0mA~20mA 100kΩ 500Ω
	DI1- PW	1	3.3kΩ 9V~30V DI1-DI4 500Hz DI5 20KHz
	DI2- PW	2	
	DI3- PW	3	
	DI4- PW	4	
	DI5- PW	5	
	AO1-GND	1	J2 0V~10V 0mA~20mA
	AO2-GND	2	J8 0V~10V 0mA~20mA
	DO1-COM	1	0V~24V 0mA~50mA
	DO4A-DO4C	1	250VAC 3A COSϕ=0.4
	DO4B-DO4C	2	30VDC 1A
	DO5A-DO5C	3	Y2 ڈ ن مد 250VAC 2A COSϕ=0.4 30VDC 1A

2



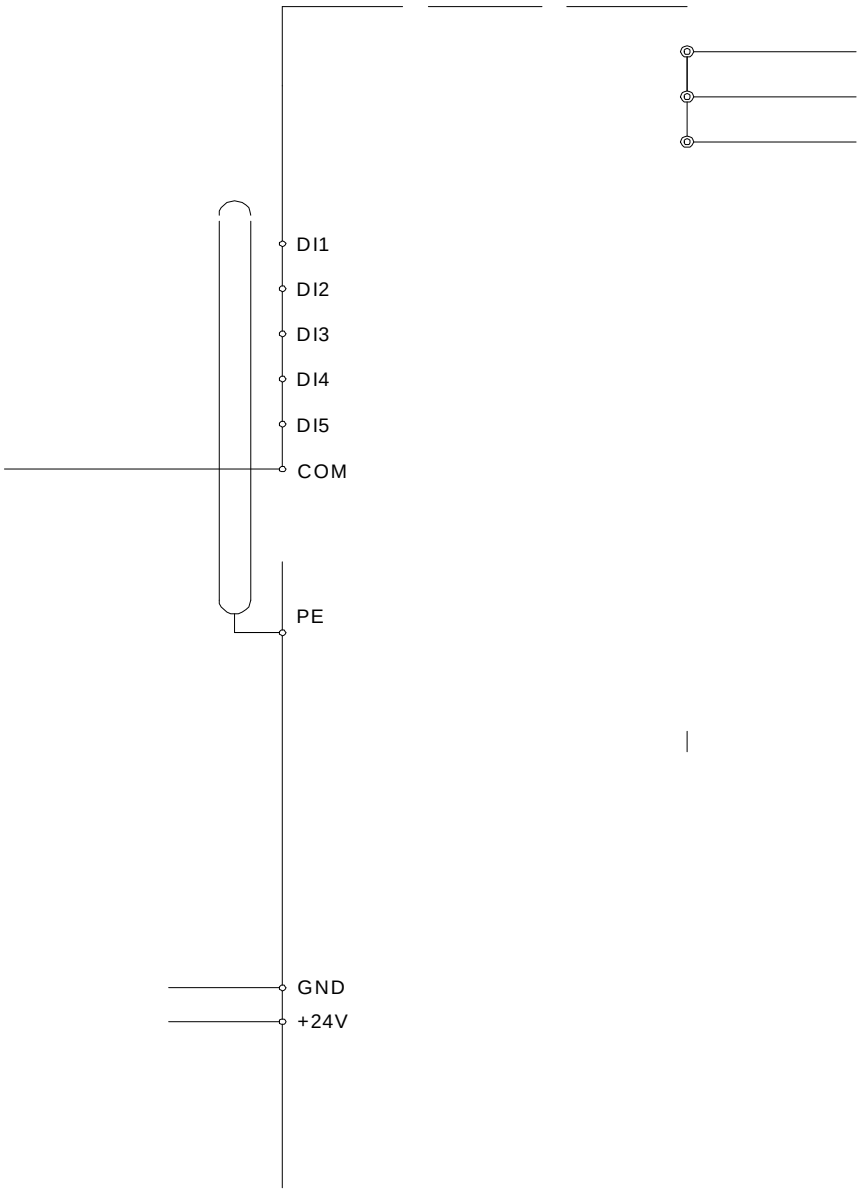
DC+24V	CN4	+24V-GND	
	CN1		L1/L2/L3

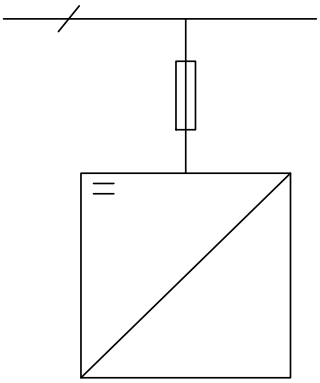
4.3



A	
B	03M 03C
C	160 160kW 1000 1000kW
D	5 380V 5 500V
E	

4.5





HF680N03M-220-5	120	498
HF680N03M-250-5	150	549
HF680N03M-280-5	70*2	611
HF680N03M-315-5	70*2	687
HF680N03M-355-5	90*2	792
HF680N03M-400-5	120*2	925
HF680N03M-450-5	150*2	1055
HF680N03M-500-5	70*4/185*2	1160
HF680N03M-560-5	70*4/185*2	1270

1. 560kW

2. HF680N

4.6

		540V 810V
		(VC) (SVC) V/F
		Profibus DP
		380V 500V 5%
		0 300Hz
		0Hz/200%(VC SVC) 0.8Hz/150%(V/F)
		1kHz 10kHz
		150% 5 1 180% 5 1

4.7

		kW			kW
HF680N03M-045-5	B3	0.8	HF680N03M-220-5	B5	4.2
HF680N03M-055-5		1.0	HF680N03M-250-5		4.8
HF680N03M-075-5	B4	1.4	HF680N03M-280-5	B6	5.6
HF680N03M-090-5		1.7	HF680N03M-315-5		6.3
HF680N03M-110-5		2.1	HF680N03M-355-5		7.1
HF680N03M-132-5		2.5	HF680N03M-400-5		8.0
HF680N03M-160-5		3.0	HF680N03M-450-5		9.0
HF680N03M-185-5	B5	3.5	HF680N03M-500-5		10.0
HF680N03M-200-5		3.8	HF680N03M-560-5		11.2

4.7

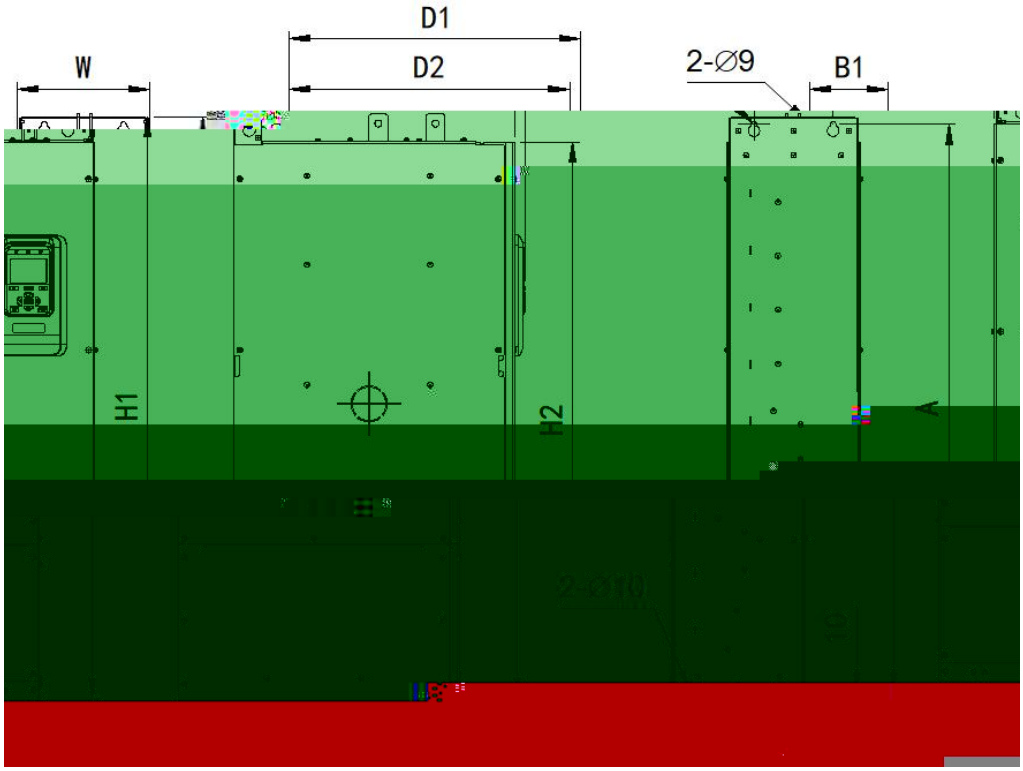
(1) 200%

(2) 50% HF680N

(3) HF680N

5.

5.1



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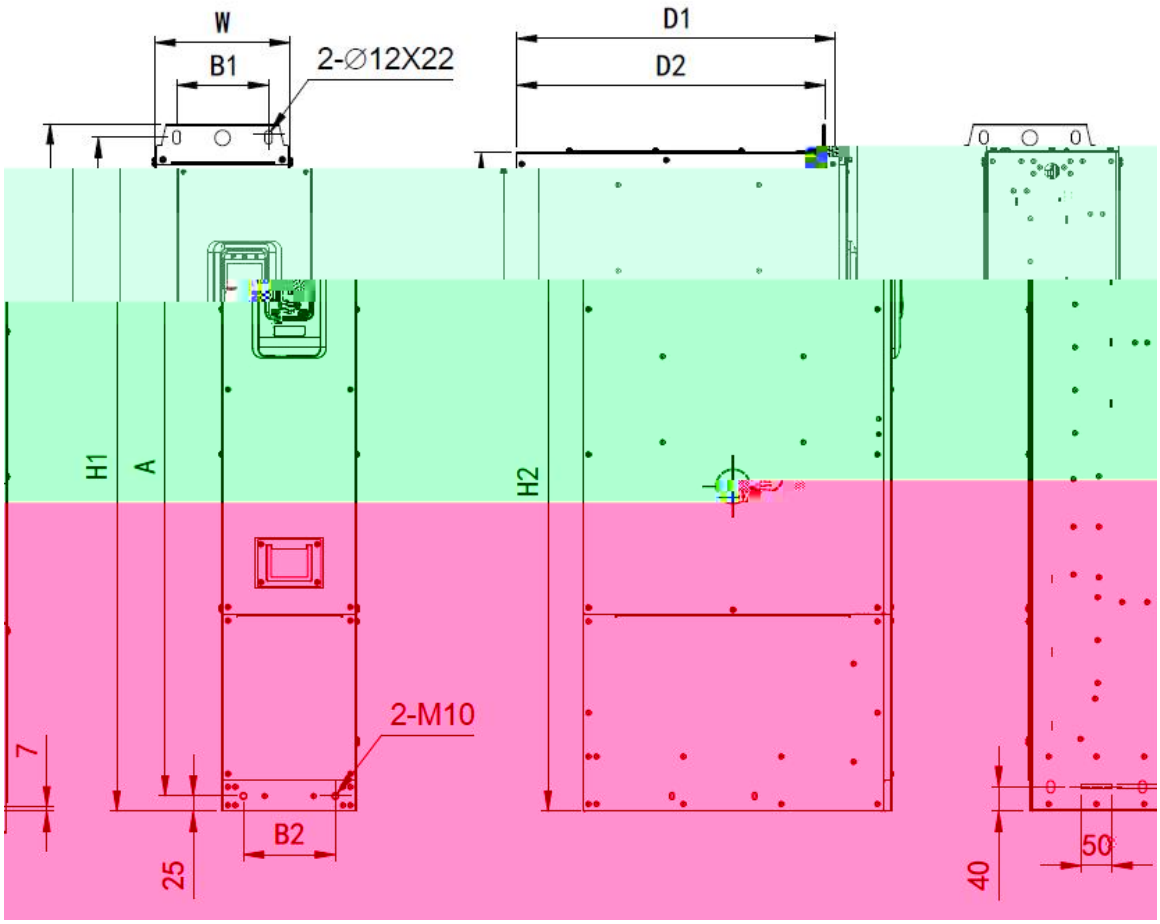

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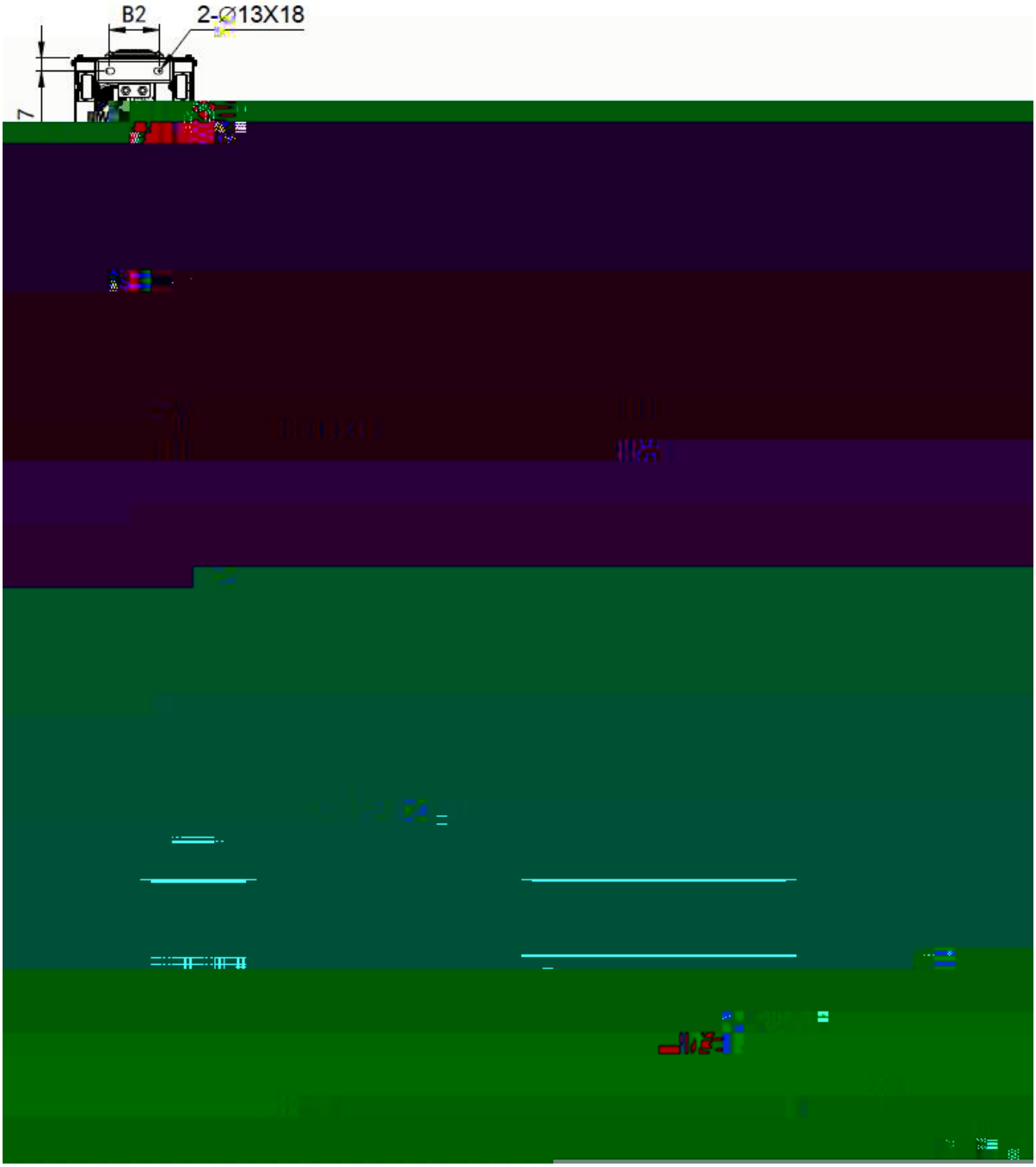

