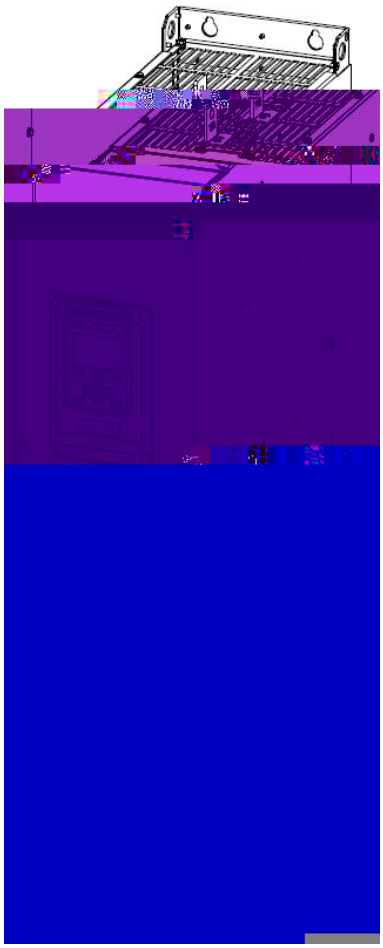
HF680N

DC-DC

V1.02

Wuhan Guide Technology Co.,Ltd.



1.
    1.1
    1.2
    1.3
2.
    2.1
    2.2
    2.3
    2.4   DC-DC
        2.4.1
        2.4.2
        2.4.3
        2.4.4
3.
    3.1
    3.2
    3.3
    3.4
4.
    4.1 DC-DC
    4.2
        4.2.1
        4.2.2
        4.2.3
        4.2.4
        4.2.5 TN TT IT
        4.2.6 TT
        4.2.7 IT
    4.3
    4.4
    4.5
    4.6
    4.7 IO
        4.7.1   DI
        4.7.2
        4.7.3
        4.7.4   DO
4.8
        4.8.1
        4.8.2   AV AI
        4.8.3   AO
        4.8.4
        4.8.5
    4.9.
        4.9.1

4.9.2
4.10
5.
5.1
5.2
5.3
5.4
5.4.1
5.4.2
5.4.3
5.4.4
6.
6.1.
6.1.1
6.1.2
6.1.3
6.2.
6.2.1
6.2.2
6.2.3
6.3.
6.3.1
6.3.2
6.3.3
6.3.4
6.3.5 ( )
6.3.6 ( )
6.3.7
7.
7.1.
7.2.
7.3.
7.3.1
7.3.2
7.4.
7.4.1
7.4.2
7.4.3
7.4.4
7.5.
7.5.1
7.5.2
7.5.3
7.5.4 Modbus
8.
8.1.
8.1.1
8.1.2

8.1.3
8.1.4
8.2.
8.2.1
8.2.2
8.2.3
8.2.4
8.2.5
8.3.
8.3.1
8.3.2
8.4.
8.4.1 Modbus
8.4.2 PN
9.
9.1.
9.2.
9.2.1 P3
9.2.2 P4
9.2.3 P5
9.2.4 P6
9.2.5 P7
9.2.6 P8
9.2.7 DC-DC P9
9.2.8 P10
9.2.9 Modbus P32
9.2.10 P33
10.
10.1
10.2
10.3
11.
11.1
11.2
11.3
11.4
11.5

1

RCD

RCM

RCD RCM

B RCD RCD

RCD RCD

2

1.2

(1) -

(2) DC-DC

(3) DC-DC

1.3

DC-DC

DC-DC

DC-DC

Ð

2.

2.1

HF680N09F DC-DC

DC-DC

2.4 DC-DC



1. DC-DC / “ ”

/

2.

3.

- U V W
- P N

4. 5

5.



1.

2.

3.
40

4. 1.2

2.4.1

-20 +60

0% 95%

1 5

2.4.2

95%RH

1000 1000 100

1% 3000

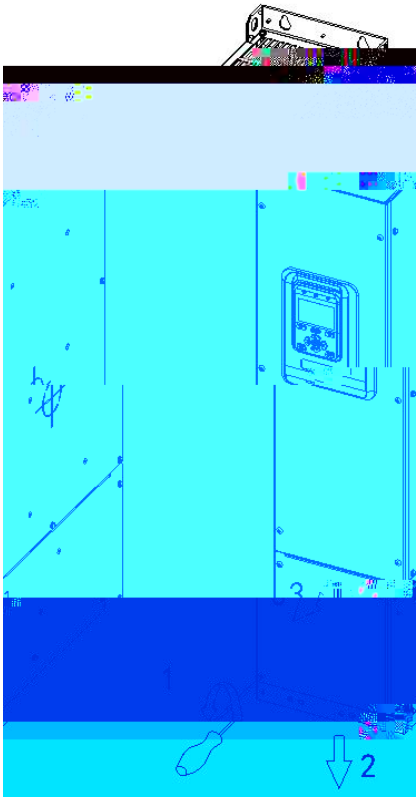
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2.4.4

1

2

3



3.2

		500V-750V
		250V-700V
		3kHz
		2 0-10V 0-20mA
		2 0-10V 0-20mA
		5 DI
		1 DO 2
		485 PN DP
		≤1%FS ≤0.1%FS
		≤0.5%FS ≤0.2%FS
		≤1%FS
		≥97%
		780V
		371V
		2.5
		150% 60s 180% 10s 200% 1s
		85
		10cm 5cm
		95%RH

3-2

3.3

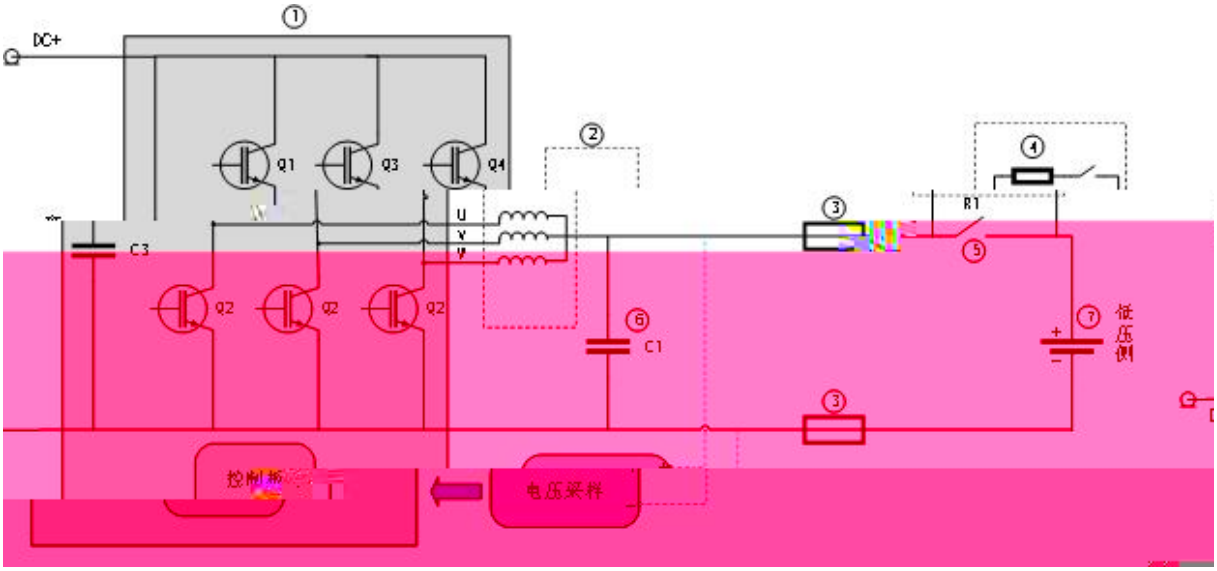
3.3.1

DC-DC DC-DC

DC-DC

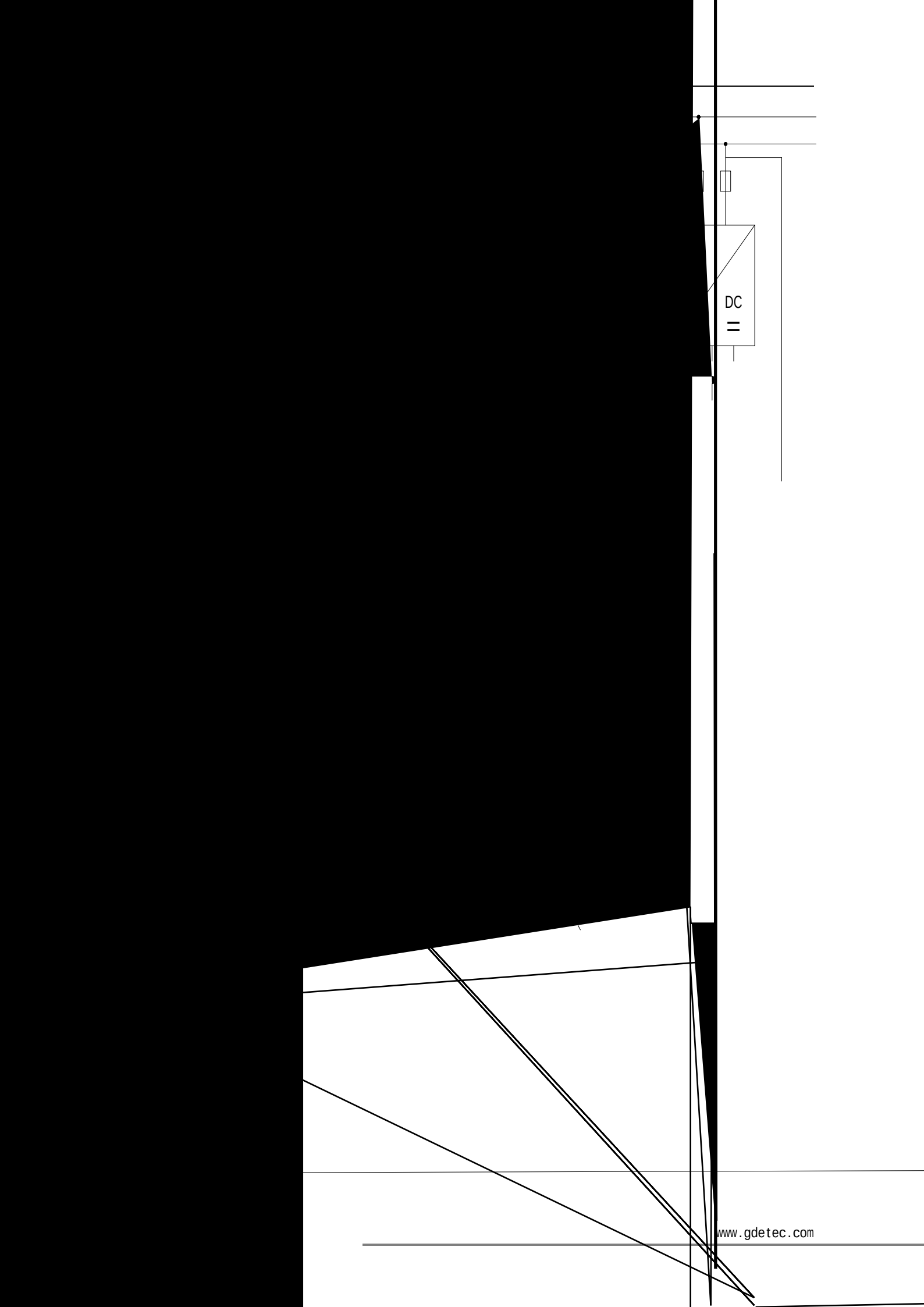
3.3.2

HF680N09F DC-DC



1-2 HF680N09F DC-DC

1	HF680N09M	1
2		3
3		-
4		1
5		-
6		-
7		-


DC
=

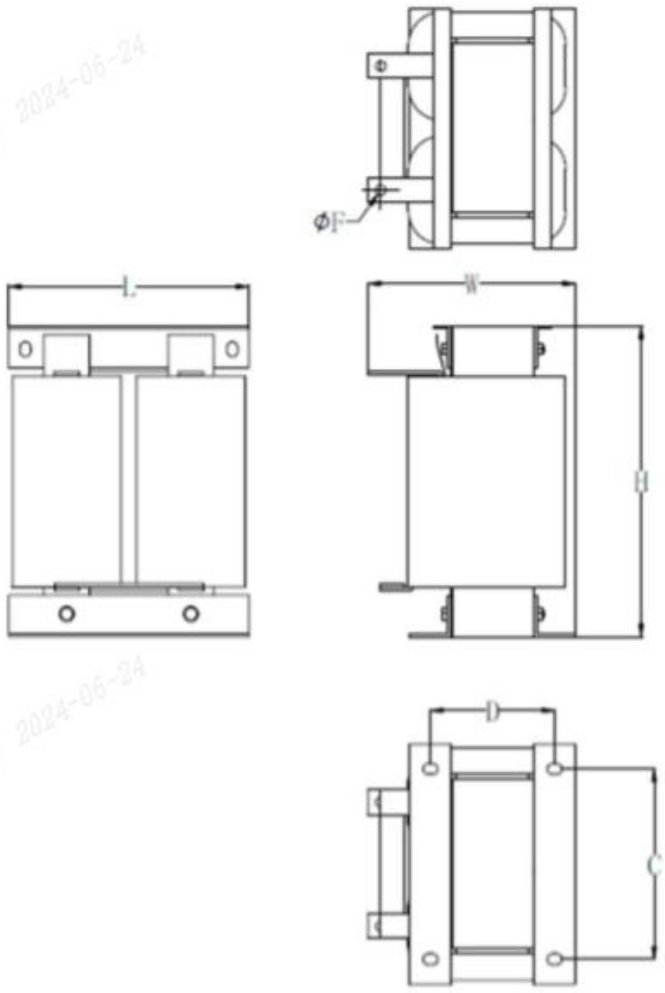
3.4

4.2.1

DC-DC		V_{DC} V	I_{DC} A	(kW)	
HF680N09F-100-4	HF680N09M-100-4	250-700	150	100	B4
HF680N09F-200-4	HF680N09M-200-4	250-700	300	200	
HF680N09F-265-4	HF680N09M-265-4	250-700	400	265	
HF680N09F-300-4	HF680N09M-300-4	250-700	450	300	
HF680N09F-400-4	HF680N09M-400-4	250-700	600	400	B5