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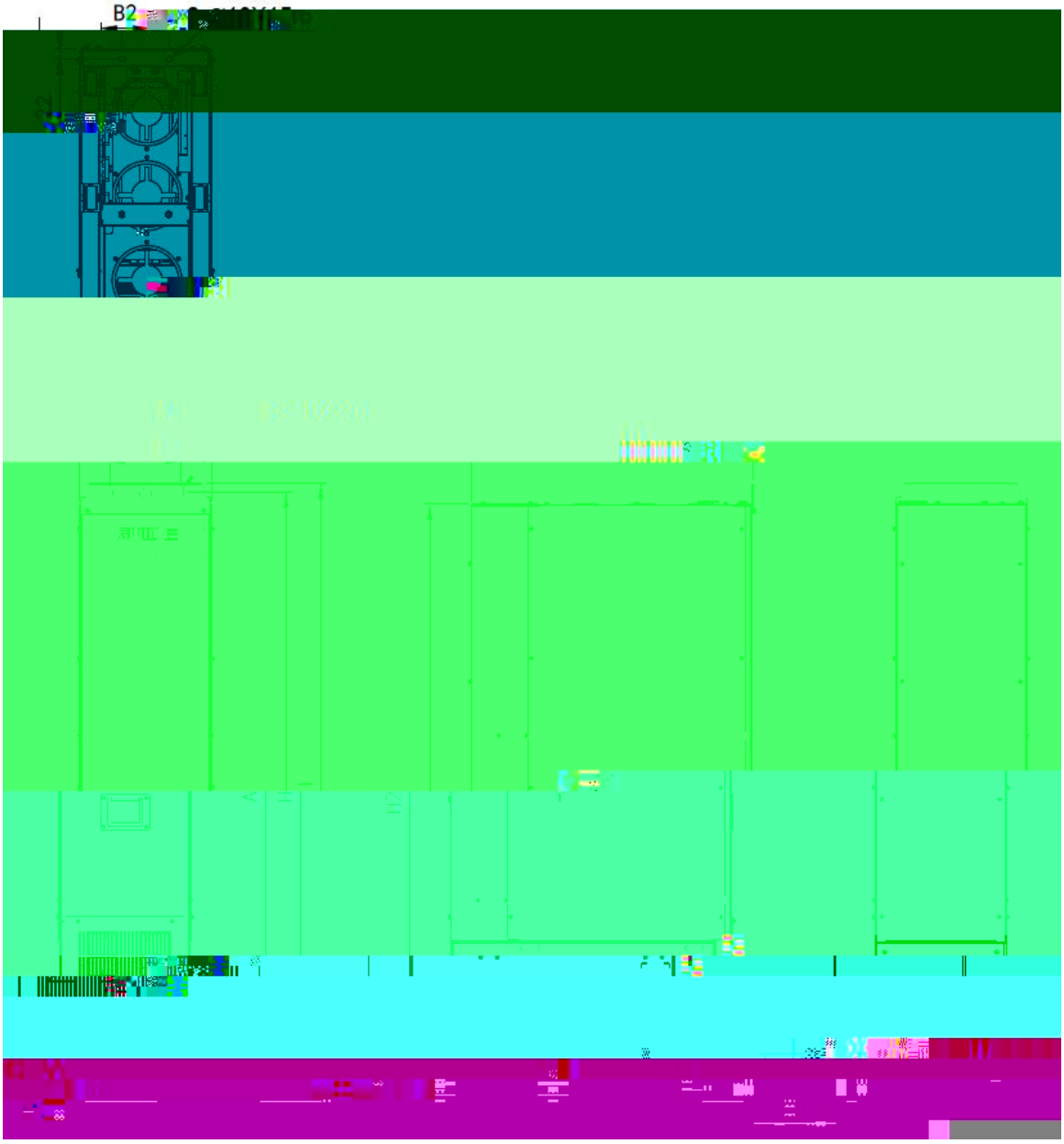
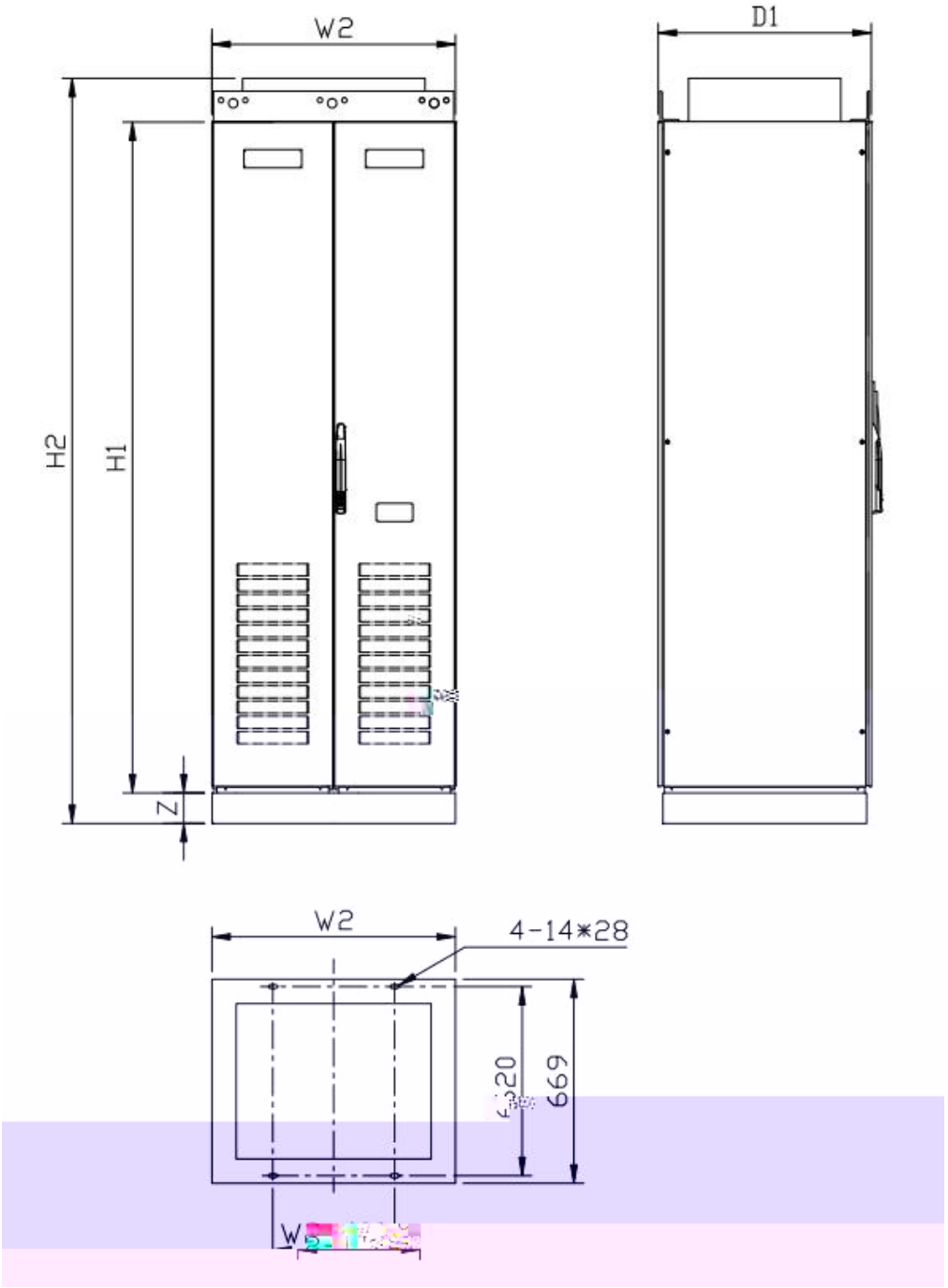


LCL

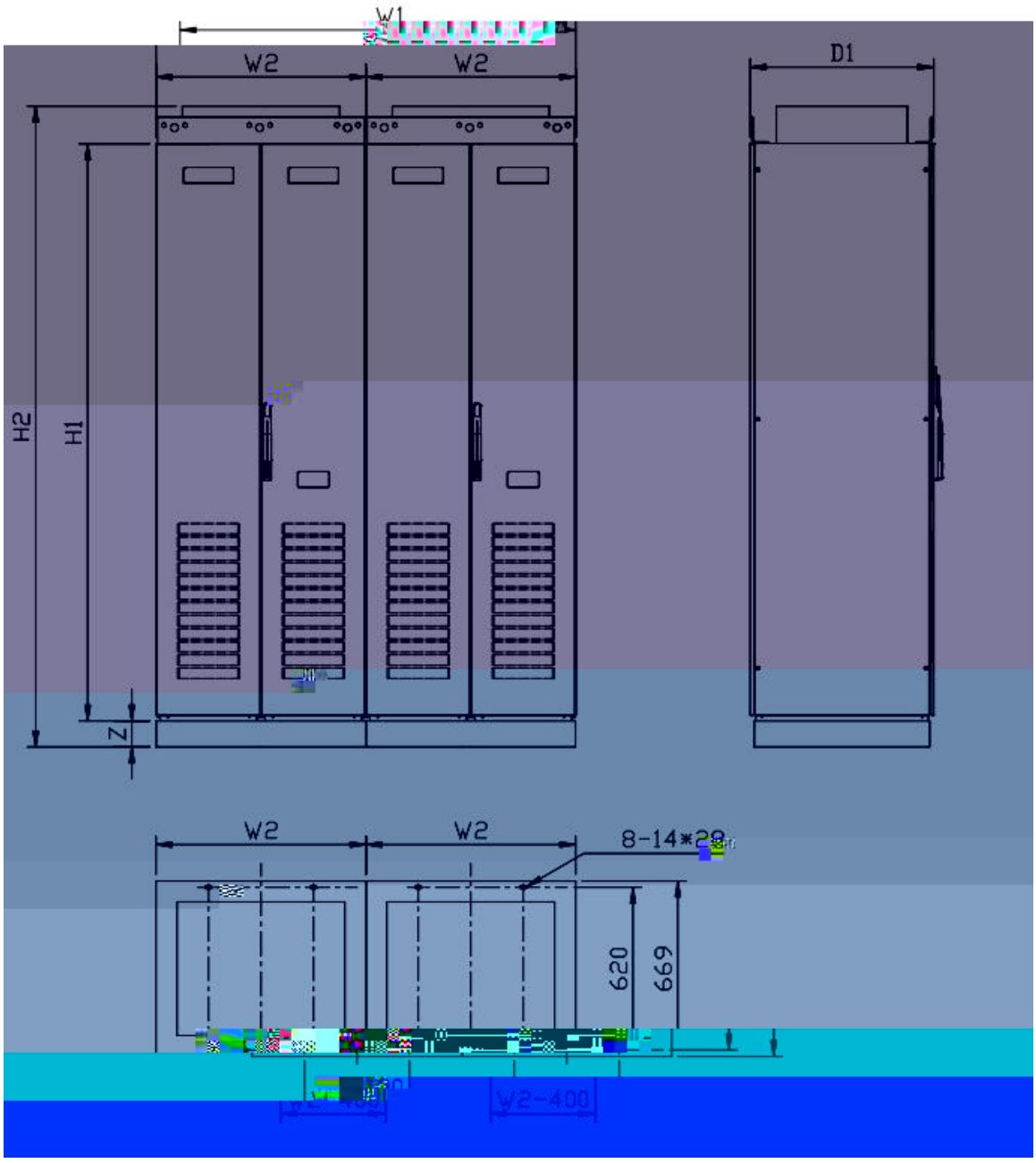
		mm					mm			8.8	kg
		H1	H2	W	D1	D2	A	B1	B2		
HF680N02M-160-5	B4	920	880	210	462	444	899	125	150	4-M8	55
HF680N02M-220-5	B5	1125	1075	220	520	505	1075	150	150	4-M10	80
HF680N02M-315-5	B6	1315	1268	250	618	600	1295	150	100	4-M12	120
HF680N02M-355-5											
HF680N02M-400-5											
HF680N02M-450-5											
HF680N02M-500-5											
HF680N02M-560-5											