3-3

3.4.1



滤波电抗器示意图

DC-DC			A		mm L*W*H	mm C*D	F(mm)	Kg
HF680N09F-100-4	GDHF680NDG-100-800	3	50		200×250×230	4-φ11×φ18-176×140	2-φ6.4	26.5
HF680N09F-200-4	GDHF680NDG-200-800	3	100		250×315×290	4-φ12×φ20-212×154	2-φ11	41.5
HF680N09F-265-4	GDHF680NDG-265-800	3	150		255×320×325	4-φ11×φ18-200×176	2-φ11	56.6
HF680N09F-300-4	GDHF680NDG-300-800	3	150		255×320×325	4-φ11×φ18-200×176	2-φ11	56.6
HF680N09F-400-4	GDHF680NDG-400-800	3	200		280×245×325	4-φ12×φ20-100×140	2-φ11	45

3-4

3.4.2

DC-DC			mm	mm	
HF680N09F-100-4	GDHF680NDY-100-800	1	116	230	M6×8
HF680N09F-200-4	GDHF680NDY-200-800	1	116	230	M6×8
HF680N09F-265-4	GDHF680NDY-265-800	1	116	230	M6×8
HF680N09F-300-4	GDHF680NDY-300-800	1	116	230	M6×8
HF680N09F-400-4	GDHF680NDY-400-800	1	116	230	M6×8

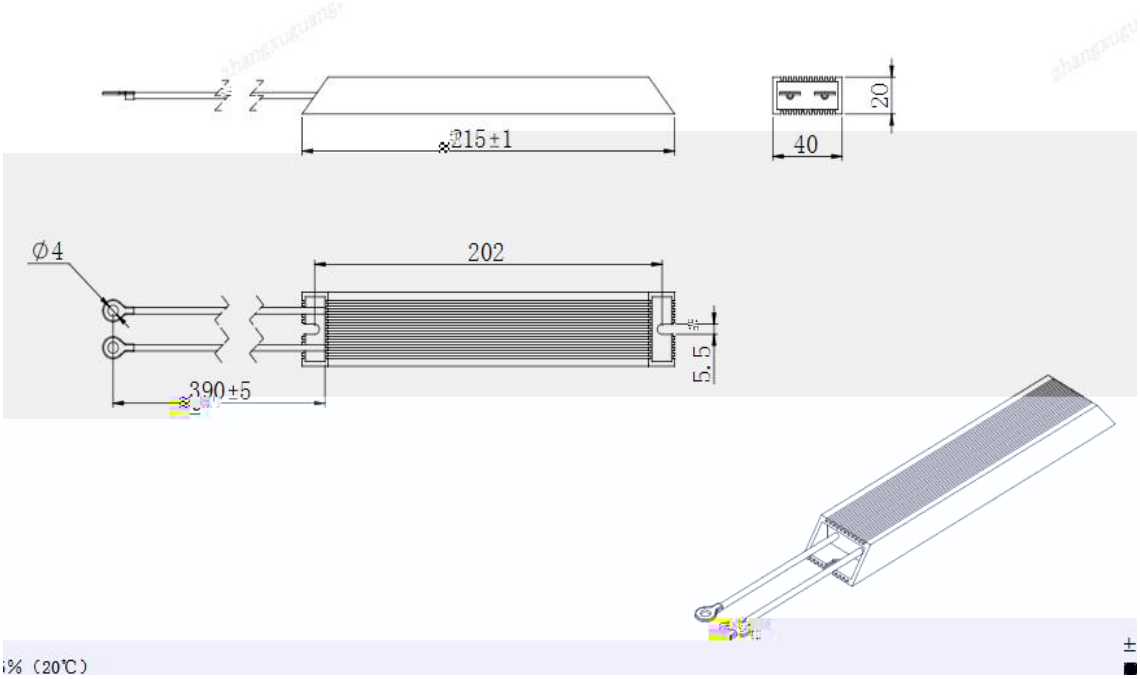
3-5

3.4.3

DC-DC			
HF680N09F-100-4	160A,690V	1	
HF680N09F-200-4	315A,690V	1	
HF680N09F-265-4	420A,690V	1	
HF680N09F-300-4	470A,690V	1	
HF680N09F-400-4	630A,690V	1	

3-6

3.4.4



DC-DC

1

HF680N09F-100-4 GDHF680NHC-100-800

1

4.

4.1 DC-DC

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

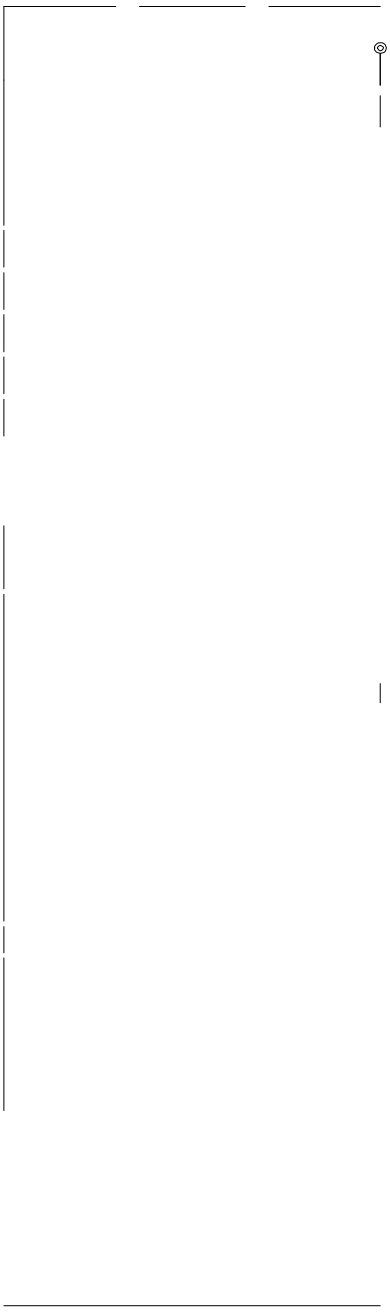
1000 1000 100 1%

3000

2

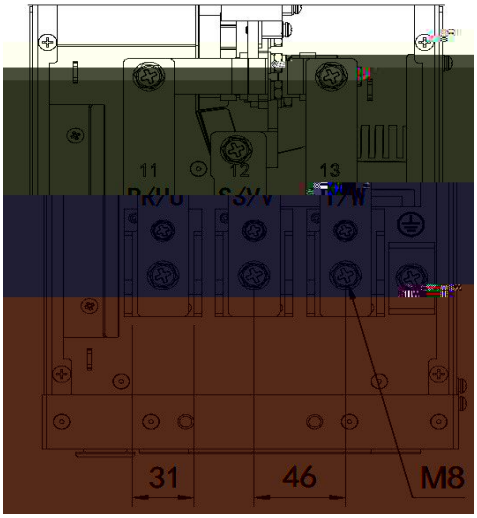
4.2

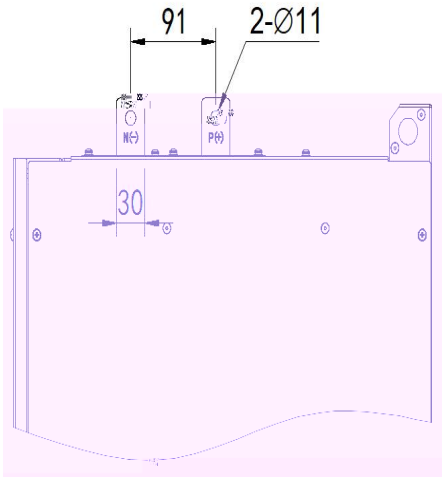
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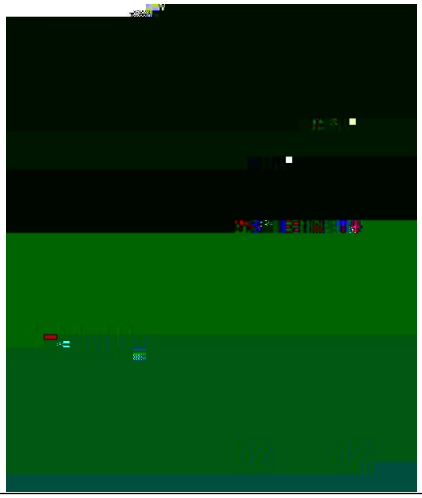
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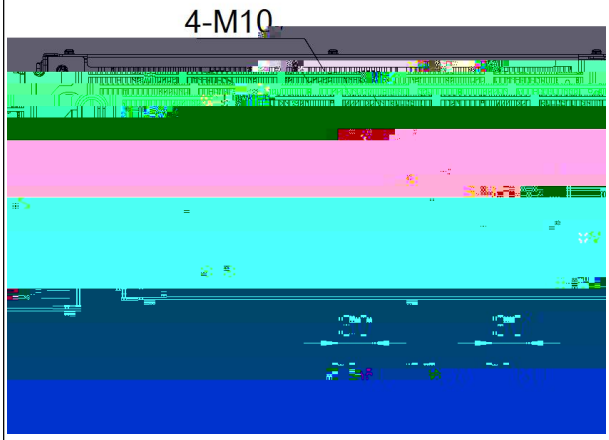
B4





B5





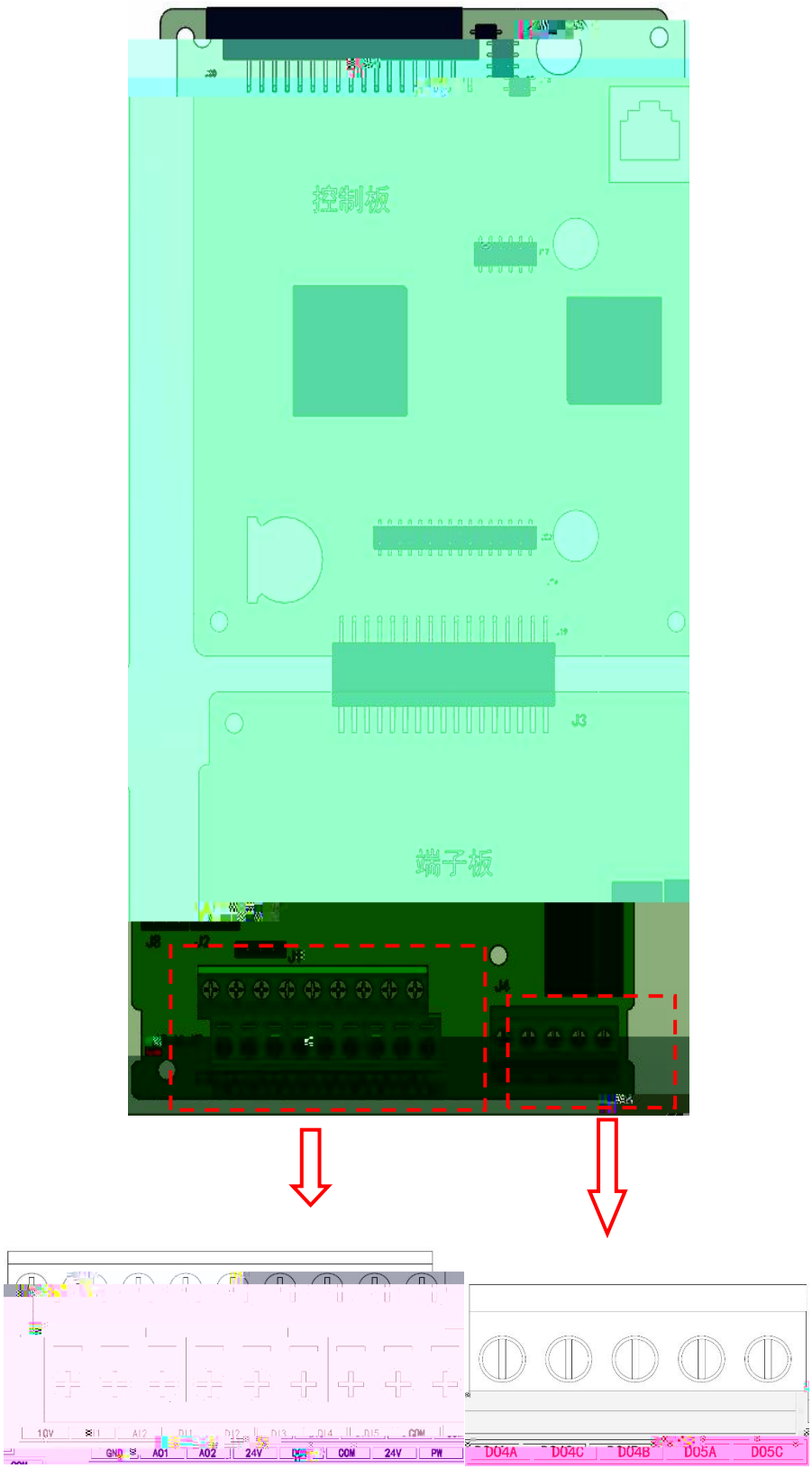
DC-DC

P +	
N -	
U V W	
⏚	

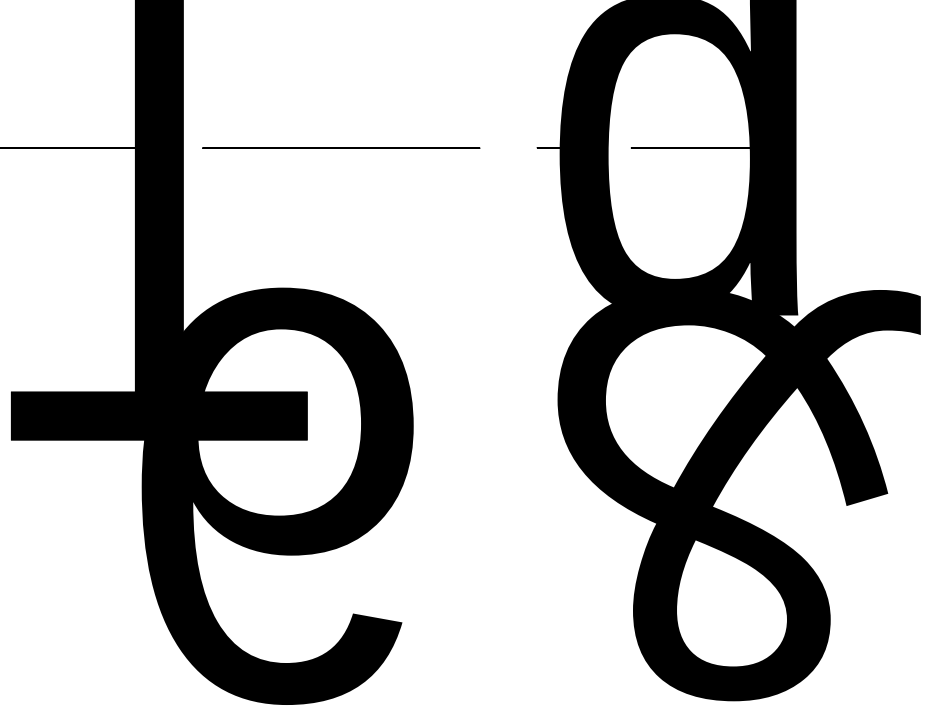
4.2.3

1		
2	10	
3	DC-DC	
4	10cm	
5	0.75mm² DC-DC 50m	
6	10cm	
7		
8	DC-DC	

4.2.4


控制板
端子板
J3
10V
AI1
AI2
DI1
DI2
DI3
DI4
DI5
COM
GND
AO1
AO2
24V
COM
24V
PW
DO4A
DO4C
DO4B
DO5A
DO5C

	+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
	DI2- PW	2	
	DI5-		
	AO1-GND		
	AO2-GND	2	0V~10V 0mA~20mA
	DO1-COM	1	0V~24V 0mA~50mA
(,	DO4A-DO4C	1	
	DO4B-DO4C	2	=0.4 30VDC 1A
	DO5A-DO5C	3	250VAC 2A COS =0.4 30VDC 1A



5 TN TT IT

T

I

T

N

4.2.5.1

380V~480V -15%~+10% 50/60Hz ±5%

OVCIII PD2

4.2.5.2

3000m 1000m 1000m

100m 1% 1000m 3000m

4.2.5.3 TN

TN 8”

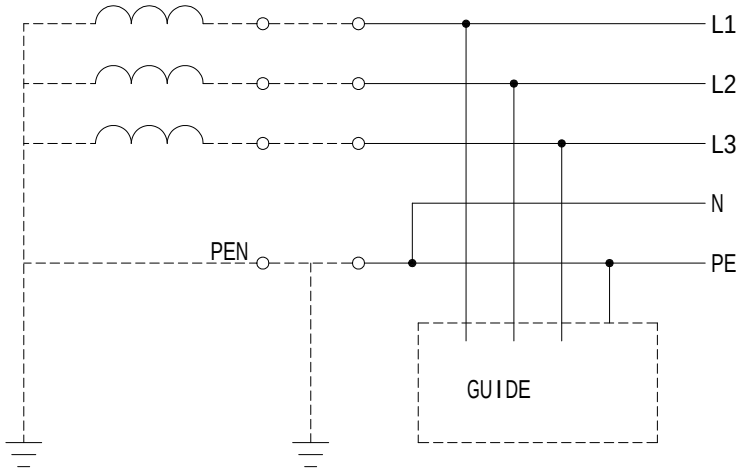
TN-S N PE

EMI TN

TN-C-S N PE PEN

N PE

EMI TN-C-S



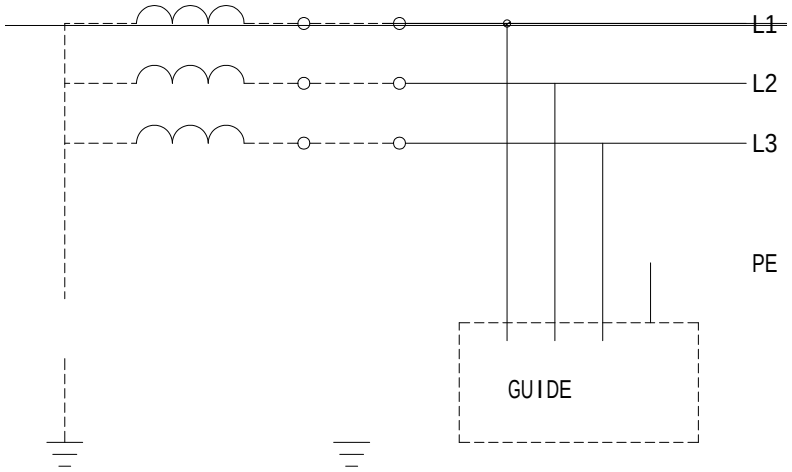
TN-C-S TN-C PEN N PE

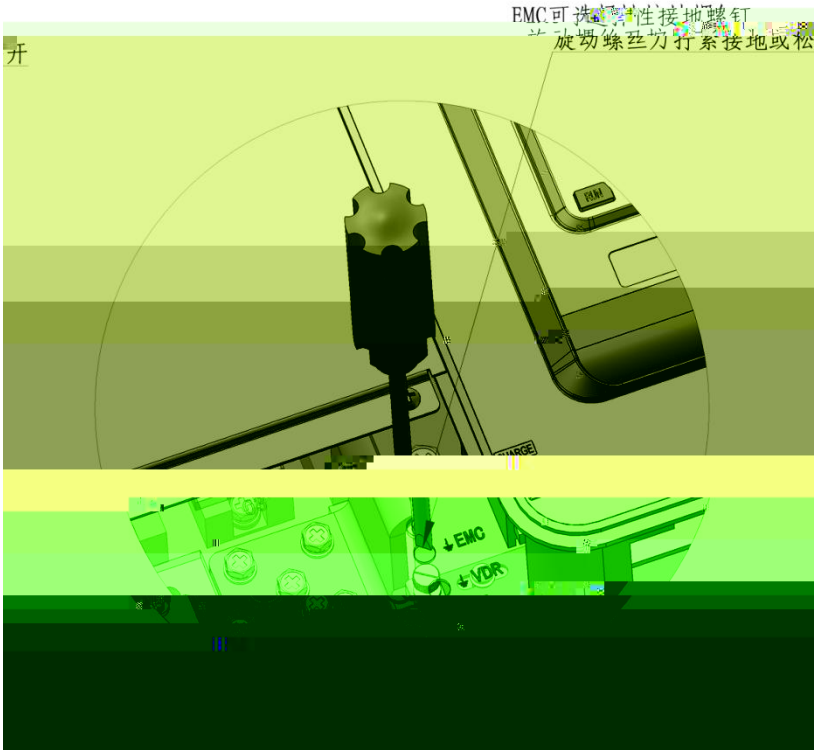
TN

N TN

EMI

TN


L1
L2
L3
PE
GUIDE



EMC/VDR

: EMC EMC

4.3

IEC

EN60204-1 IEC60364-5-52

PVC ;

40 70 40 °

;

;

EMC

PE PE

90%

C1 1000V

C2 1000 V

C3 1000 V

C4 1000 V 400

A

4.5

- C3

1 TN TT

2

3 10m

4 EMC

- C2

1

2 TN TT

3

4 10m

5 EMC

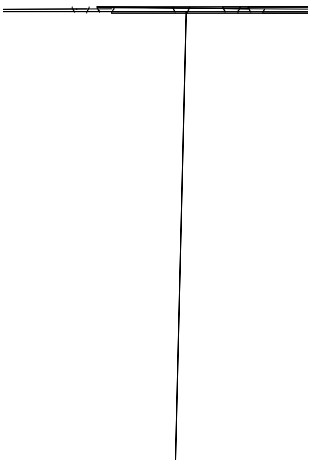
4.6

1

30cm

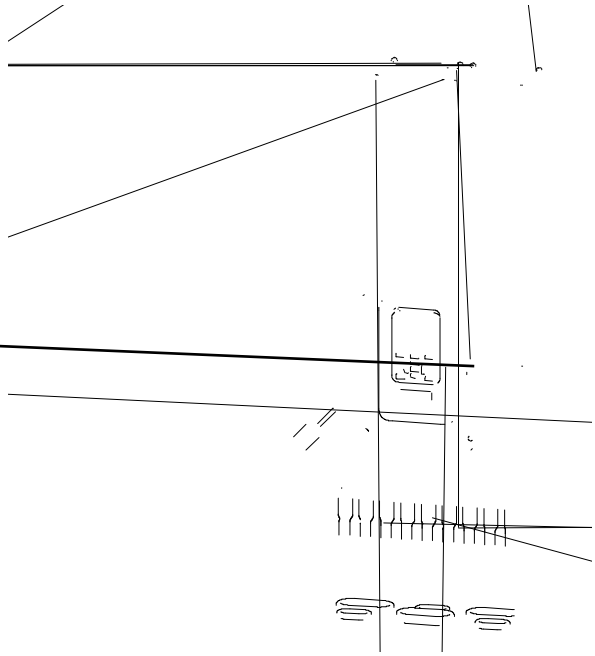
2 RST UVW

IO



IT

IT EMC/VDR



3.5 mA IEC/EN 61800-5-1

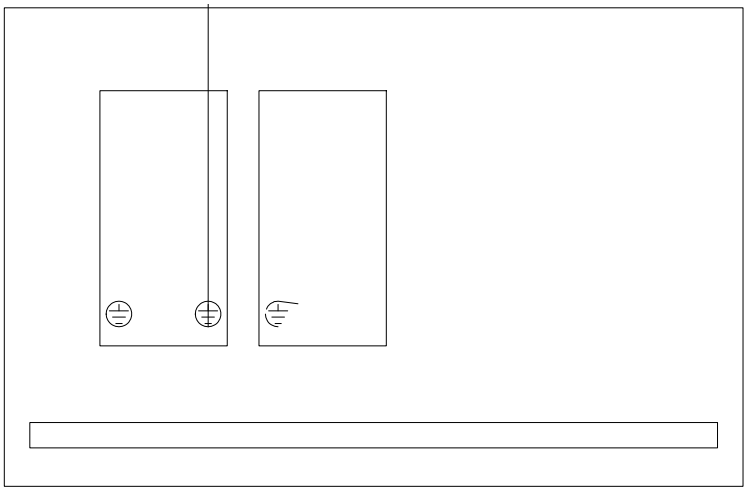
10mm²

EMC

EMC

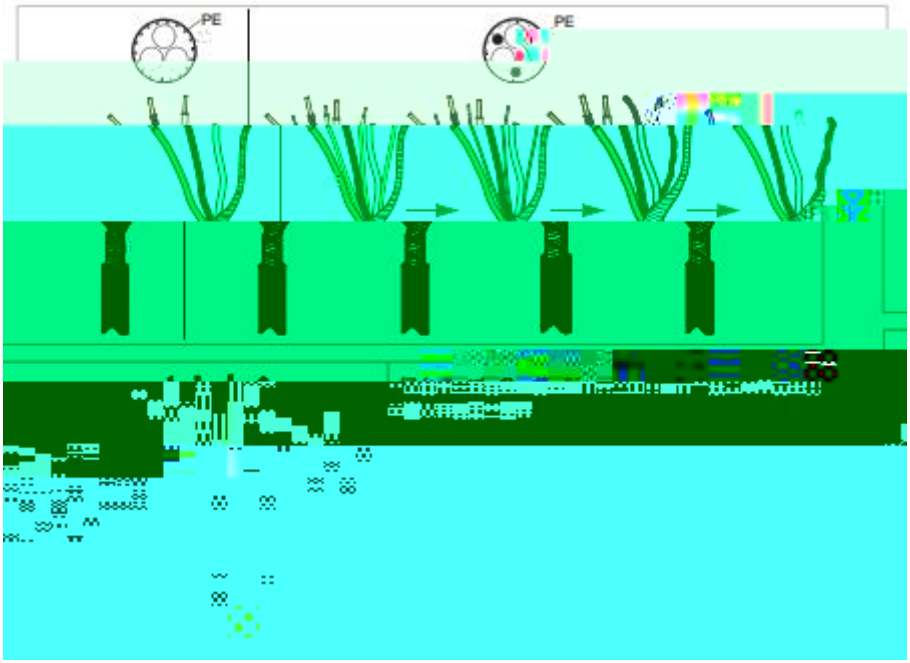
VDR VDR

B.