5.2

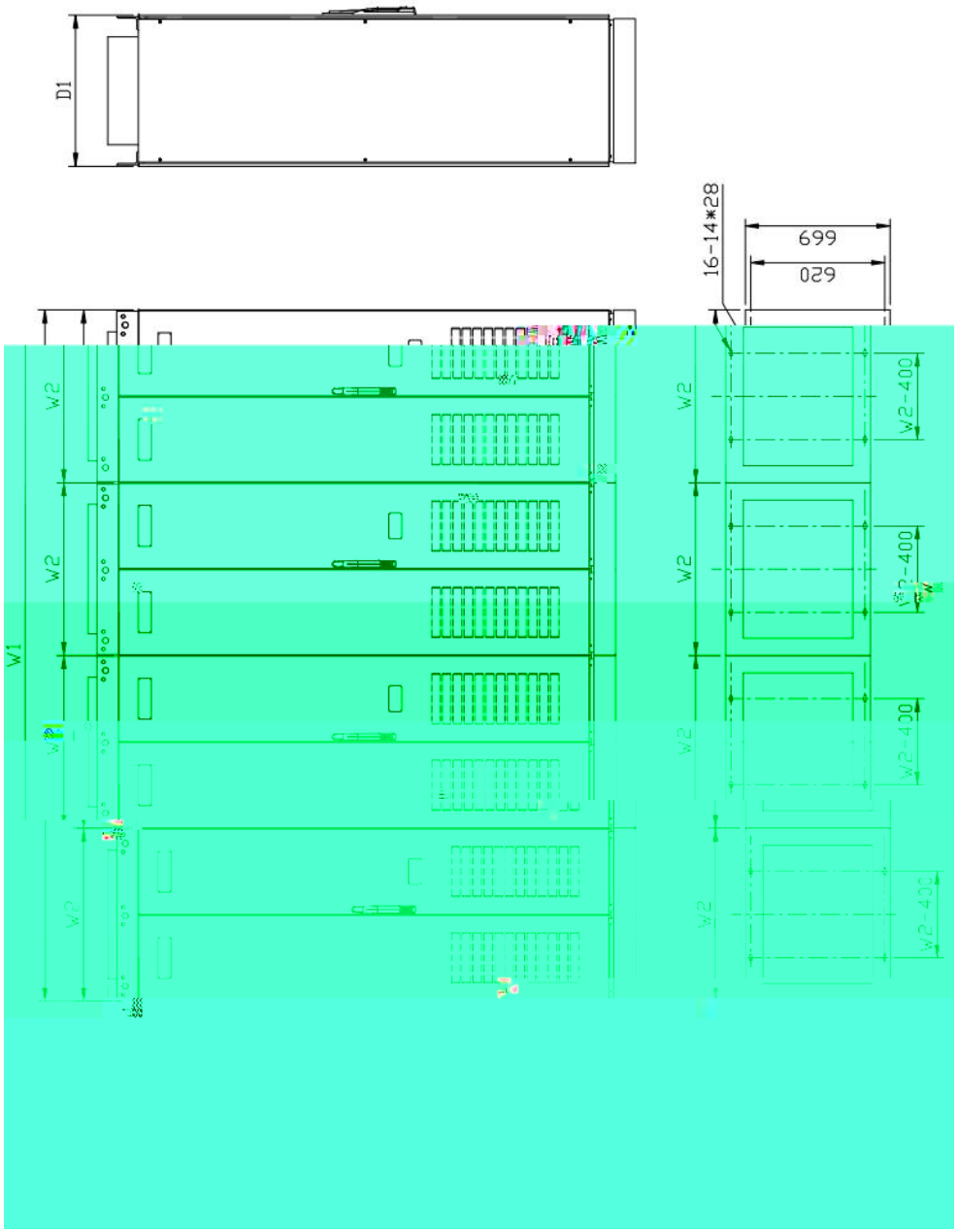
315kW~3200kW

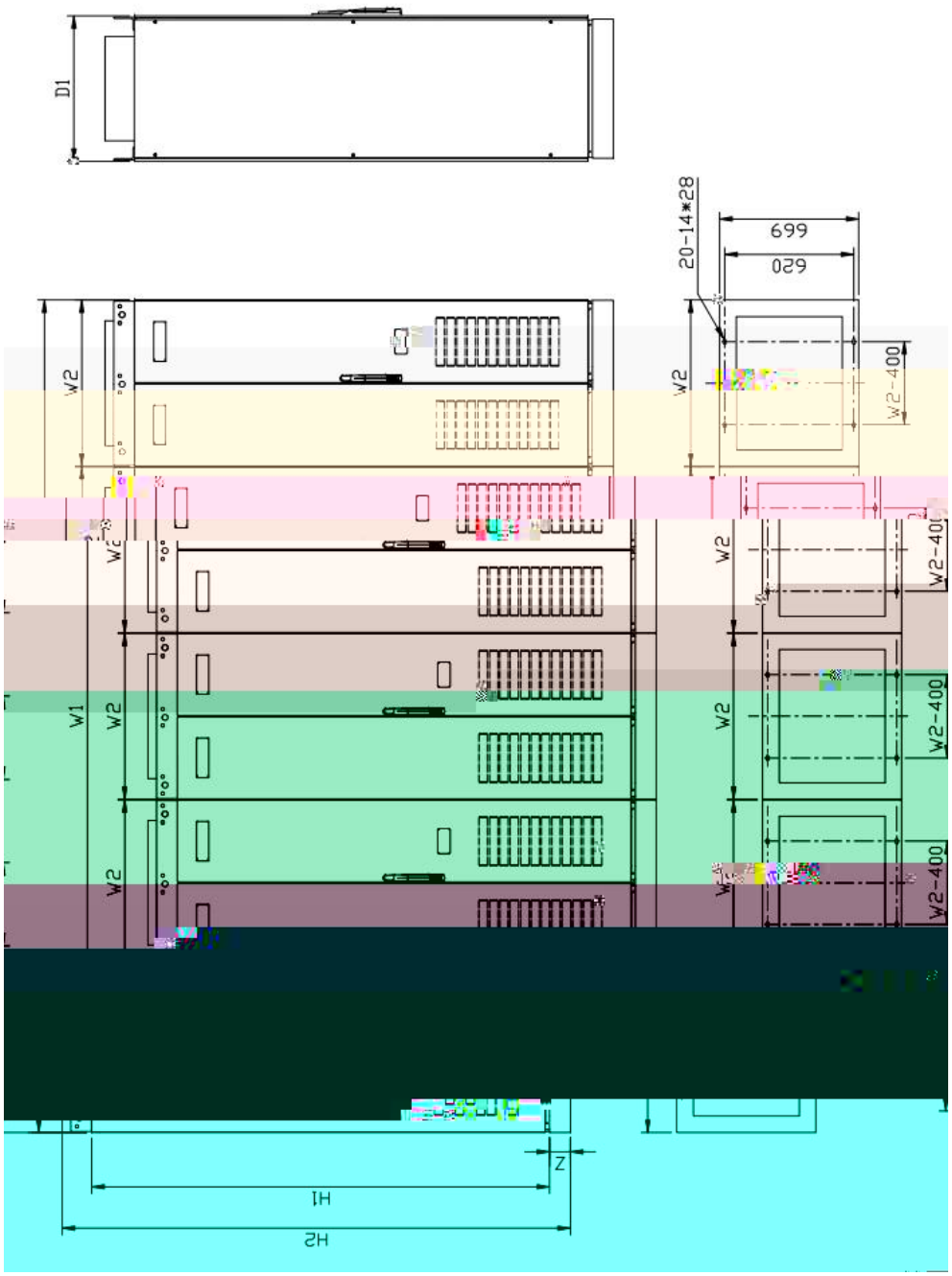


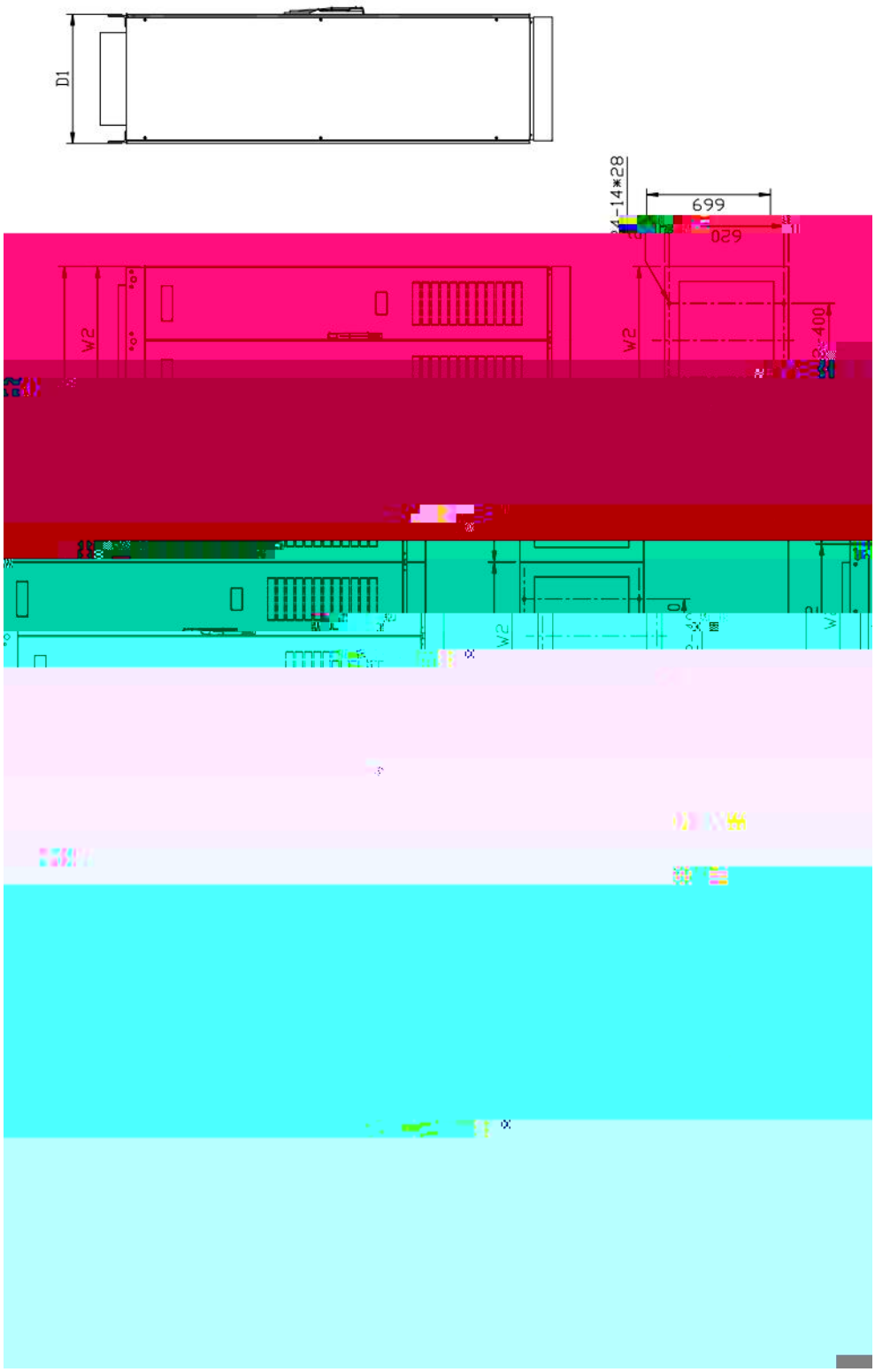
HF680N02C-315-5 HF680N02C-400-5 HF680N02C-560-5