PE

360



10 mm 2 (8 AWG)

4.7 IO

4.7.1 DI

(NPN) (PNP)

(NPN) DI

(PNP) DI

(NPN)

24V PW +24V

24V PW +24V

24V PW DI

0V

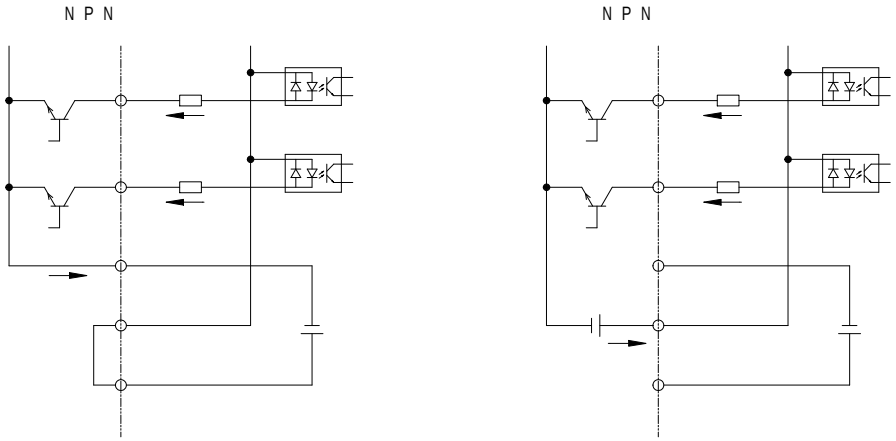
4.7.2

24V OP +24V

24V OP +24V

24V OP DI

0V



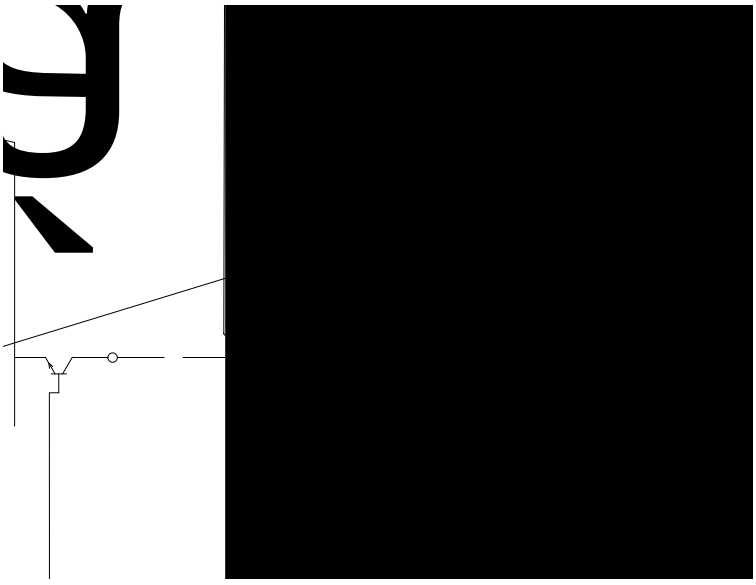
DI (NPN)

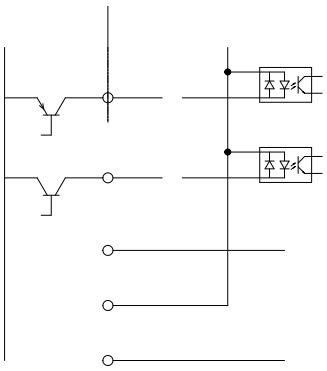
DI

DI DI DI

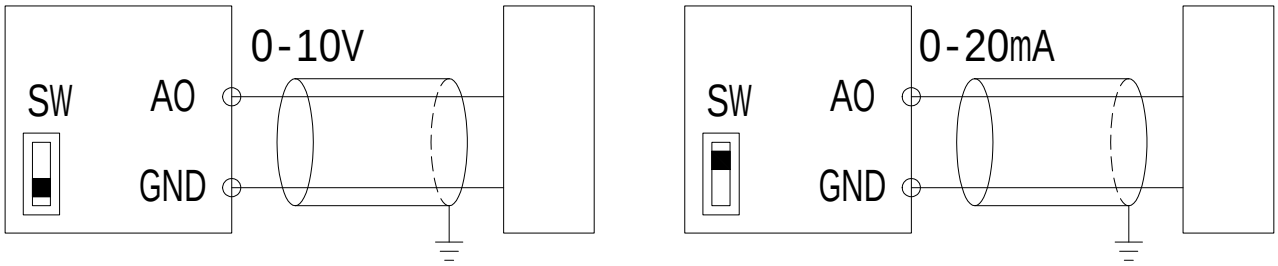
DI

IF >40mA VR>40V





AO /



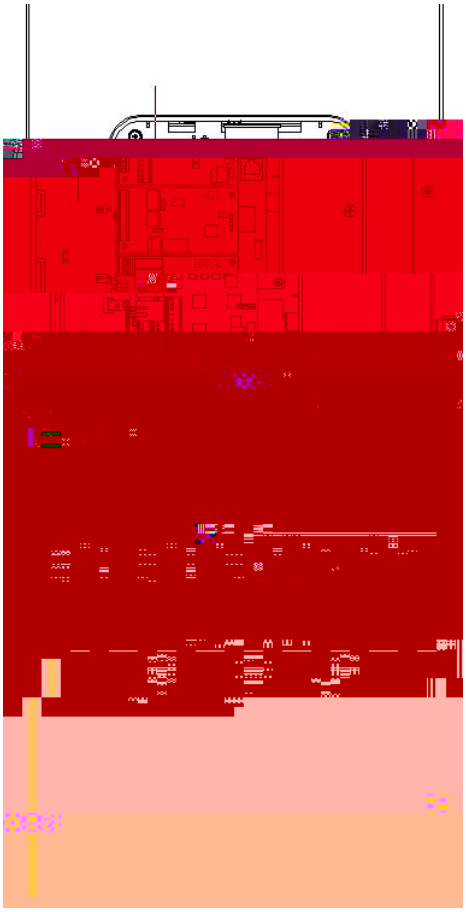
AO

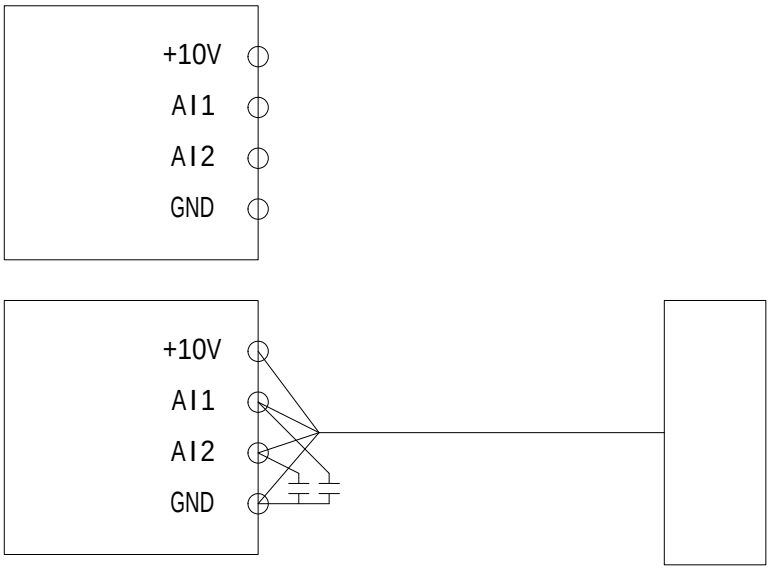
AO

	VO	CO	VO AO 0~10V CO:AO 4~20mA
COM*			CO:AO 4~20mA

1mA 0.5V 20mA 10V

4.8.4




+10V
AI1
AI2
GND
+10V
AI1
AI2
GND

50cm

2

5mm~7mm

3

4.9.2

4.9.2.1

50cm

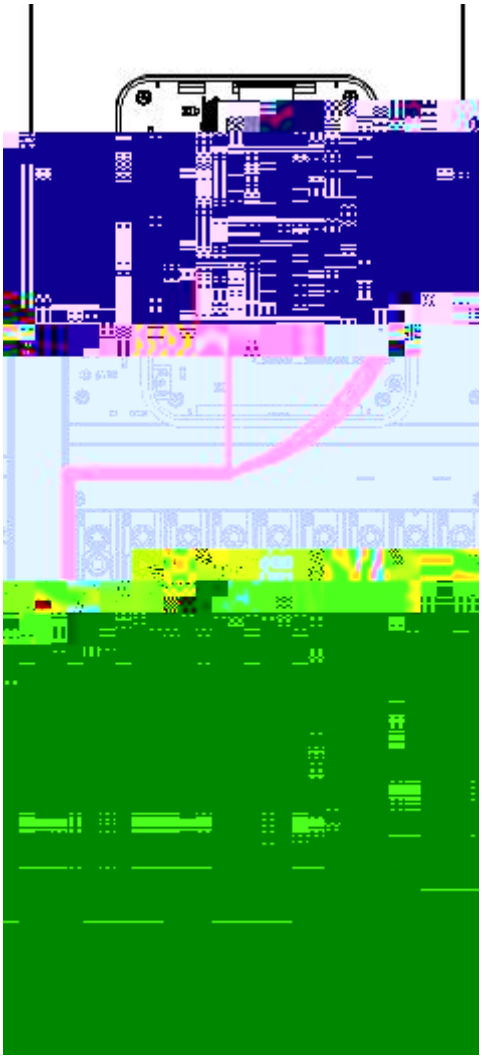
RST \ S

IO

IO AI AO DI DO

IO RST UVW

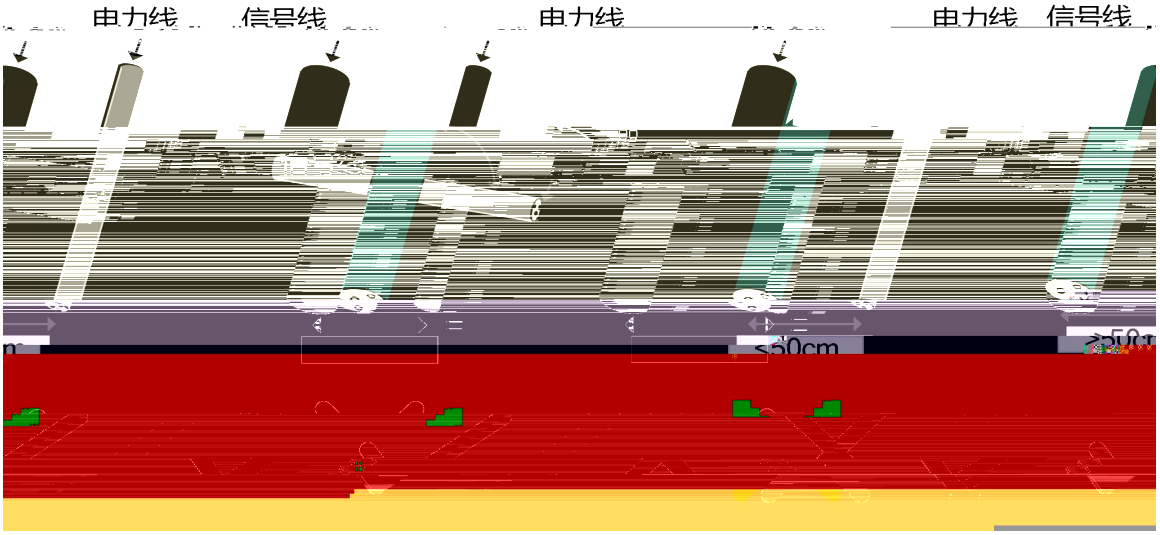
20cm IO

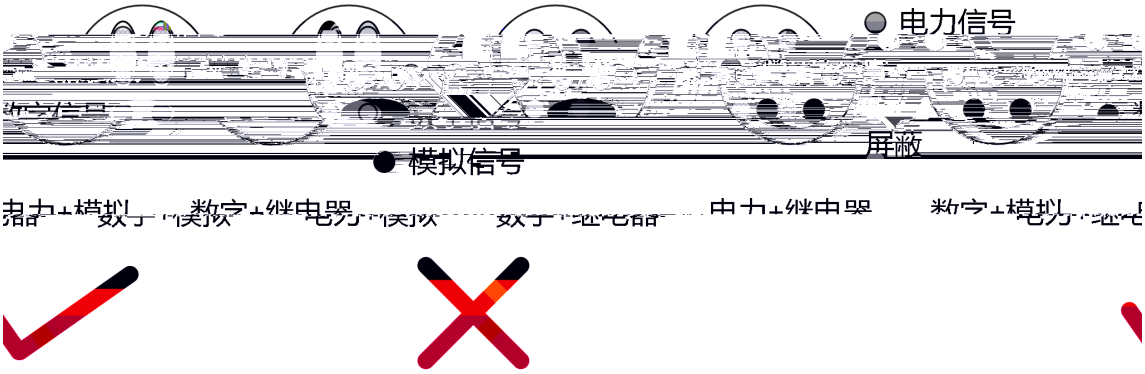


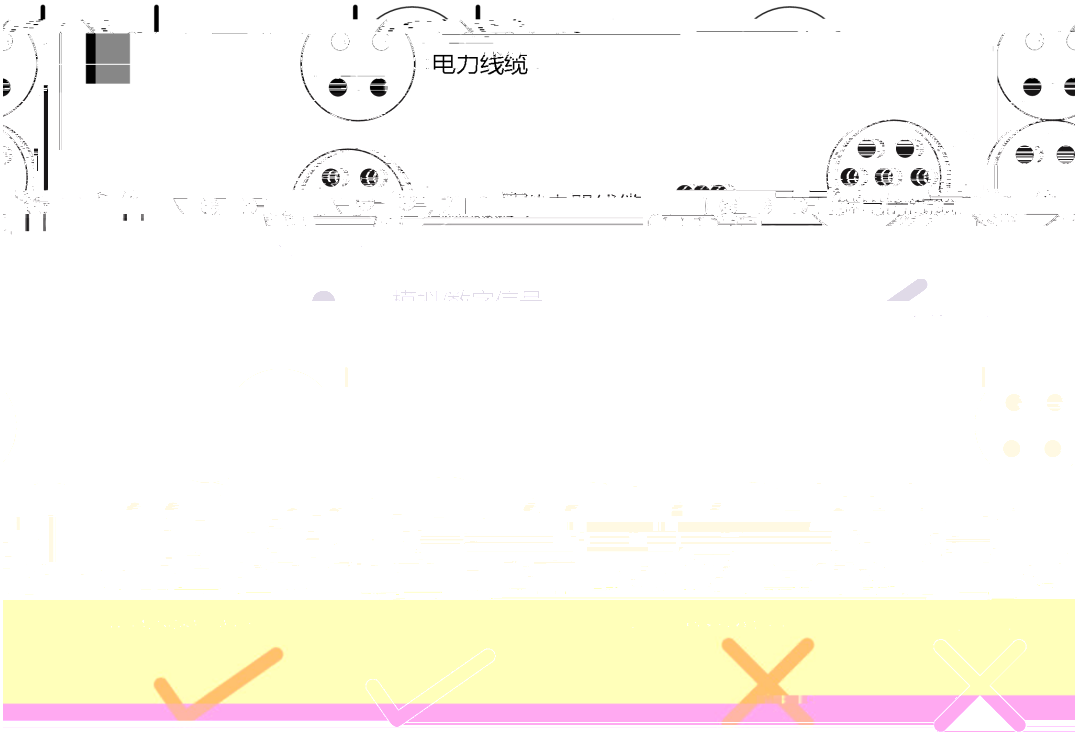
20cm

4.9.2.2

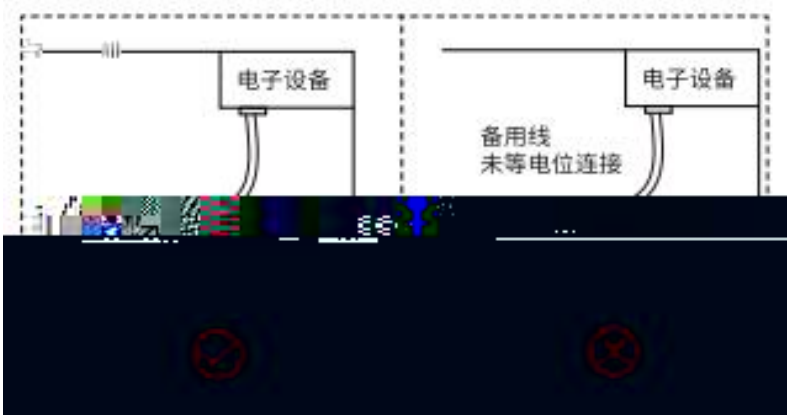
50cm

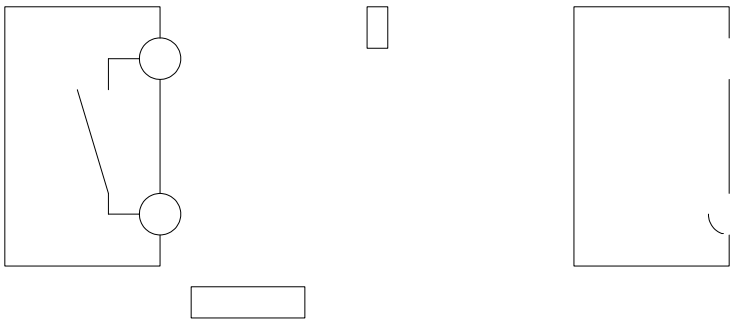


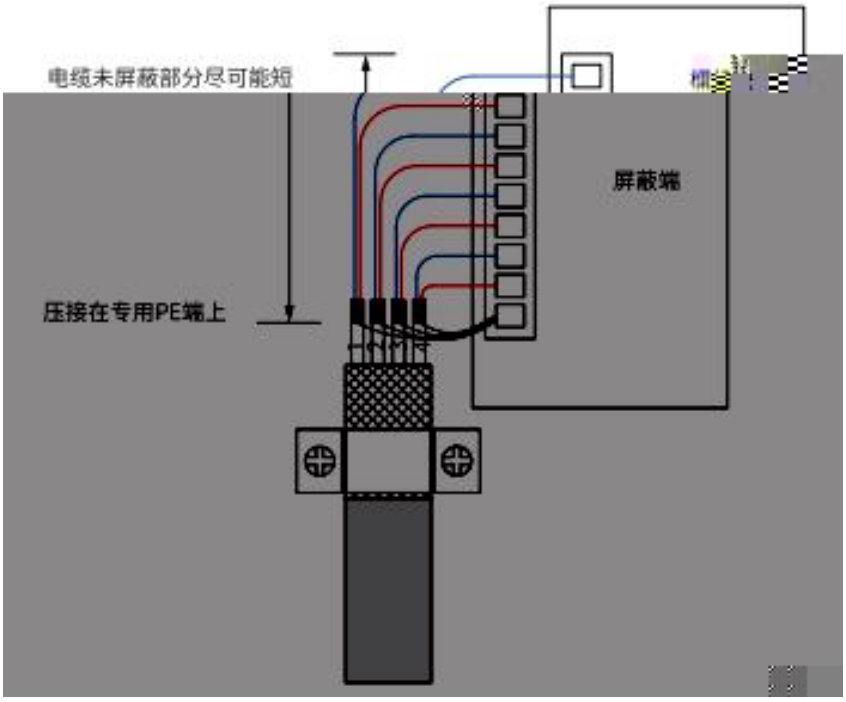

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屏蔽
模拟信号


电力线缆

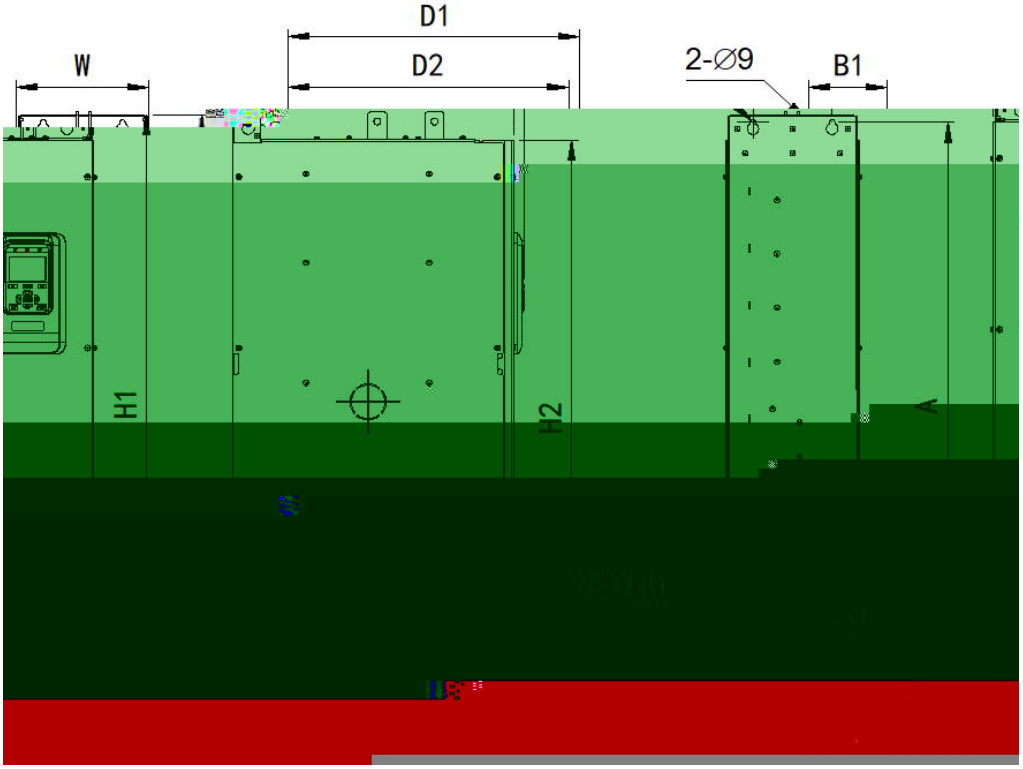
+


电子设备
电子设备
备用线
未等电位连接

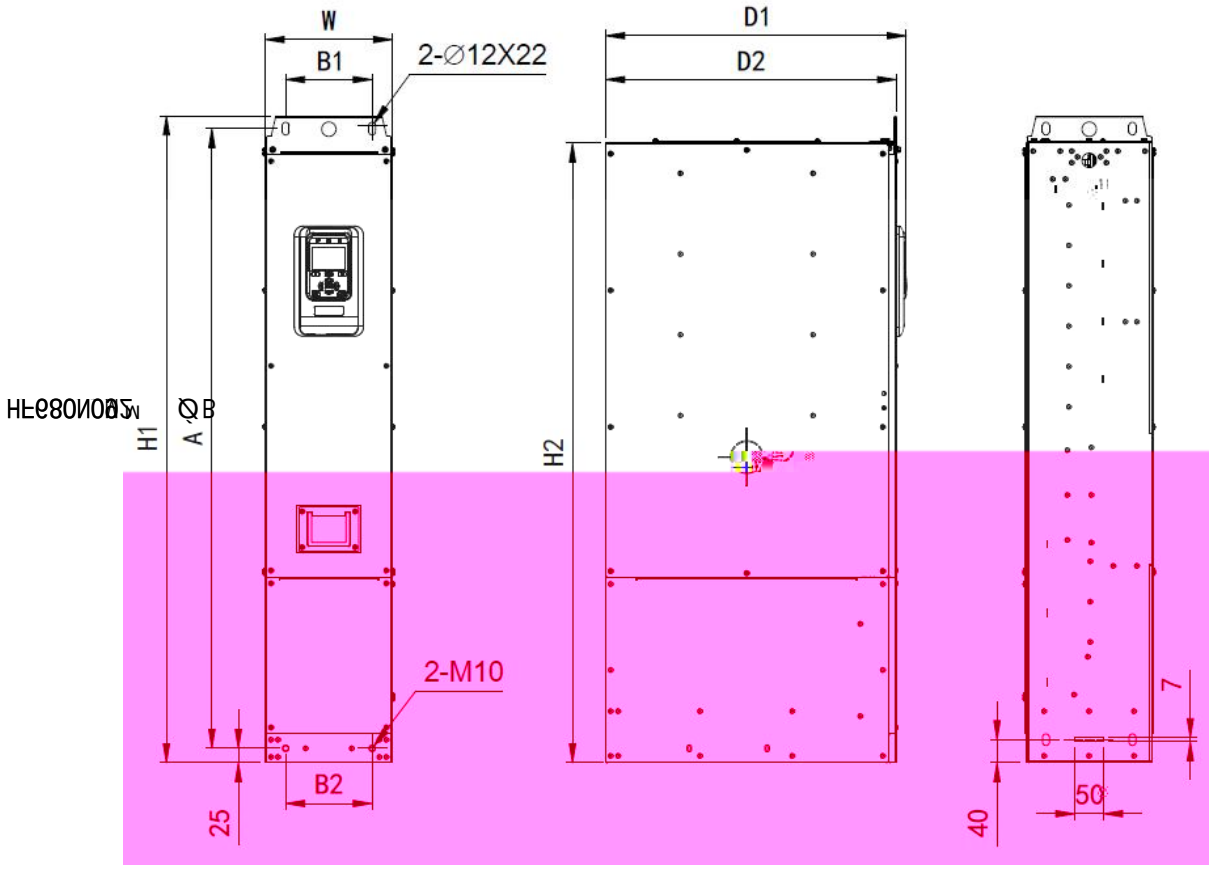



电缆未屏蔽部分尽可能短
屏蔽端
压接在专用PE端上

4.10



B4



B5

mm mm

8.8 kg

H1 H2 W D1 D2 A B1 B2

HF680N09M M Ø

5.