HF680N02C-800-5　HF680N02C-1000-5

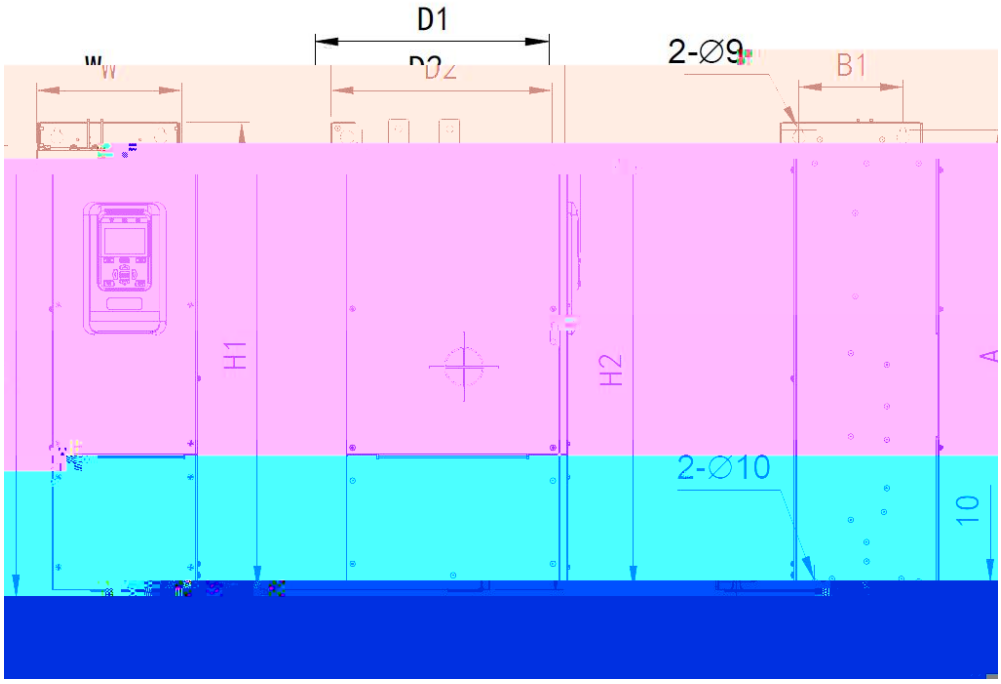

D1
16-14*28
699
620
W1
W2
W2-400


D1
20-14*28
699
620
W2
W2-400
W1
H1
H2
Z

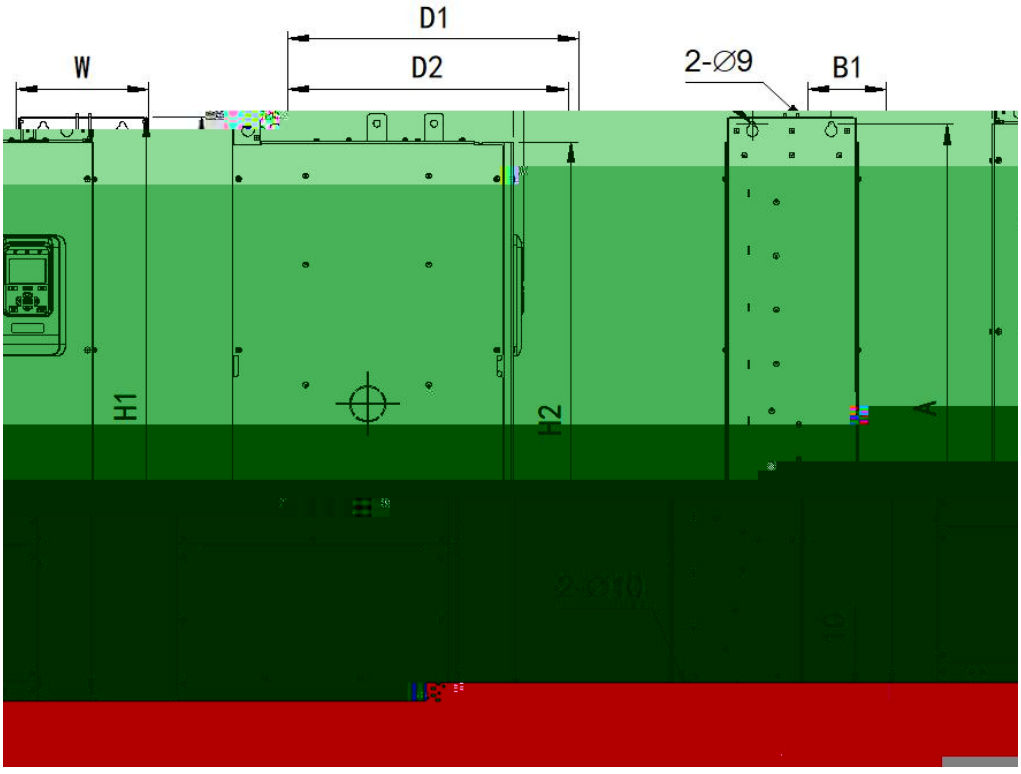

D1
699
620
W2
W2
400

		mm						kg
		H1	H2	W1	W2	D1	Z	
4	HF680N02C-800-5+Z4 HF680N02C-1000-5+Z4	2200	2640	1600	800	700	300	1800

5.3



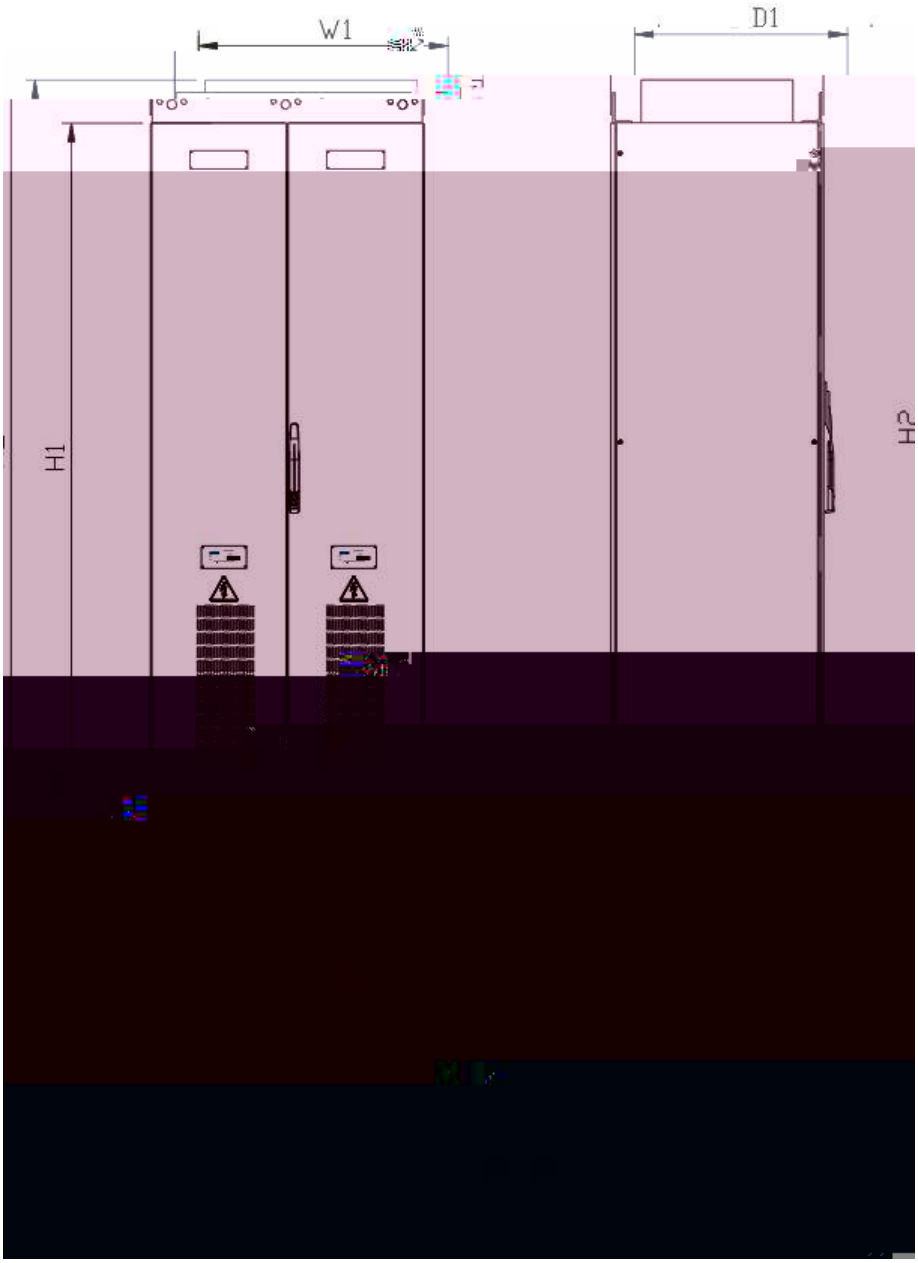
B3



B4

		mm					mm			8.8	kg
		H1	H2	W	D1	D2	A	B1	B2		
HF680N03M-045-5	B3	673	633	210	337	320	652	150	150	4-M8	30
HF680N03M-055-5											
HF680N03M-075-5	B4	920	880	210	462	444	899	125	150	4-M8	55
HF680N03M-090-5											
HF680N03M-110-5											
HF680N03M-132-5											
HF680N03M-160-5											
HF680N03M-200-5	B5	1122	1075	221	522	505	1075	150	150	4-M10	80
HF680N03M-220-5											
HF680N03M-250-5											
HF680N03M-280-5											
HF680N03M-315-5	B6	1315	1268	250	618	600	1295	150	100	4-M12	120
HF680N03M-355-5											
HF680N03M-400-5											
HF680N03M-450-5											
HF680N03M-500-5											
HF680N03M-560-5											

5.4



		mm					
		H1	H2	W1	D1	Z	kg
1	HF680N03C-630-5+Z1 HF680N03C-710-5+Z1 HF680N03C-800-5+Z1 HF680N03C-900-5+Z1 HF680N03C-1000-5+Z1	2200	2440	800	700	100	900
2	HF680N03C-630-5+Z2 HF680N03C-710-5+Z2 HF680N03C-800-5+Z2 HF680N03C-900-5+Z2 HF680N03C-1000+Z2	2200	2540	800	700	200	900
3	HF680N03C-630-5+Z3 HF680N03C-710-5+Z3 HF680N03C-800-5+Z3 HF680N03C-900-5+Z3 HF680N03C-1000+Z3	2200	2590	800	700	250	900
4	HF680N03C-630-5+Z4	2200	2640	800	700	300	

6.

B₿

	N|N W E

4

ENTER F1/F2

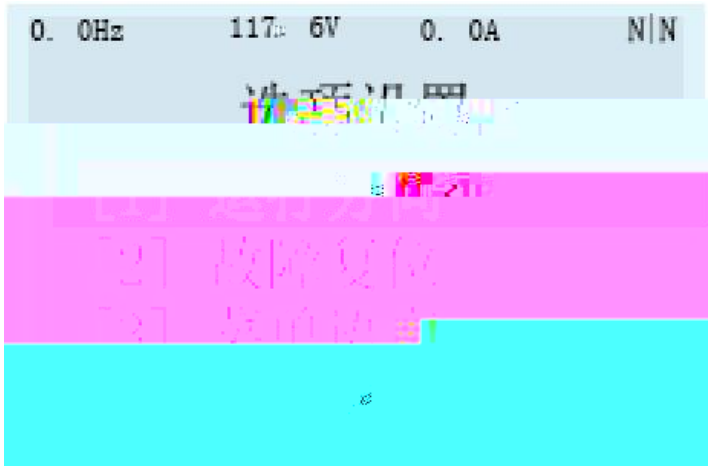
6.4

Option Set

1

2

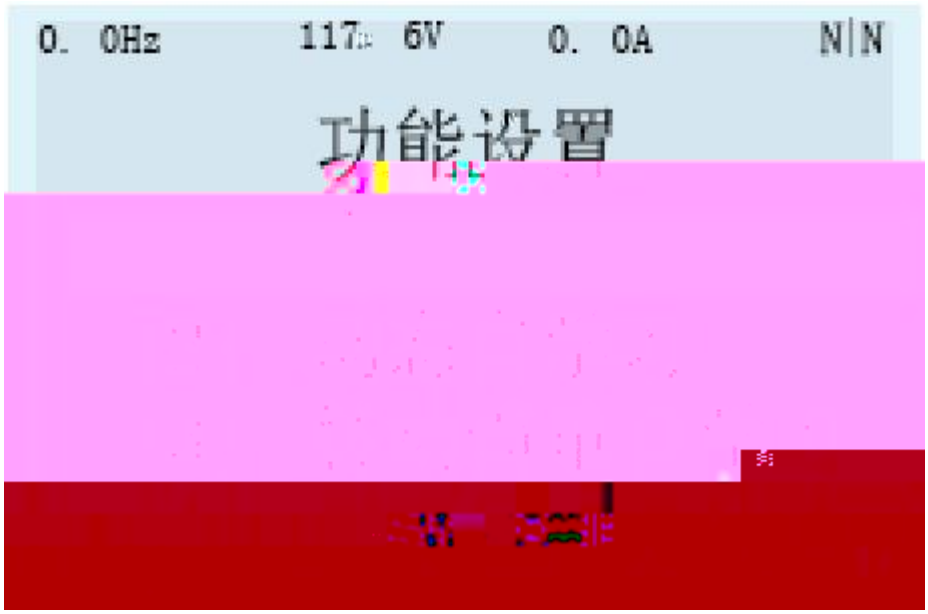
6.4.1



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

	Torque limiter	[%]	%
	1 Analog output1	[%]	1
	2 Analog output2	[%]	2

6.4.4



Function Setting

1	MotoTuning I	
2	MotoTuning II	

3	MotoTuning III	
4	DC-Link Tuning (AFE)	AFE
5	Shortcut Paras Setting	
6	Parameter Initialization	
7	Delete Fault Records	
8	System Restart	
9	Backup Parameter	
10	Recover Parameter	
11	Compare Parameter	
12	Backup Para DSP DSP	DSP
13	Restore Para DSP DSP	DSP

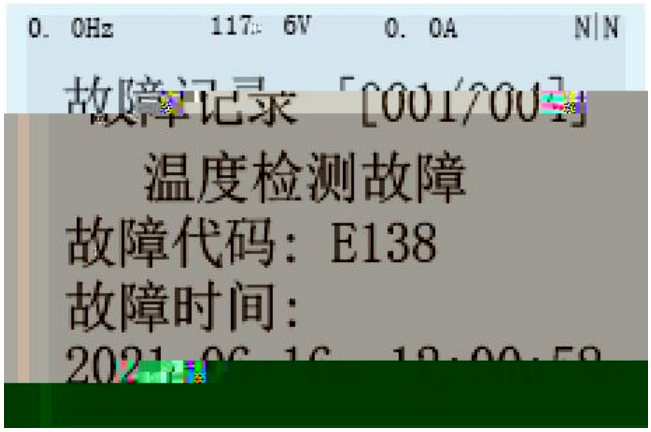
1

2

5

▼ ▲ “Enter”