5.1

HF680N09M DC-DC F1

5.2

▼

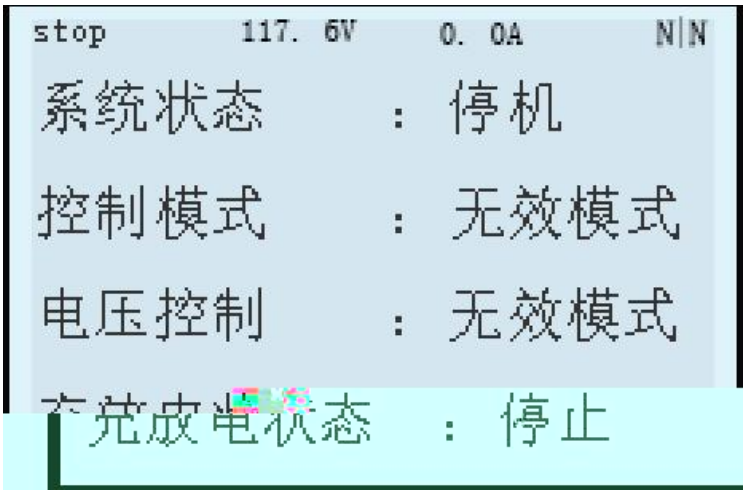
▲

ENTER

RUN STOP DCDC

LOCAL/REMOTE /

5.3



“ ” “ ” 2

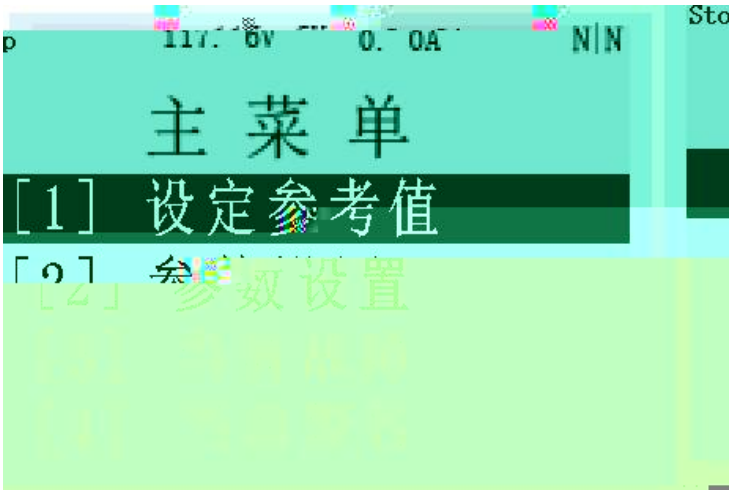
|

st

4

ENTER “ [%] ” F1/F2

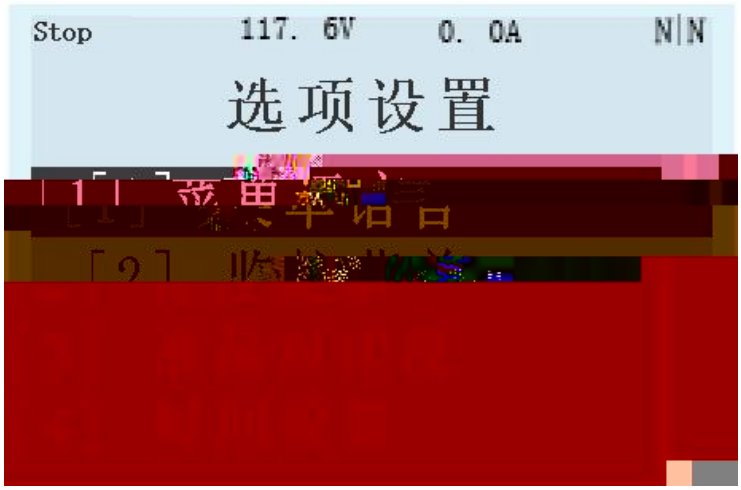
5.4



1	Reference Set	
2	Parameter Edit	/
3	Current Error	
4	Current Warning	
5	Error Event Log	
6	Function Set	

7	Option Set	
8	Security	

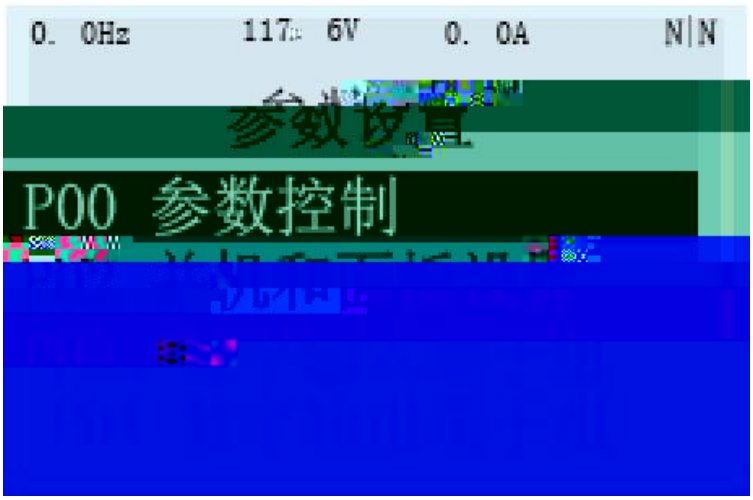
5.4.1



1	Menu Language	
2	Monitor Setting	
3	LCD Contrast	
4	Time Setting	

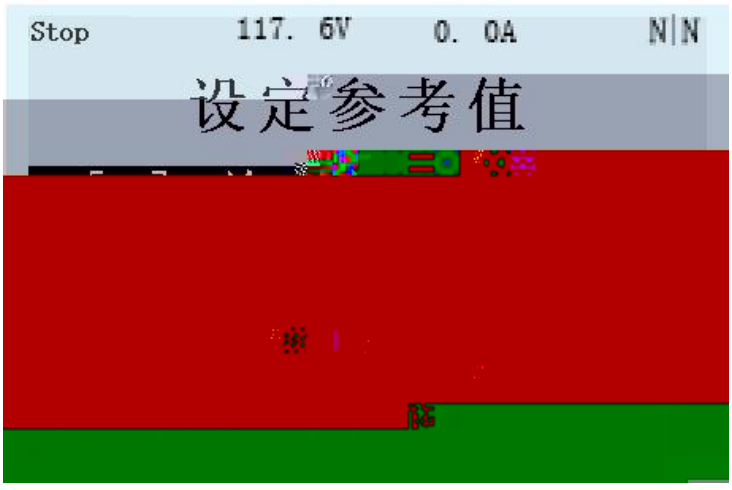
5	Version	
6	Disp Work Time	

5.4.2



Parameter Setting

5.4.3



Reference Set

Reference Set	Voltage Set	V [%]	“ ”
	Electricity Set	A [%]	“ ”
	Power Set	kW [%]	“ ”
	AO1 Set 1	[%]	1
	AO2 Set 2	[%]	2



5.4.4

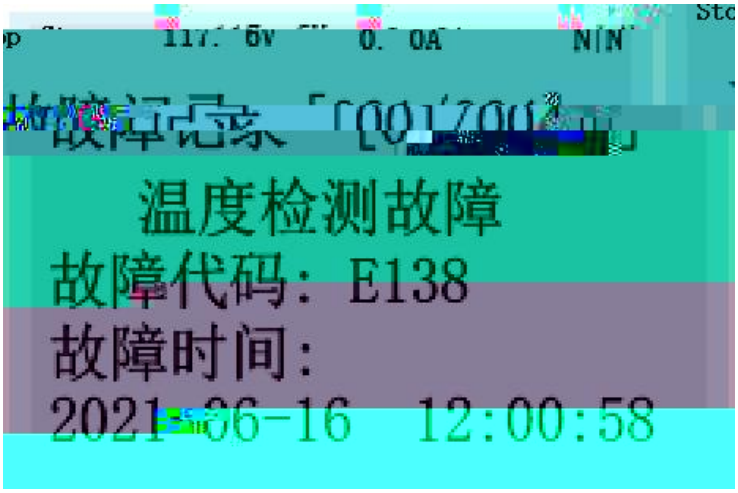
Function Setting

1	Parameter Initialization	
2	Delete Fault E	
3	System Restart	
4	Backup Para Pad	
5	Restore Para Pad DSP P	
6	Compare Para Pad	
7	Admin Password	

“ ”

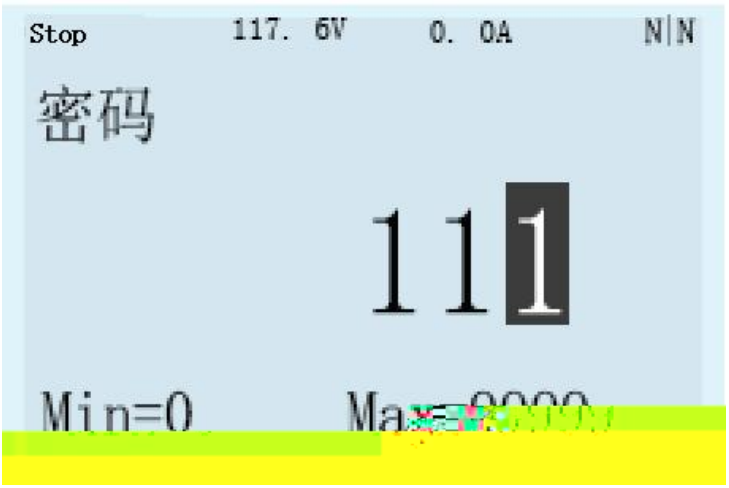
“Enter”

5.4.5



Fault Record

5.4.6



Access Permissions

6.

6.1.

DCDC P09.03 DCDC

1. DCDC
2. DCDC

6.1.1

DCDC

,

P9.03 [1] P9.04 [1] ,
DCDC ,

, ,

8 “ ”

P9.03 [1] P9.04 [2] ,
DCDC ,

, ,

8 “ ”

P9.03 1 P9.04 3
, DCDC ,

, ,

8 “ ”

6.1.2

DCDC

P9.03 2 DCDC 8.2.2

“ ” DCDC

DCDC

P09.40 DCDC
P09.40

P09.39 DCDC
P09.39

6.1.3

DCDC

P9.03 3 DCDC 8.2.3

“ ” DCDC

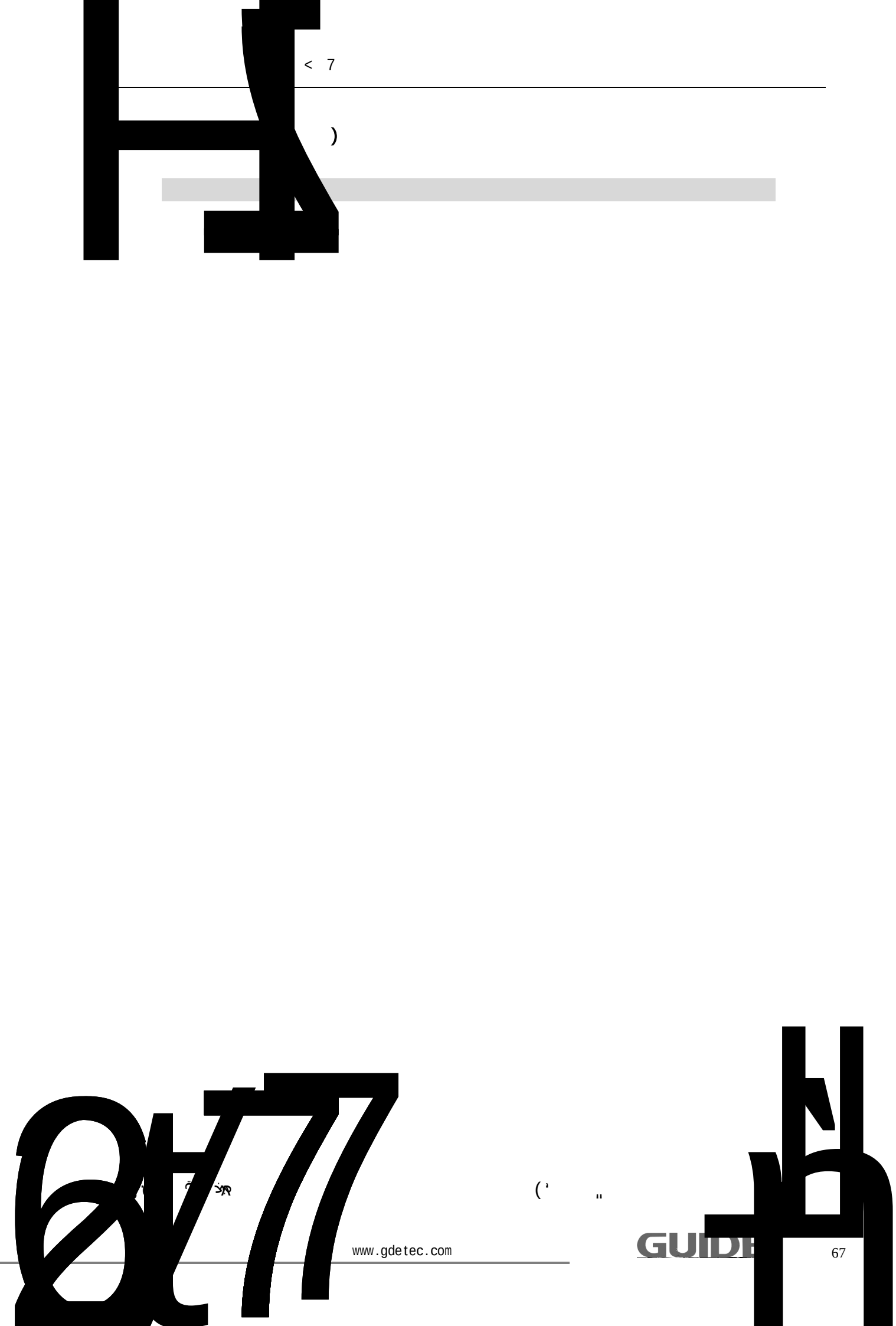
DCDC

P09.40 DCDC
P09.40

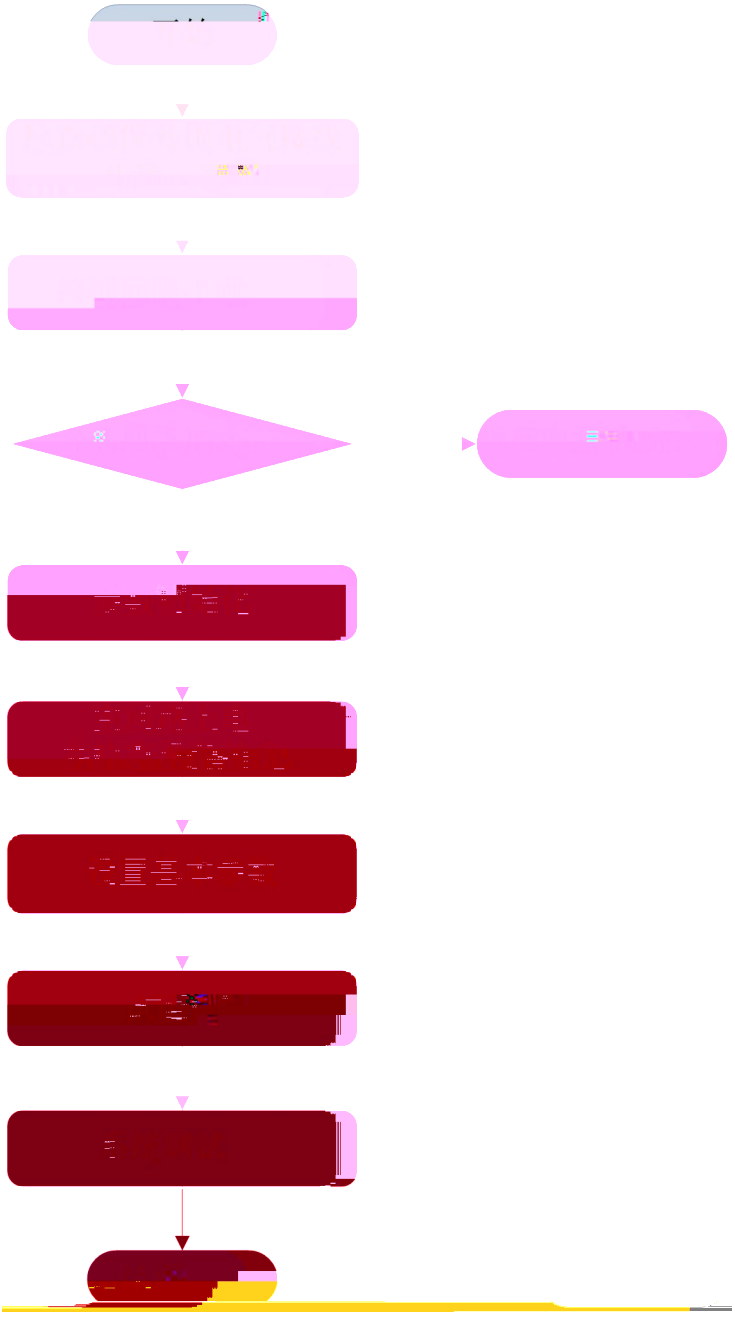
P09.39 DCDC
P09.39

6.2.

)



7.



7.1.

7.2.

“5.4.4 ”

, , “

”

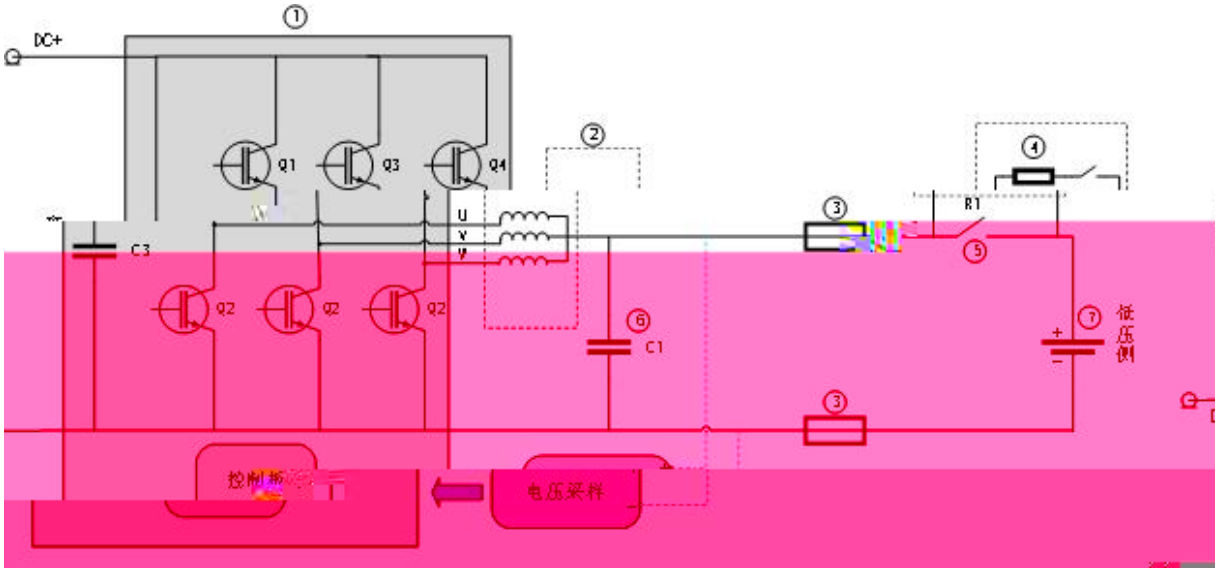
7.3.

7.3.1

P10.00

7.3.2

DCDC



7.4.

7.4.1

P09.03

P09.04

	P09.03	P09.04
	1	1
	1	2
	1	

”

7.4.2

1>

2>

3>

4>

5>

, ,

8 “ ”

P8.04 P8.04 0

“5.4.3 ”

.

P09.51

P09.51 0 P09.21 Dc-Link

P09.52

P09.52 0 P09.26 Dc-Link

P09.51

P09.51 0 , P09.21 Dc-Link

P09.52

P09.52 0 P09.26 Dc-Link

P09.26

P8.04 P8.04 0

“5.4.3 ”

0 DCDC

DCDC DCDC

P8.04 P8.04 0

“5.4.3 ”

0 DCDC

DCDC DCDC

7.4.3

1. P09.40 DCDC

P09.40 0

2. P09.3



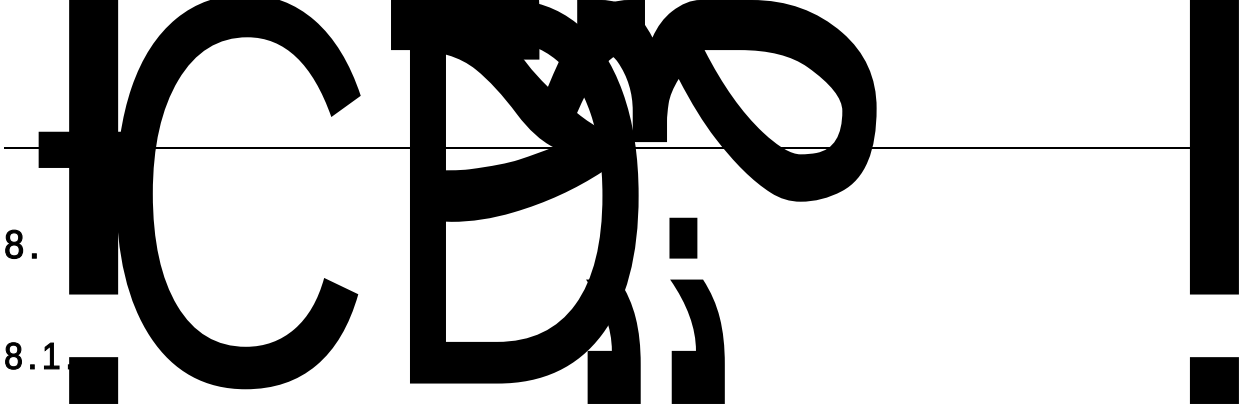
Bit0	Ready		
Bit1	RUN	Stop	-
Bit2	FAULT		
Bit3			-
Bit4	WARNING		
Bit5			-
Bit6-7	CtrlModeStatus		: 00 01 10 11
Bit8-9	VoltCtrlTypeStauts		 00 01 10 11
Bit10	LOCAL	REMOTE	
Bit11			-
Bit12			-
Bit13			-
Bit14			-
Bit15			-

0x0064	[%]	0-3000	03,06,10	0.1% 1000 100.0%
0x0065	[V]	0-10000	03,06,10	0.1V 1000 100.0V
0x0066	[%]	0-3000	03,06,10	0.1% 1000 100.0%
0x0067	[A]	0-10000	03,06,10	0.1A 1000 100.0A
0x0068	[%]	0-1000	03,06,10	0.1% 1000 100.0%
0x0069	[Kw]	0-10000	03,06,10	0.1Kw 1000 100.0Kw

Modbus

P32.01	Modbus ID	1	Modbus
P32.02		1[RS485]	Modbus 485 Rtu
P32.03		6[115200]	115200bps
P32.04		0[None_8_1_CFG]	8 1

Byte	Query		Response	
1	01	Address = 1	01	Address = 1
2	05	Force Single Coil = 05h	05	Force Single Coil = 05h
3	00	Address of ‘RUN’	00	Address of ‘RUN’
4	00	= 0 (0000h)	00	= 0 (0000h)
5	FF	FF00h → ‘RUN’	FF	FF00h → ‘RUN’
6	00		00	
7				



8.

8.1

8.1.1

DCDC

P8.00=1		RUN
P8.00=0		IO
P8.00=3	Modbus	Modbus
P8.00=2	PN	PN

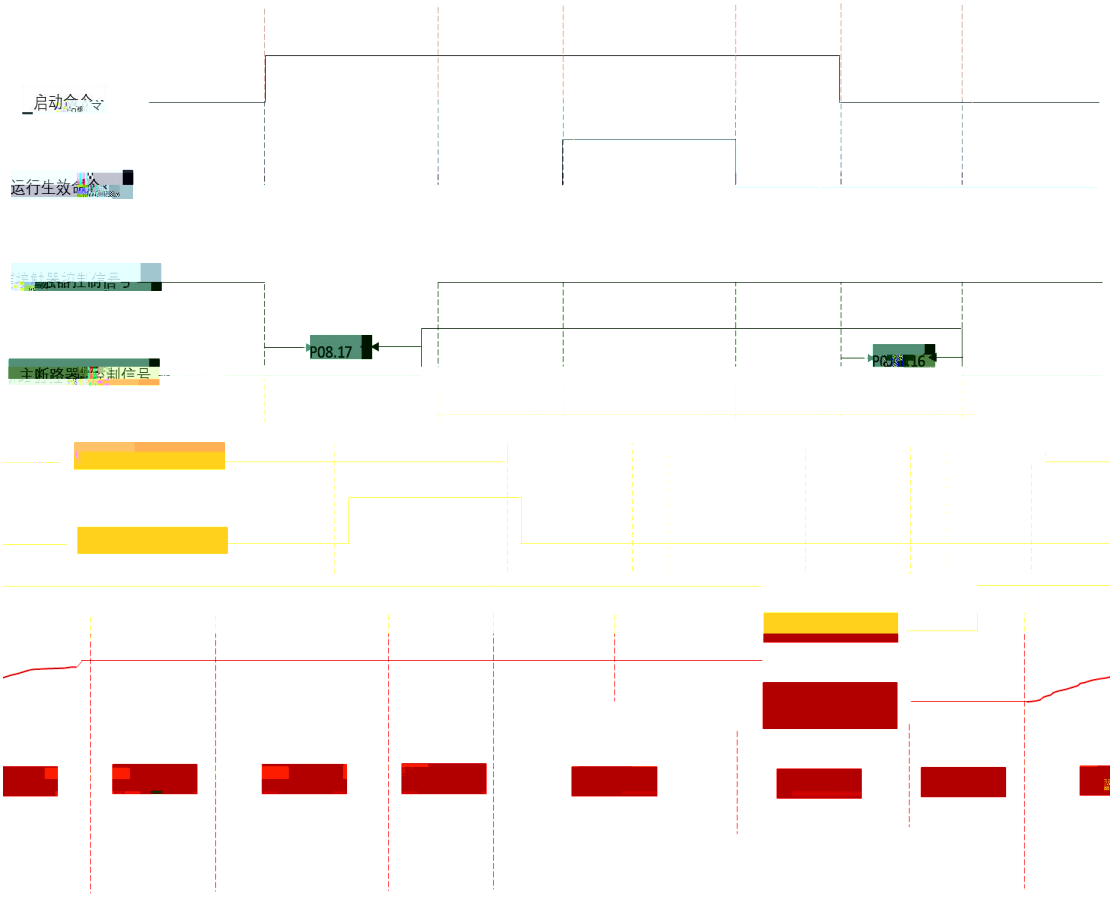
DCDC DO4 DCDC

DI4 DCDC

P08.17 DCDC

DCDC DO5

سم



1> P7.17 5 P7.18
2 /
2> P7.17 5 P7.18
2 /
3> D04 DI4
4> D05 DI5
5> c

Bit6	.A		.A
Bit7	.B		.B
Bit8	.A		.A
Bit9	.B		.B
Bit10			-
Bit11			-
Bit12			-
Bit13			-
Bit14			-
Bit15			-

8.1.3

	1	0	
Bit0			-
Bit1			-
Bit2			-
Bit3			-
Bit4-5			00' 01' 10'
Bit6-7			00' 01' 10' 11'
Bit8-9			00' 01' 10' 11'
Bit10			-
Bit11			-
Bit12			1 0
Bit13-15			000' 001' 010' 011' 100' 101' 110' 111' PB

8.1.4

bit13-15		
000(S1)		S2
001(S2)		S3
101(S3)		S4. S6
110(S4)		“ ” S5
010(S5)		S2 S6 S7
011(S6)		S2
100(S7)		
111(S8)	PB	PN S8 S2

8.2.