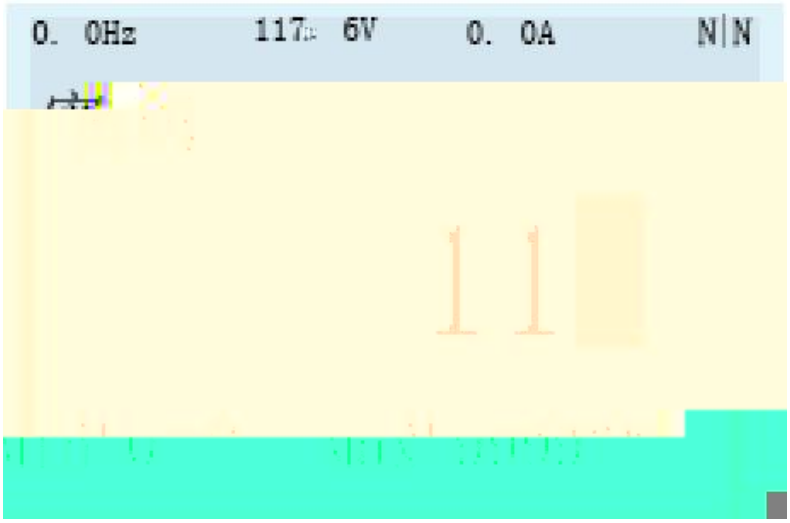
6.4.5



Fault Record

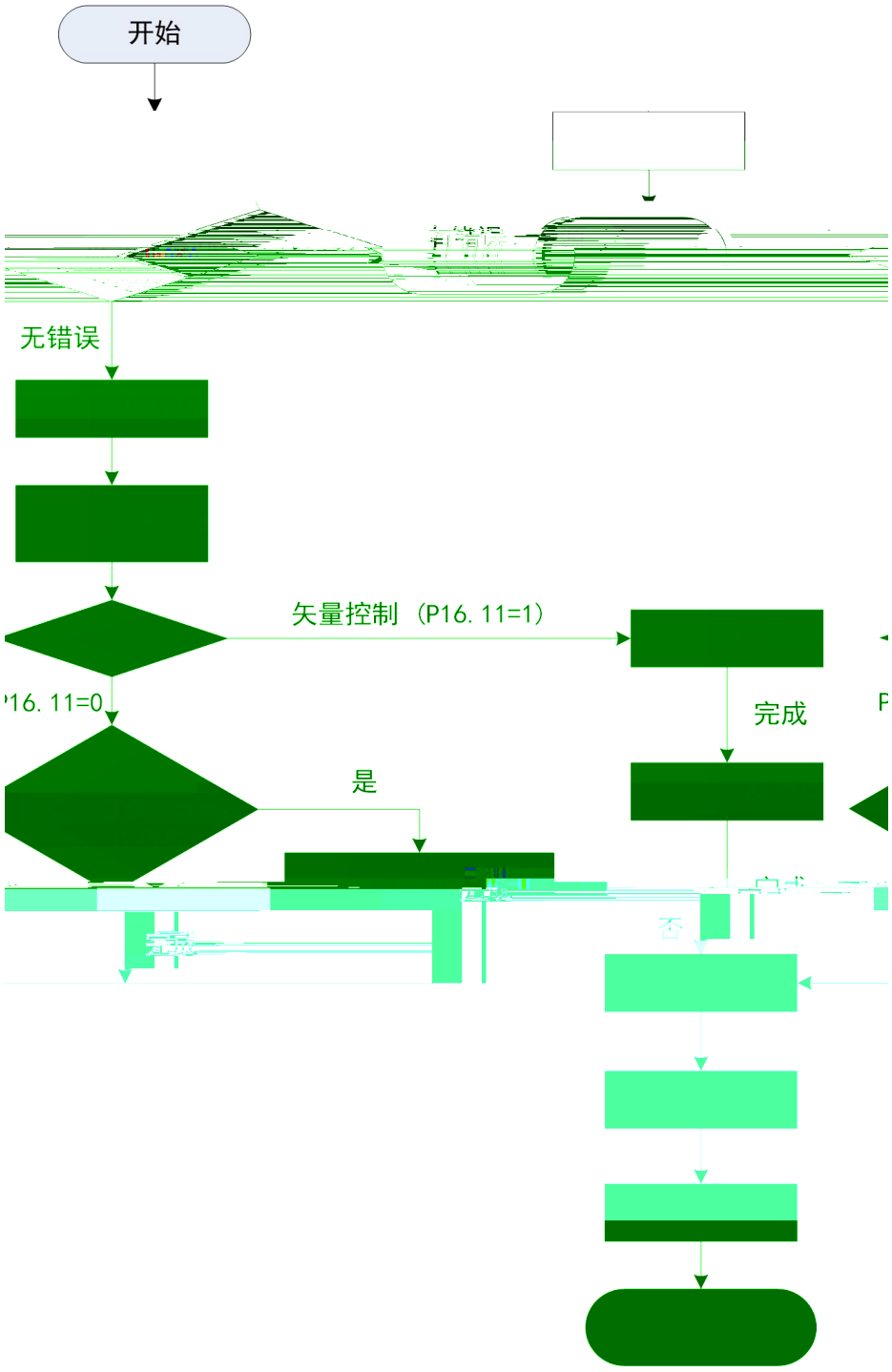
6.4.6

Access Permissions



7.

7.1



/

V/F P16.11=0 V/F

P16.11=2 P16.11=1

7.2

1
2
3
4 AC380~500V 50/60Hz
5 U,V,W
6
7 PG PG
8
9
10

Warring/Error

N | E W | E

7.2.1

5.4 “ ”

7.2.2

P16.2			
P16.3			
P16.4			
P16.5			
P16.6			
P16.7		120×P16.5 / P16.6	
P16.9		120×P16.5/P16.7	
P16.11		[0]V/F [1] [2]	0
P16.14	V/F	[0] V/F [1] V/F [2]	0
P16.24		V/F	50 [Hz]
P8.16	1	P8.15	3
P8.35	1	P8.34	3
P8.0		[0] [1] [2]DP [3]MODBUS [4]	1

		[0]I/O [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	
P8.10			3
P8.3		[0] [1]	1
P7.0	[1]	0~	

4

50%

7.2.4

HF680N

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

7.2.7

1

2 LOC/REM LOCAL LOCAL

3 ENTER [1] RUN

RUN 5Hz

8.

8.1

8.1.1

DI1 DI2

DI3: 14 DI4

DO2 DO3:

DO4 DO

DO5

1

380V 220V P0.1

“ ” “ ”

“ DO4A ” “ DO4C ” “ DO5A ”

“ DO5C ” DO2 PLC

1

P3.0-P3.7 0 PLC DI “

” “ H:L ” DI 1

P3.0	1	
P3.1	20	
P3.2	14	LCL
P3.3	5	
P4.1 DO2	2	
P4.2 DO3	1	

P4. DO4	0	DO
P4 DO5	32	
0	180%	
P7.4	200%	
P7.12	730V	430V9 800V
P8.6	300s	30s ≤ 0.5s
P16.0	380V	
P16.2		400kW 400kW
P16.4		400kW 640A
P16.11	3	
P16.12	3	3K
P24.7	0V	ADJ

P16.0 P24.7 =P16.0

+P24.7 P16.0

AFE ” Stop

P8.6 0.5$ ” Run

A B C

Stop

P N P N Local/Remote

P3.0		1	
P3.1		20	
P3.2		14	LCL
P3.3		5	
P4.1	DO2	2	
P4.2	DO3	1	
P4.3	DO4	0	DO
P4.4	DO5	32	
P7.0		180%	
P7.4		200%	
P7.12		730V	430V 800V
P8.6		300s	300s 0.5s
P16.0		380V	
P16.2			400kW 400kW
P16.4			400kW 640A
P16.11		3	
P16.12		3	3K
P24.7		0V	ADJ

P16.0 ≤ 375V 580V

375V P16.0 ≤ 400V 600V

400V P16.0 ≤ 430V 630V

430V P16.0 ≤ 450V 665V

450V P16.0 ≤ 460V 680V

P16.0 460V 700V

620V P16.0 380V P24.7

20V 620V

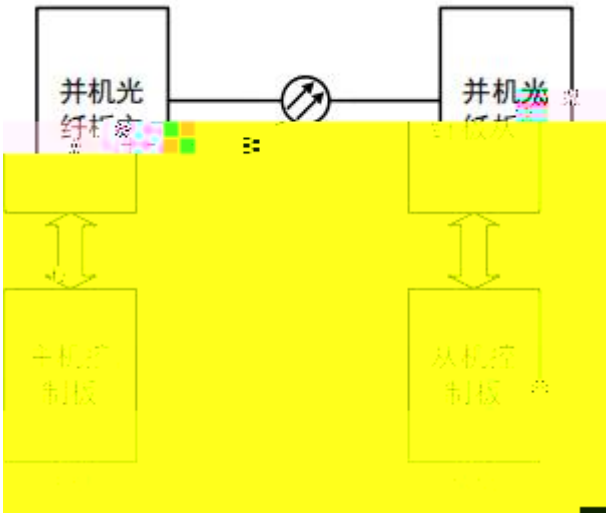
380V “ / ” “

D02

D04 D0

D05

1



380V 220V P0.1

* * DI D0

D0

“ D04A ” “ D04 ” “ D05A ”

“ D05C ”

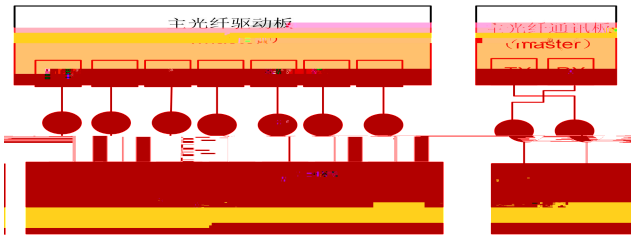
P16.0	380V	
P16.2	1/2	800kW 400kW
P16.4	1/2	800kW 608A
P16.11	3	
P16.12	3	3K

P2.0	1	
P2.3	1	
P3.0	1	
P3.1	20	
P3.2	14	LCL
P3.3	5	
P4.1 DO2	2	
P4.2 DO3	1	
P4.3 DO4	0	DO
P4.4 DO5	32	
P7.0	180%	
P7.4	200%	
P7.12	730V	430V 800V
P8.6	300s	300s 0.5s
P16.0	380V	
P16.2		800kW 800kW
P16.4		800kW 1216A

Local/Remote Remote

P3.0-P3.7 0 PLC DI DI

DI 1



P2.0	2	
P3.2	14	LCL
P4.3 DO4	0	DO
P4.4 DO5	32	
P4.1 DO2	2	
P7.0	180%	
P7.4	200%	
P7.12	730V	430V 800V
P16.0	380V	
P16.2	1/2	800kW 400kW
P16.4	1/2	800kW 608A
P16.11	3	
P16.12	3	3K

P2.0	1	

P2.3		1	
P3.0		1	
P3.1		20	
P3.2		14	LCL
P3.3		5	
P4.1	DO2	2	
[redacted]		1	
P4.3	DO4	0	DO
P4.4	DO5	32	
P7.0		180%	
P7.4		200%	
P7.12		730V	430V 800V
P8.6		300s	

b

375V P16.0≤400V 600V

400V P16.0≤430V 630V

430V P16.0≤450V 665V

450V P16.0≤460V 680V

P16.0 460V 700V

620V P16.0 380V P24.7

20V 620V

220V **220V**

101.2 [W1] 101.77 CAN

@ 101.80 CAN @ 0

380V “ / ” “ ” 运行

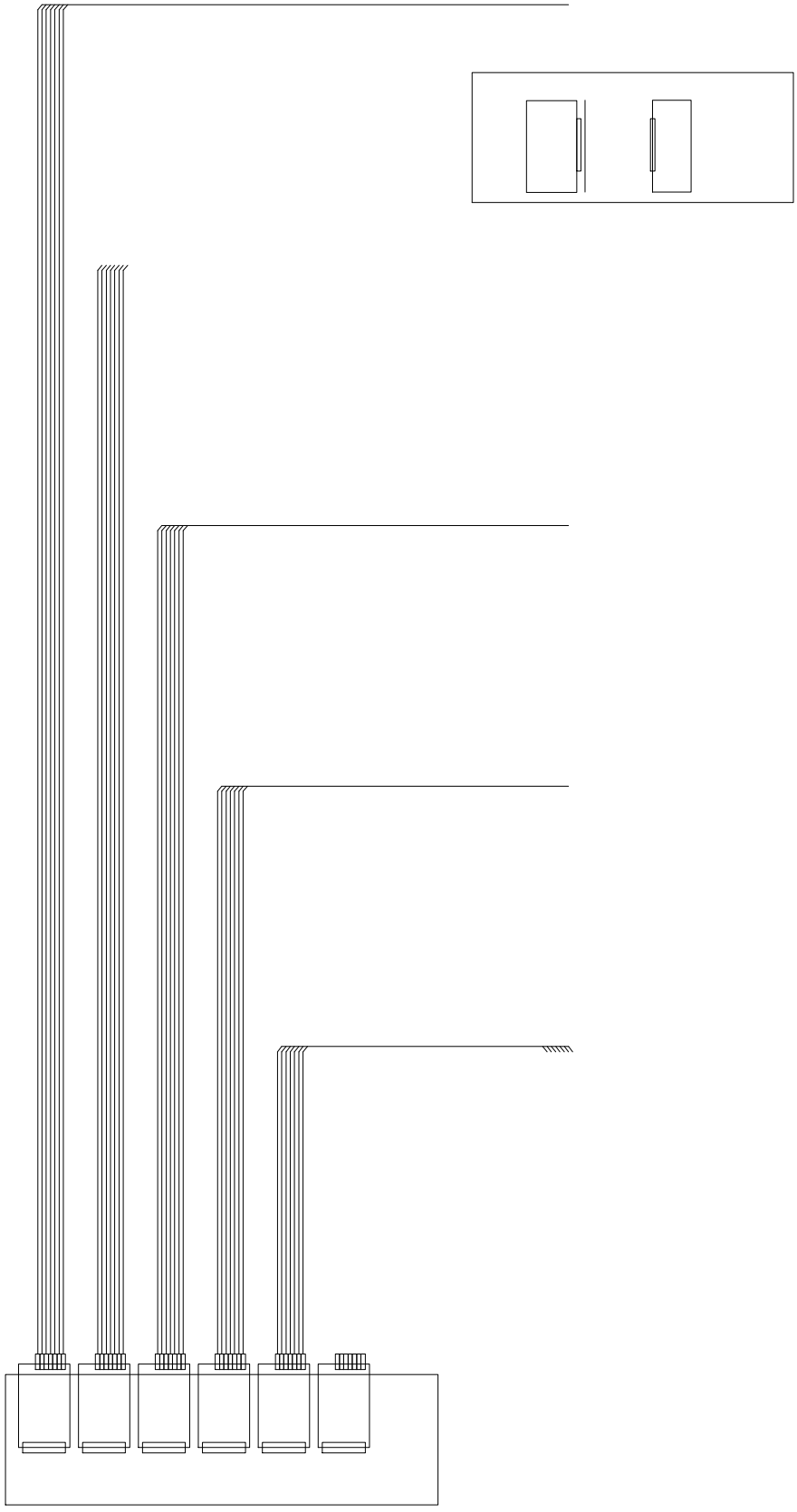
IGBT 300s 103.31

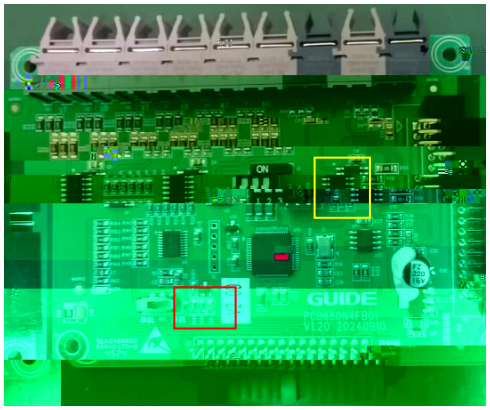
49-51Hz 103.30 AFE

停止

P8.6 **0.5s** 运行

103023





PIN

“ ” PIN

DI1 DI2 DI4

DO2

DO4 DO

DO5

DI2

DO4 DO

DO5

P0.1 400KW

P0.1

1 “ DO4A ” “ DO4C ” 1

1 “ DO5A ” “ DO5C ” 1

DO2 PLC 1

P3.0-P3.7 0 PLC DI

DI DI 1

220V

1 2 3 4 5

P16.0 P24.7 =P16.0

+P24.7

≤

≤

≤

≤

≤

620V P16.0 380V P24.7 20V

620V

101.2 [W1] 101.77 CAN

@ 101.80 CAN @ 0

“ / ” “ ” 运行

AFE 2s

IGBT 300s IGBT

103.31 49-51Hz

停止

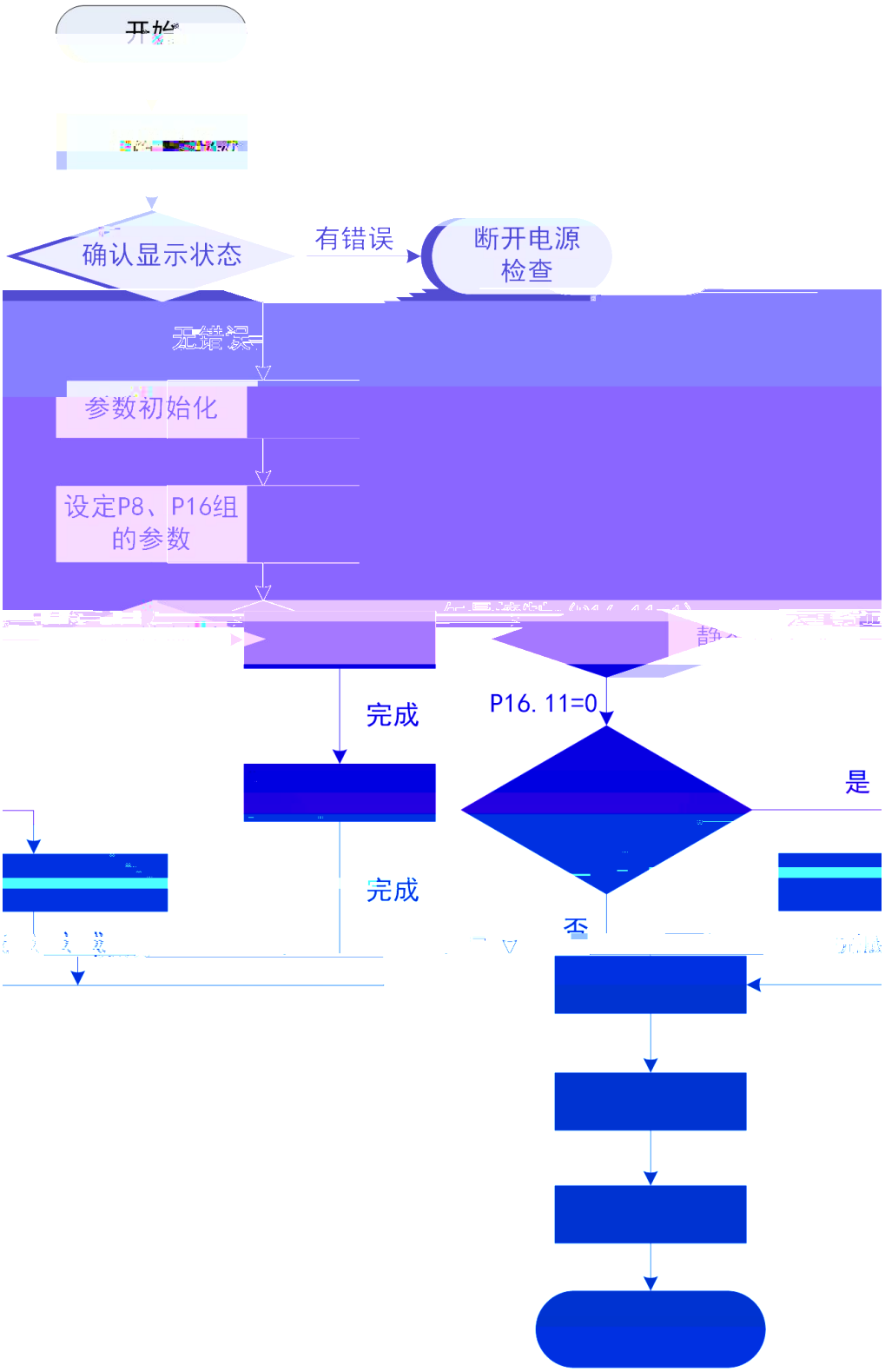
运行

103.23 102.54 102.55

102.56 停止

	A	B	C	
	102.54	102.55	102.56	
1	113.11	113.12	113.13	113.8
2	113.30	113.31	113.32	113.27
3	113.49	113.50	113.51	113.46

8.2



/

v א

8.3.3

6

8.3.4

P8.0	[0] [1] [2]DP [3]MODBUS [4]	1
P8.3	[0] [1]	1
P8.6	0 300s	0
P8.7		

6.0		0V
16.2		
P16.3		
P16.4		
P16.5		
P16.6		
P16.7		(120×P16.5 / P16.6)
P16.9		(120×P16.5 / P16.7)
P16.11		[0]V/F [1] [2]

8.3.5

5

P16.11 [1] [2]

[0] V/F

6

V/F (P20.74)

P20.74

P20.78 P20.79 P20.84

“

” “

“ ” “ ”

50%

P20.98 P20.98

8.3.6

HF680N

7.5%

5

0% 50%

1

2

1

2

8.3.9

9.

9.1

9.1.1

P2.0		[0] [1] [2]	0 2	0	500kW [0] 500kW [1] [2]
P2.2		[0] [1]	0 1	0	
P2.3			0 5	1	

9.1.2

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

P8.6			0.00 300.00 [s]	0.00 [s]	IGBT

9.1.6

P16.0			320 550 [V]	500 [V]	
P16.2			0.0 4000.0 [kW]	[kW]	
P16.4			0.0 6500.0 [A]	[A]	
P16.11		[0]V/F [1] [2] [3] [4]	0 4	0	[3]
P16.12			3 8 [kHz]	3 [kHz]	3 8kHz

9.1.7 AFE

P24.0		[0] [1] 1 [2] 2 [3] [4]DP [5]MODBUS [6]	0 6	0	AFE [0]
P24.1	@		0 347	0	

P24.2		[0] [1] 1 [2] 2 [3] DP [4]MODBUS [5]	0 5	0	AFE [0]
P24.3	@		0 347	0	
P24.7	ADJ				

P24.28			0 6500 [mF]	0[mF]	
P24.29			0 6500 [mF]	0	AFE
P24.30			0 6.5 [mH]	0	AFE

10.

10.1 P2

[0]

P2.0 [1]

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

10.3 P4

18	1	2
19	2	3
20	3	4
21	FUNC 21	o ز 3

10.4 P5

P5.0	AI1	[0] [1]0 +10V [2]-10 +10V [3]0 20mA	0 3	1	
P5.1	AI1	AI1	0.0 1000.0 [ms]	25.0 [ms]	
P5.2	AI1	AI1	-10.00 10.00 [V]	0.000 [V]	
P5.3	AI1	AI1	-20.00 20.00 [mA]	0.000 [mA]	
P5.4	AI1	AI1	-10.00 10.00 [V]	0.000 [V]	
P5.5	AI1	AI1	0.00 20.00 [mA]	0.000 [mA]	
P5.6	AI1	AI1	-300.0 300.0 [%]	0.0 [%]	
P5.7	AI1	AI1	-10.00 10.00 [V]	10.000 [V]	
P5.8	AI1	AI1	0.00 20.00 [mA]	20.000 [mA]	
P5.9	AI1	AI1	-300.0 300.0 [%]	100.0 [%]	
P5.18	AI2	[0] [1]0 +10V [2]-10 +10V [3]0 20mA	0 3	3	

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

10.5 P6

P6.0	AO1		7-1	0 14	2
P6.1		1		0 1000	0
P6.2	AO1		AO1	-300.0 300.0 [%]	0.0 [%]
P6.3	AO1		AO1	-300.0	

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

7-1

0

1

2

3

4

5

6

10.6 P7

P7.0	[1]	1	0.0 300.0 [%]	180.0 [%]	
P7.1	[2]	2	0.0 300.0 [%]	180.0 [%]	
P7.2	[3]	3	0.0 300.0 [%]	180.0 [%]	
P7.3	[4]	4	0.0 300.0 [%]	180.0 [%]	
P7.4	[1]	1	0.0 300.0 [%]	235.0 [%]	
P7.5	[2]	2	0.0 300.0 [%]	235.0 [%]	
P7.6	[3]	3	0.0 300.0 [%]	235.0 [%]	
P7.7	[4]	4	0.0 300.0 [%]	235.0 [%]	
P7.8	[1]	1	0.0 100.0 [%]	20.0 [%]	
P7.9	[2]	2	0.0 100.0 [%]	20.0 [%]	
P7.10	[3]	3	0.0 100.0 [%]	20.0 [%]	
P7.11	[4]	4	0.0 100.0 [%]	20.0 [%]	
P7.12			600 920 [V]	900 [V]	
P7.13			300 500 [V]	350 [V]	
P7.14			60.0 100.0 [ ]	87.5 [ ]	
P7.15			50.0 100.0 [ ]	80.0 [ ]	
P7.19	[1]	1	100.0 720.0 [%]	120.0 [%]	
P7.20	[2]	2	100.0 720.0 [%]	120.0 [%]	
P7.21	[3]	3	100.0 720.0 [%]	120.0 [%]	

P7.22	[4]		4	100.0 [%]	720.0 [%]	120.0 [%]
P7.23	1	M1	1	0.00 [s]	3.00 [s]	0.50 [s]
P7.24	1	M2	2	0.00 [s]	3.00 [s]	0.50 [s]
P7.25	1	M3	3	0.00 [s]	3.00 [s]	0.50 [s]
P7.26	1	M4	4	0.00 [s]	3.00 [s]	0.50 [s]
P7.27	1		1	0.00 [s]	3.00 [s]	2.00 [s]
P7.28	2		2	0.00 [s]	3.00 [s]	2.00 [s]

P8.37	2	P8.34	P8.36	0.0 [s]	300.0 [s]	4.00 [s]
P8.38	3			0.0 [%]	300.0 [%]	240.0 [%]
P8.39	3	P8.36	P8.38	0.0 [s]	300.0 [s]	7.00 [s]
P8.40	4			0.0 [%]	300.0 [%]	300.0 [%]
P8.41	4	P8.38	P8.40	0.0 [s]	300.0 [s]	

10.8 2 P9

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

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

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

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

10.10 4 P11

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

P12

P12.0		[0] [1]	0	1	1
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	M.0				

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

10.12 2 P13

P13.0		[0] [1]	0 1	1	
P13.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P13.2	1		0.0 3000.0	10.0	
P13.3	2		0.0 3000.0	20.0	
P13.4	3		0.0 3000.0	35.0	
P13.5	4		0.0 3000.0	50.0	
P13.6	5		0.0 3000.0	50.0	
P13.7	6		0.0 3000.0	50.0	
P13.8	7		0.0 3000.0	50.0	
P13.9	8		0.0 3000.0	50.0	
P13.10	9		0.0 3000.0	50.0	
P13.11	10		0.0 3000.0	50.0	
P13.12	11		0.0 3000.0	50.0	
P13.13	12		0.0 3000.0	50.0	
P13.14	13		0.0 3000.0	50.0	
P13.15	14		0.0 3000.0	50.0	
P13.16	15		0.0 3000.0	50.0	
P13.17	16		0.0 3000.0	50.0	
P13.22			0.0 20.0 [%]	2.0 [%]	
P13.23			0.0 20.0 [%]	0.0 [%]	
P13.24			0.0 200.0 [%]	30.0 [%]	
P13.25			0.0 200.0 [%]	20.0 [%]	
P13.26			0.00 2.00 [s]	0.00 [s]	

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

10.13 3 P14

P14.0		[0] [1]	0 1	1	
P14.1		[0][%] [1][Hz] [2][rpm]	0 2	1	
P14.2	1		0.0 3000.0	10.0	
P14.3	2		0.0 3000.0	20.0	
P14.4	3		0.0 3000.0	35.0	
P14.5	4		0.0 3000.0	50.0	
P14.6	5		0.0 3000.0	50.0	
P14.7	6		0.0 3000.0	50.0	
P14.8	7		0.0 3000.0	50.0	
P14.9	8		0.0 3000.0	50.0	
P14.10	9		0.0 3000.0	50.0	
P14.11	10		0.0 3000.0	50.0	
P14.12	11		0.0 3000.0	50.0	
P14.13	12		0.0 3000.0	50.0	
P14.14	13		0.0 3000.0	50.0	
P14.15	14		0.0 3000.0	50.0	
P14.16	15		0.0 3000.0	50.0	
P14.17	16		0.0 3000.0	50.0	
P14.22			0.0 20.0 [%]	2.0 [%]	
P14.23			0.0 20.0 [%]	0.0 [%]	
P14.24			0.0 200.0 [%]	30.0 [%]	
P14.25			0.0 200.0 [%]	20.0 [%]	
P14.26			0.00 2.00 [s]	0.00 [s]	

P14.27		0.00 2.00 [s]	0.00 [s]
P14.28		0.00 2.00 [s]	0.07 [s]
P14.29		0.00 2.00 [s]	0.07 [s]
P14.32		0.0 20.0 [%]	0.0 [%]
P14.33		0.0 20.0 [%]	0.0 [%]
P14.34		0.00 2.00 [s]	0.00 [s]
P14.35		0.00 2.00 [s]	0.00 [s]
P14.36		0.00 .2000 [s]	0.50 [s]
P14.37	.00	0.00 2.00 [s]	0.50 [s]

10.14 4 P15

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

10.15 1 V/F P16

P16.0			320 550 [V]	500 [V]	
P16.2			0.0 4000.0 [kW]	 [kW]	
P16.3			320 520 [V]	500 [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]	
P16.9			0 7200 [rpm]	1500 [rpm]	
P16.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P16.12			1.00 10.00 [kHz]	3.00 [kHz]	
P16.14	V/F	[0] V/F [1] V/F [2]	0 3	0	
P16.15		[0] [1]	0 1	0	
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]
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 [%]
P16.27			0.0 200.0 [%]	100.0 [%]
P16.30			0.0 100.0 [%]	0.0 [%]
P16.33	V/F	V/F	0 6	2
P16.34	V/F	1	0.0 300.0 [Hz]	5.0 [Hz]
P16.35	V/F	1	0.0 128Hz	

10.16 2 V/F P17

P17.0			320 550 [V]	500 [V]	
P17.2			0.0 4000.0 [kW]	 [kW]	
P17.3			320 520 [V]	500 [V]	
P17.4			0.0 6500.0 [A]	 [A]	
P17.5			0.0 300.0 [Hz]	50.0 [Hz]	
P17.6			0 6000 [rpm]	1465 [rpm]	
P17.7			2 12 [pole]	4 [pole]	
P17.9			0 7200 [rpm]	1500 [rpm]	
P17.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P17.12			1.00 10.00 [kHz]	3.00 [kHz]	
P17.14	V/F	[0] V/F [1] V/F [2]	0 3	0	
P17.15		[0] [1]	0 1	0	
P17.16			2 500 [ms]	500 [ms]	
P17.17	V/F	[0] [1]	0 1	0	
P17.18			10 1000 [ms]	200 [ms]	
P17.19		[0] [1]	0 1	0	

P17.22			0.00 100.00 [s]	0.00 [s]	
P17.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P17.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P17.25			0.0 120.0 [%]	100.0 [%]	
P17.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	
P17.27			0.0 200.0 [%]	100.0 [%]	
P17.30			0.0 100.0 [%]	0.0 [%]	
P17.33	V/F	V/F	0 6	2	
P17.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P17.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P17.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P17.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P17.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P17.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P17.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P17.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P17.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P17.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P17.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P17.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P17.46	V/F @		0 300	0	
P17.47	@		0 300	0	

10.17 3 V/F P18

P18.0			320 550 [V]	500 [V]	
P18.2			0.0 4000.0 [kW]	 [kW]	
P18.3			320 520 [V]	500 [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]	
P18.9			0 7200 [rpm]	1500 [rpm]	
P18.11		[0]V/F [1] [2] [3] [4]	0 4	0	
P18.12			1.00 10.00 [kHz]	3.00 [kHz]	
P18.14	V/F	[0] V/F [1] V/F [2]	0 3	0	
P18.15		[0] [1]	0 1	0	
P18.16			2 500 [ms]	500 [ms]	
P18.17	V/F	[0] [1]	0 1	0	
P18.18			10 1000 [ms]	200 [ms]	
P18.19		[0] [1]	0 1	0	

P18.22			0.00 100.00 [s]	0.00 [s]	
P18.23		V/F	0.00 300.00 [Hz]	0.00 [Hz]	
P18.24		V/F	0.00 300.00 [Hz]	50.00 [Hz]	
P18.25			0.0 120.0 [%]	100.0 [%]	
P18.26	V/F	V/F	0.00 10.00 [%]	0.75 [%]	
P18.27			0.0 200.0 [%]	100.0 [%]	
P18.30			0.0 100.0 [%]	0.0 [%]	
P18.33	V/F	V/F	0 6	2	
P18.34	V/F 1		0.0 300.0 [Hz]	5.0 [Hz]	
P18.35	V/F 1		0.0 125.0 [%]	11.5 [%]	
P18.36	V/F 2		0.0 300.0 [Hz]	50.0 [Hz]	
P18.37	V/F 2		0.0 125.0 [%]	100.0 [%]	
P18.38	V/F 3		0.0 300.0 [Hz]	50.0 [Hz]	
P18.39	V/F 3		0.0 125.0 [%]	100.0 [%]	
P18.40	V/F 4		0.0 300.0 [Hz]	50.0 [Hz]	
P18.41	V/F 4		0.0 125.0 [%]	100.0 [%]	
P18.42	V/F 5		0.0 300.0 [Hz]	50.0 [Hz]	
P18.43	V/F 5		0.0 125.0 [%]	100.0 [%]	
P18.44	V/F 6		0.0 300.0 [Hz]	50.0 [Hz]	
P18.45	V/F 6		0.0 125.0 [%]	100.0 [%]	
P18.46	V/F @		0 300	0	
P18.47	@		0 300	0	

P18.48		[0] [1]PID 1 [2]PID 2 [3]	0 3	0	
P18.49	@		0 300	0	
P18.50			0.00 300.00 [s]	0.00 [s]	
P18.51			0.0 150.0 [%]	70.0 [%]	
P18.52			0.00 5.00 [Hz]	0.00 [Hz]	
P18.54			0.00 300.00 [s]	0.00 [s]	
P18.55			0.0 150.0 [%]	75.0 [%]	
P18.56			0.00 5.00 [Hz]	0.00 [Hz]	
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 [%]	
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 [%]	

10.18 4 V/F P19

PR

P19.22		0.00 100.00 [s]	0.00 [s]
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 [%]
P19.27		0.0 200.0 [%]	100.0 [%]
P19.30		0.0 100.0 [%]	0.0 [%]
P19.33 V/F	V/F	0 6	2
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 [%]
P19.46 V/F @		0 300	0
P19.47 @		0 300	0

10.19 1 P20

P20.0		[0] [1]		0 1	0
P20.1		[0] [1] [2] [3] [4] [5]DP [6]MODBUS [7]	1 2 P20.3	0 7	0
P20.2				0 7	0
P20.3				-300.0 300.0 [%]	0.0 [%]
P20.4	@			0 300	0
P20.5				0 1000 [ms]	0 [ms]
P20.6				0.0 200.0 [%]	100.0 [%]
P20.7		[0] [1] P20.9 [2] [3] [4] [5]DP [6]MODBUS [7]	P20.8 1 2	0 7	0
P20.8		P20.7	[1]	0.0 300.0 [%]	200.0 [%]
P20.9		P20.7	[1]	0.0 300.0 [%]	200.0 [%]
P20.10				0	

P20.31	0.0 [%]	100.0 [%]	5.0 [%]
P20.32	0.0 [%]	100.0 [%]	5.0 [%]

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 [%]
P20.56						0.0 1000.0 [%]	100.0 [%]
P20.57		[0] [1]				0 1	0
P20.58						0.0 125.0 [%]	100.0 [%]
P20.59						1.0 25.0 [%]	2.5 [%]
P20.60	DROOP		0	DROOP		0.0 100.0 [%]	0.0 [%]
P20.61	DROOP		DROOP			30 2000 [ms]	50 [ms]
P20.62						0.0 1000.0 [%]	100.0 [%]
P20.63						0.0 1000.0 [%]	100.0 [%]
P20.66		1			1	0.0 1000.0 [%]	100.0 [%]
P20.67							

P20.77	2		2	90.0 110.0 100.0 [%] [%]
P20.78				0.00 650.00 0.00 [mOhm] [mOhm]
P20.79				0.00 65.50 0.000 [mH] [mH]
P20.80	1		1	0.800 1.350 1.140
P20.81	2		2	0.800 1.350 0.940
P20.82	3		3	0.800 1.350 1.080
P20.83	4		4	0.800 1.350 0.950
P20.84				0.00 655.00 0.00 [mH] [mH]
P20.85	85%	85%		40.0 150.0 108.0 [%] [%]
P20.86	87.5%	87.5%		40.0 150.0 106.5 [%] [%]
P20.87	90%	90%		40.0 150.0 105.0 [%] [%]
P20.88	92.5%	92.5%		40.0 150.0 103.5 [%] [%]
P20.89	95%	95%		40.0 150.0 102.0 [%] [%]
P20.90	102.5%	102.5%		40.0 150.0 99.0 [%] [%]
P20.91	105%	105%		40.0 150.0 96.5 [%] [%]
P20.92	110%	110%		40.0 150.0 93.0 [%] [%]
P20.93	115%	115%		40.0 150.0 88.5 [%] [%]
P20.94	120%	120%		40.0 150.0 83.0 [%] [%]
P20.95	125%	125%		40.0 150.0 77.0 [%] [%]
P20.96	130%	130%		40.0 150.0 70.5 [%] [%]
P20.97	135%	135%		40.0 150.0 63.5 [%] [%]
P20.98			( )	0.01 300.00 0.75 [s] [s]
P20.99				0.00 10.00 0.00 [%] [%]

P21.54	Ki		0.0 [%]	1000.0 [%]	100.0
P21.55					

P21.78				0.00 [mOhm]	650.00 [mOhm]	0.00 [mOhm]
P21.79				0.00 [mH]	65.50 [mH]	0.000 [mH]
P21.80	1		1	0.800	1.350	1.140
P21.81	2		2	0.800	1.350	0.940
P21.82	3		3	0.800	1.350	1.080
P21.83	4		4	0.800	1.350	0.950
P21.84				0.00 [mH]	655.00 [mH]	0.00 [mH]
P21.85		85%	85%			

10.21 3 P22

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

P22.31			0.0 [%]	100.0 [%]	5.0 [%]
P22.32			0.0 [%]	100.0 [%]	5.0 [%]
P22.34		[0] [1]	0	1	0
P22.35			0.0 [s]	100.0 [s]	0.0 [s]
P22.36			50.0 [%]	150.0 [%]	110.0 [%]
P22.37			0.0 [%]	150.0 [%]	100.0 [%]
P22.38			0.0 [%]	100.0 [%]	25.0 [%]
P22.39			0.0 [%]	120.0 [%]	100.0 [%]
P22.40			0.0 [%]	150.0 [%]	100.0 [%]
P22.41			0.0	150.0	135.0 [%]
P22.42		[0] [1]	0		1
P22.43			2		

P22.53	Kp	0.0 [%]	1000.0 [%]	100.0 [%]
P22.54	Ki	0.0 [%]	1000.0 [%]	100.0 [%]
P22.55		0.0	1000.0	

10.22 4 P23

P23.0

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P23.54	Ki		0.0 1000.0 [%]	100.0 [%]	
P23.55			0.0 1000.0 [%]	100.0 [%]	
P23.56			0.0 1000.0 [%]	100.0 [%]	
P23.57		[0] [1]	0 1	0	
P23.58			0.0 125.0 [%]	100.0 [%]	
P23.59			1.0 25.0 [%]	2.5 [%]	
P23.60	DROOP	0 DROOP	0.0 100.0 [%]	0.0 [%]	
P23.61	DROOP	DROOP	30 2000 [ms]	50 [ms]	
P23.62			0.0 1000.0 [%]	100.0 [%]	
P23.63			0.0 1000.0 [%]	100.0 [%]	
P23.66	1	1	0.0 1000.0 [%]	100.0 [%]	
P23.67	2	2	0.0 1000.0 [%]	100.0 [%]	
P23.69			0.00 2.00 [%]	1.00 [%]	
P23.70			0.00 2.00 [%]	1.00 [%]	
P23.71		[0] [1]	0 1	0	
P23.72		[0] [1]	0 1	1	
P23.73		[0] × 1 [1] × 10	0 1	0	
P23.74			0.00 650.00 [mOhm]	0.00 [mOhm]	
P23.75			0.70 1.00	0.90	
P23.76	1	1	90.0 110.0 [%]	100.0 [%]	
P23.77	2	2	90.0 110.0 [%]	100.0 [%]	

P23.78			0.00 [mOhm]	650.00 [mOhm]	0.00 [mOhm]
P23.79			0.00 [mH]	65.50 [mH]	0.000 [mH]
P23.80	1	1	0.800	1.350	1.140
P23.81	2	2	0.800		

10.23 P33

P33.0 Profibus	[0] [1]	0 1	0
P33.1	PLC	1 255	1
P33.2	[0]PPO 1 [1]PPO 2 [2]PPO 5 [3]GUIDE	0 3	2
P33.3		0 16	14
P33.4		ON	

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[o]

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

7-2

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 48	AW22 29

11.

11.1

W01	SYS_NOT_RDY	(Ready)			
W02	NO_DRV_ENABLE	]	[	P3	
W03	LOCAL_EM	]	[	P3	
W04	REMOTE_EM	]	[	P3	
W06	O.T	)	P7.14(		
W09	DP P/B ALARM	DP		DP	
W10	MODBUS MODBUS ALARM	Modbus		Modbus	
W15	PARAMETER ERROR				
W18	Temp_Sensing Fail				
W20	SLV_NOT_RDY				
W21	1 SLV1_CAN_ERR		1		1
W22	2 SLV2_CAN_ERR		2		2
W23	3 SLV3_CAN_ERR		3		

VB/L9V3B

[E113]	MIP	
[E114]	MOP	
[E115]	OS	P7.19 P7.19
[E116]	SLVC Fail	P7.23
[E117]	MOTOR STALL	P20.14 P20.15
[E118]	PG ERROR	P20.14 P20.15
[E119]	SPEED ABNORMAL	P20.14 P20.15 P7.31 P7.32
[E121]	IGBT1 OT1	
[E122]	IGBT2 OT2	
[E123]	IGBT3 OT3	
[E124]	IGBT4 OT4	
[E125]	IGBT5 OT5	
[E126]	IGBT6 OT6	
[E127]	IGBT7 OT7	
[E128]	IGBT8 OT8	
[E137]	FAN STALL	

[E138]	TEMP_SENSING FAIL
[E139]	Pre_Charging Fail P7.95
[E140]	Line UV
[E141]	Line OPEN
[E142]	Line Detection Error
[E143]	DI Line SW Fail
[E144]	Line SW SHORT
[E145]	(AFE) Line OV P16.0
[E146]	(AFE) Line Over_Freq
[E151]	U IGBT PDP [UT]	IGBT IGBT
[E152]	U IGBT PDP [UB]	IGBT IGBT
[E153]	V IGBT PDP [VT]	IGBT IGBT
[E154]	V IGBT PDP [VB]	IGBT IGBT
[E155]	W IGBT PDP [WT]	IGBT IGBT
[E156]	W IGBT PDP [WB]	IGBT IGBT

-
- ON
- COM

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- ON
- COM (
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12.

1.

2.

3.

12.2

1.
2.

1.
2.

1.
2.
3.

1. > 40
   < 95%
2.

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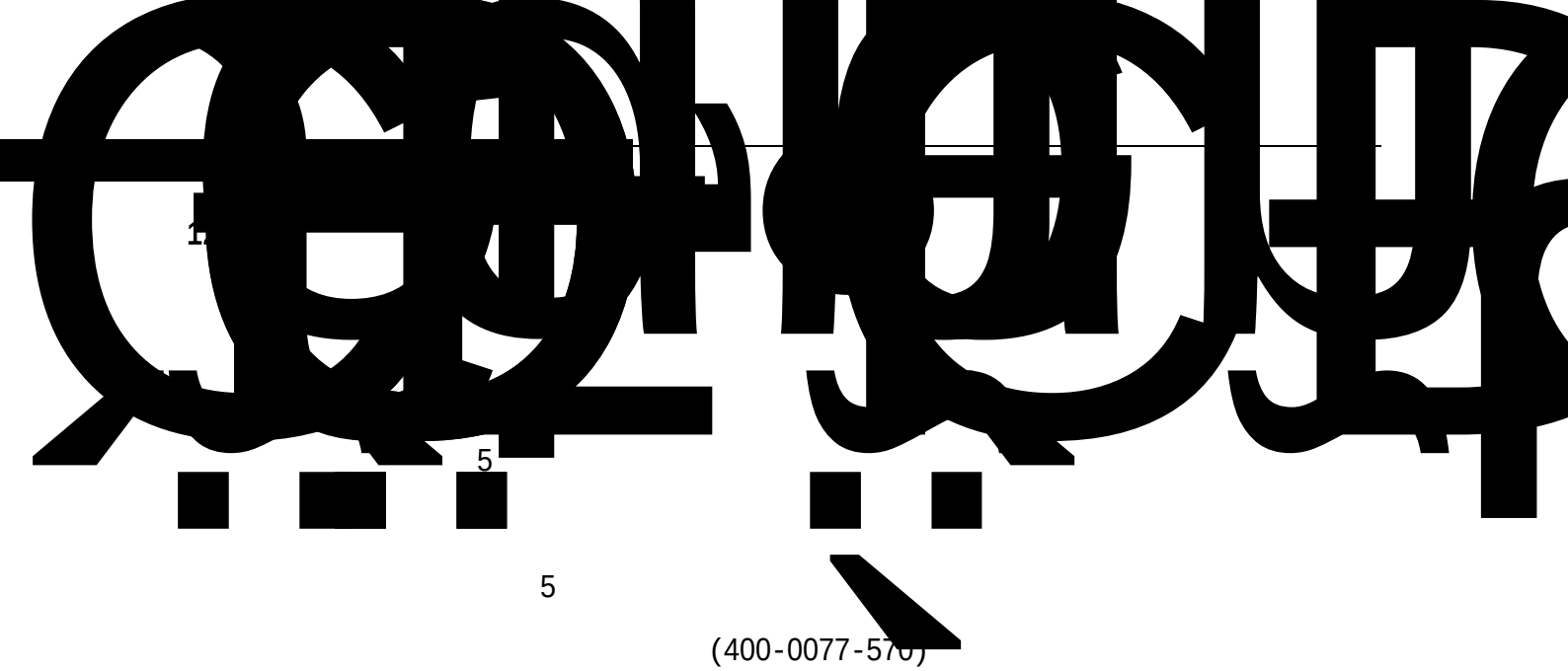
2.

1.
2.
3.



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(400-0077-570)

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2 80%

3 24 /

12.5

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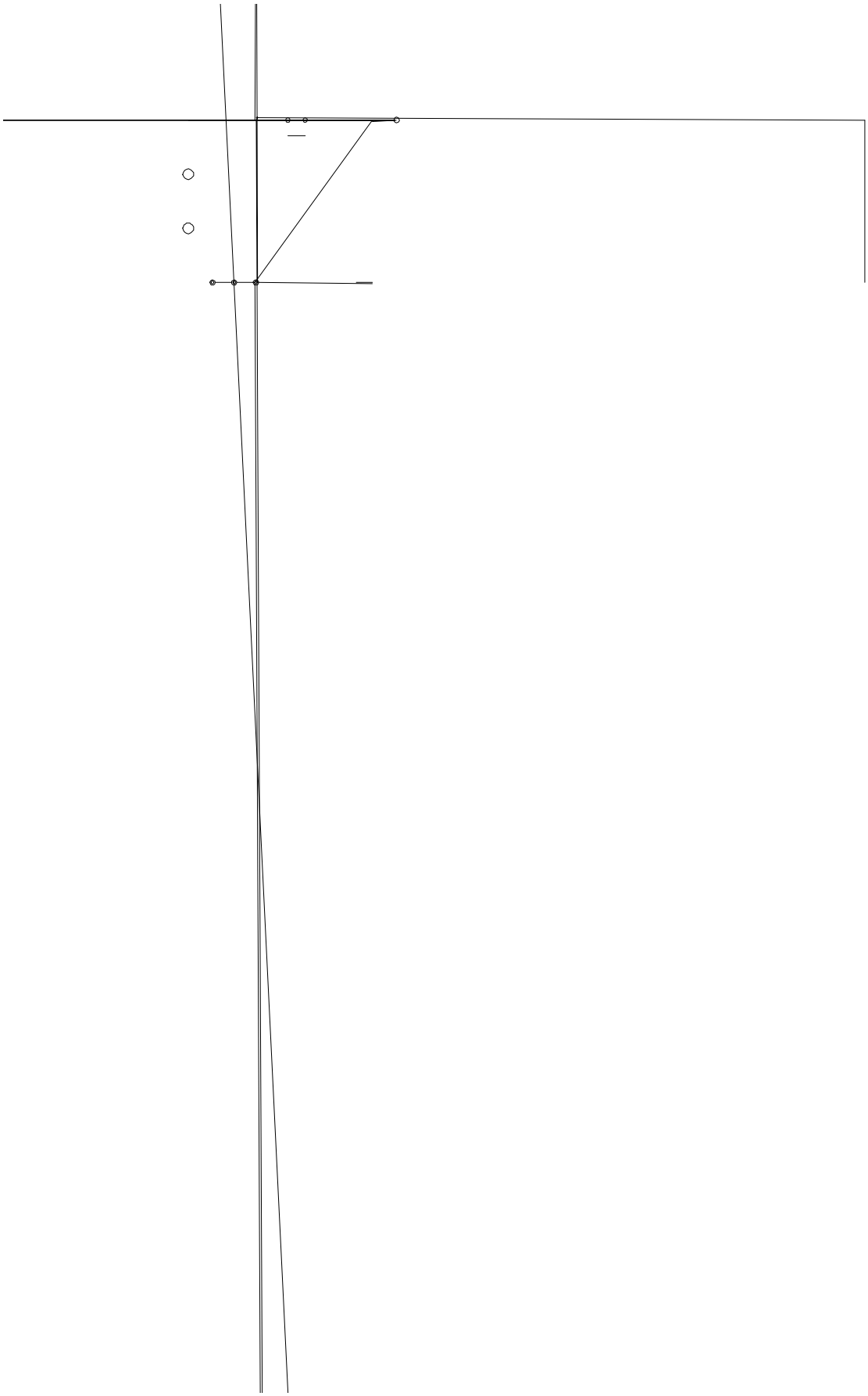
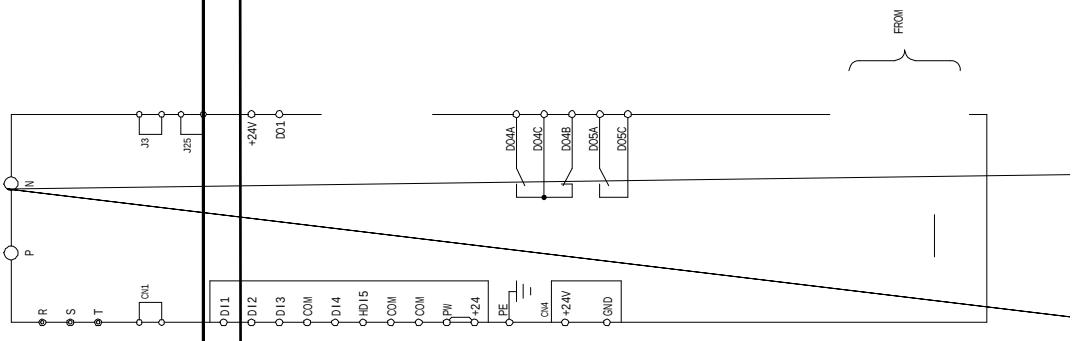
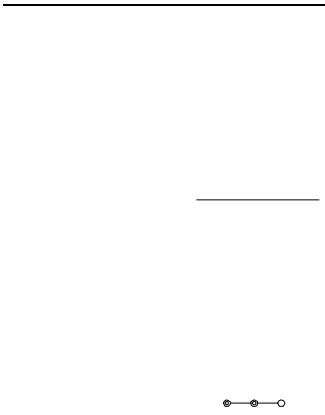
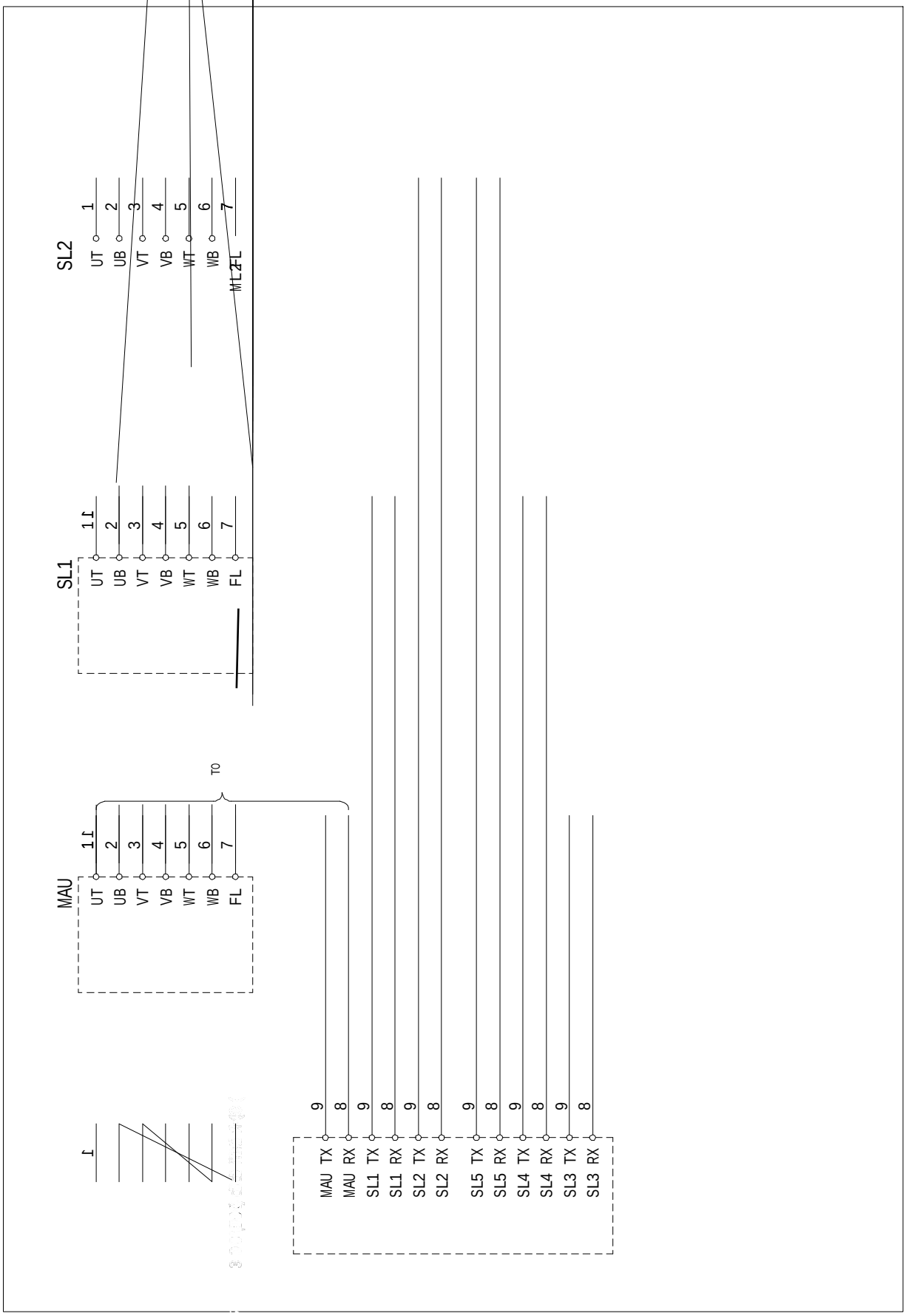



FROM
J3
J25
+24V
DO1
DO4A
DO4C
DO4B
DO5A
DO5C
IN
P
R
S
T
CN1
DI1
DI2
DI3
COM
DI4
HDI5
COM
COM
PW
+24
PE
CN4
+24V
GND




SL2
SL1
MAU
TO
UT
UB
VT
VB
WT
WB
FL
MAU TX
MAU RX
SL1 TX
SL1 RX
SL2 TX
SL2 RX
SL5 TX
SL5 RX
SL4 TX
SL4 RX
SL3 TX
SL3 RX

HF680N-5

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