8.2.1 ε η

ΦΤ

P

[0]
[1]
P9.03 **[2]**
[3]

P9.01 ,

[0]

P8.04

[3]Modbus
[4]Dp

P8.09 w

P09.48		0: 1 Modbus 2 Dp
P09.49		0: 1 Modbus 2 Dp
P09.50		0: 1 Modbus 2 Dp
P09.43		( )
P09.44		( )
P09.42		( )

3 0: , 1: Modbus FJ

2 Dp ;

P09.43 P09.44 P09.42

Modbus

DP

		)´ $5 @!)^p Q 5”2e#
P09.45		
P09.46		

09e

P8.12 =1 P8.13
P8.12 =2
P8.12 =3 80%

8.3.

8.3.1

DCDC
DCDC

1.
2. P8.06=1
3.
4. P09.34 35 32 33
5. P09.48

		2 Dp
P09.57	1	0: 1 Modbus 2 Dp
P09.58	2	0: 1 Modbus 2 Dp
P09.32	1	1
P09.33	2	2
P09.34	1	1
P09.35	1	1
P09.48		0: 1 Modbus 2 Dp
P09.49		0: 1 Modbus 2 Dp
P09.43		( )
P09.44		( )

8.3.2

DCDC DCD

P8.11		[0] [1]

DCDC

DCDC

8.4.

DCDC

8.4.1 Modbus

Modbus

P32.01	MODBUS ID	Min=1 Max=255 1
P32.02	MODBUS	[0]:RS485; [1]:RS232 RS485

P32.03	MODBUS	[0] 9600 BPS [1] 14400 BPS [2] 19200 BPS [3] 38400 BPS [4] 56000 BPS [5] 57600 BPS [6] 115200 BPS
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
US		MODB

Modbus

05H

modbus 10		R/W
0	0: 1	W
1		-
2	1	W
3	1	W
4	0 1	W
5	0 1	W
6	.A	00: 01:	W
7	א q W	10: 11:	

53	2[I]	100 => 1[mA], 0 ~ 20[mA]	R

		[3]MODBUS [4]
P8.01		[0]IO **[1]** [2]Modbus [3]Dp
P8.04		[0] [1]AI1 [2]AI2 [3]Modbus **[4]Dp**
P09.03		[0] [1] **[2]** [3]

PN

P33.0	Profibus	[1]
P33.21	[W4]	1 0
P33.22	[W4]	[0] × 1
P33.23	[W5]	20 [0.1A]
P33.24	[W5]	[1] × 10
P33.53	[W4]	1: 0
P33.54	[W4]	[0] × 1
P33.55	[W5]	21: A
P33.56	[W5]	[1] × 10
P33.57	[W6]	22: [0.1V]
P33.58	[W6]	[1] × 10
P33.59	[W7]	20 @flt[0.1V]
P33.60	[W7]	[1] × 10
P33.61	[W8]	23: Kw[0.1Kw]
P33.62	[W8]	[1] × 10

W4

	1	0	
Bit0			
Bit1			-
Bit2			-
Bit3			-
Bit4			
Bit5			
Bit6	.A		00' 01' 10' 11'
Bit7	.B		

Bit8	.A		00' 01' 10' 11'
Bit9	.B		
Bit10			-
Bit11			-
Bit12			-
Bit13			-
Bit14			-
Bit15			-

W4

	1	0	
Bit0			-
Bit1			-
Bit2			-
Bit3			-
Bit4-5			00' 01' 10'
Bit6-7			00' 01' 10' 11'
Bit8-9			00' 01' 10' 11'
Bit10			-
Bit11			-
Bit12			1 0
Bit13-15			000' 001' 010' 011' 100' 101' 110' 111' PB

DCDC

DCDC DCDC

9.

9.1.

	P0
	P2
	P3
	P4
	P5
	P6
	P7
	P8
DCDC	P9 DCDC
	P10
Modbus	P32 Modbus
	P33

9.2.

9.2.1 P3

P3.0	1		0 15	0
P3.1	2		0 15	0
P3.2	3		0 15	0
P3.3	4		0 15	0
P3.4	5		0 15	0
P3.5	6		0 15	0
P3.6	7		0 15	0
P3.7	8		0 15	0

0		
1		
3	.a	1 0 00
4	.b	01 10 11
5	.a	1 0
6	.b	00 01 10 11
7		
8		
9		
10		
11		
12	.NC	
13	FUNC 12	
14	FUNC 13	
15	FUNC 14	
16	FUNC 15	

9.2.2 P4

P4.0	1	0	15	0
P4.1	2	0	15	0
P4.2				

2		ON
3		
4		
5		ON
6		ON
7		
8		
9		ON
10		ON
11		ON
12	FUNC 11	
13	FUNC 12	
14	FUNC 13	
15	FUNC 14	
16	FUNC 15	

9.2.3 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 [%]

9.2.4 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	-300.0 300.0 [%]	100.0 [%]
P6.4	AO1 [mA V]	AO1	0.0 100.0 [%]	0.0 [%]
P6.5	AO1 [mA V]	AO1	0.0 100.0 [%]	100.0 [%]
P6.6	AO1	AO1	-100.00 100.00 [%]	0.00 [%]
P6.7	AO1	AO1 (P6.0 [13])	0.0 100.0 [%]	0.0 [%]
P6.8	AO1	AO1	0.0 1000.0 [ms]	10.0 [ms]
P6.14	AO2	7-1	0 14	4
P6.15	2		0 1000	0
P6.16	AO2	AO2	-300.0 300.0 [%]	0.0 [%]
P6.17	AO2	AO2	-300.0 300.0 [%]	100.0 [%]
P6.18	AO2 [mA V]	AO2	0.0 100.0 [%]	0.0 [%]
P6.19	AO2 [mA V]	AO2	0.0 100.0 [%]	100.0 [%]
P6.20	AO2	AO2	-100.00 100.00 [%]	0.00 [%]

P6.21	A02	A02 [13]	(P6.14 A01 |)	0.0 [%]	100.0 [%]	0.0
P6.22	A02					

P7.06			50 100 [ ]	80.0 [ ]
P7.07			-30.0 30.0 [ ]	0.0 [ ]
P7.08			0 300.0 [%]	100.00 [%]
P7.09	1	1	0 300.0 [%]	150.00 [%]
P7.10	1	1	0.00 60.00 [s]	60.00 [s]
P7.11	2	2	0 300.0 [%]	200.00 [%]
P7.12	2	2	0.00 5.00 [s]	5.00 [s]
P7.13		, P7.19=1	0.10 3.00 [s]	0.30 [s]
P7.14		0 1		1
P7.15			0 3000.0 [s]	150.0 [s]
P7.16			0 300.00 [s]	0.00 [s]
P7.17	( )	( )	1.00 10.00 [s]	5.00 [s]
P7.18	( )	( )	0.50 5.00 [s]	2.00 [s]
P7.19			5.0 30.0 [s]	15.0 [s]
P7.20		[0] [1]	0 1	1
P7.21		[0] [1]	0 1	1
P7.22		[0] [1] [2]	0 2	2
P7.23		[0] [1]	0 1	1
P7.24		[0] [1]	0 1	1

P7.25	[0] [1]	0	1	1
P7.26				

P8.12		[0] [1] [2] [3] 80%	0 3	3
P8.13		P8.12=1 P8.13	0 300 [%]	90 [%]
P8.14			0.01 5.000 [s]	0.1 [s]
P8.15			0.01 5.00 [s]	0.5 [s]
P8.16			0.1 6000.0 [s]	1 [s]
P8.17			0.1 10.0 [s]	2.5 [s]
P8.18		0: 1	0 1	0

9.2.7 DC-DC P9

	m"

P09.50		0: 1 Modbus 2 Dp	0 2	0
P09.51		0: 1 Modbus 2 Dp	0 2	0
P09.52		0: 1 Modbus 2 Dp	0 2	0
P09.53		0: 1 Modbus 2 Dp	0 2	0
P09.54		0: 1 Modbus 2 Dp	0 2	0
P09.55	1	0: 1 Modbus 2 Dp	0 2	0
P09.56	2	0: 1 Modbus 2 Dp	0 2	0
P09.57	1	0: 1 Modbus 2 Dp	0 2	0
P09.58	2	0: 1 Modbus 2 Dp	0 2	0
P09.59		0: 1 Modbus 2 Dp	0 2	0
P09.60		0: 1 Modbus 2 Dp	0 2	0

9.2.8 P10

P10.00			0 480 [V]	380 [V]
P10.01			0 650.0 [A]	-
P10.02			1.0 16.0 [kHz]	3.00 [kHz]

9.2.9 Modbus P32

P32.00	Modbus	[0] [1]	0	1	1
P32.01	Modbus ID		1	247	1
P32.02		[0]RS232 [1]RS485 [0] 9600bps [1] 1440dR4r" 0 v0	0	1	1
P32.03					

P33.7			[0] [1]	0 1	0
P33.8				0.0 10.0 [s]	3.0 [s]
P33.13		[WO]	7-2	0 38	0
P33.14	[WO]				

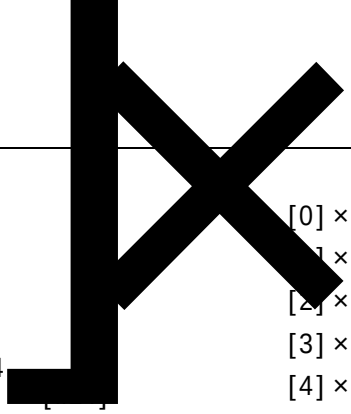
P33.26
[W6

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 E

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

P33.66	[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



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

P33.74	[ ]		0	7	0
P33.75	[W15]	7-3	0	48	0
		[0] *			
P33.76	[W15]				

Ðñ ñ % ò˜…r bP ž7• `

23	[%]
24	[A]
25	[A]
26	[A]
27	1[%]
28	2[%]
29	[%]
30	[%]
31	[V]
32	[V]
33	[V]
34	[V]
35	1[V]
36	2[V]
37	1[V]
38	2[V]

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	

18	
19	
20	
21	A
22	
23	Kw
24	A
25	B
26	C
27	A
28	B
29	C
30	
31	
32	1
33	2
34	[%]
35	[%]
36	[A]
37	[A]
38-48	

10.

10.1

WO1
SYS_NOT_RDY (Ready)

WO2
NO_DRV_ENABLE

W25	5 SLV5_CAN_ERR	5	5

10.2

[E050]	U ERR_UT not reset	IGBT IGBT
[E052]	V ERR_UT not reset	IGBT IGBT
[E054]	W ERR_UT not reset	IGBT IGBT
[E065]		DO DO DCDC DO DCDC DI
[E066]		DO DO DCDC DO DCDC DI
[E067]		DO DO DCDC DO DCDC DI

[E068]		DO DO DCDC DO DCDC DI
[E100]	OV	P7.12( )
[E105]	UV	P7.13( )
[E110]	OC	DCDC P7.4( )
[E111]	OL	P7.48 P7.49
[E113]	MIP	
[E114]	MOP	DCDC
[E121]	IGBT1 OT1	
[E137]	FAN STALL	
[E138]	TEMP_SENSING FAIL	
[E151]	U IGBT PDP [UT]	IGBT IGBT

[E153]	V IGBT PDP [VT]	IGBT IGBT
[E155]	W IGBT PDP [WT]	IGBT IGBT
[E180]	DP P/B ERROR	
[E181]	DP P/B_EM	CW0.4
[E200]	LOCAL_EM	[ ] P3
[E201]	REMOTE_EM	[ ] P3
[E202]	Modbus MODBUS EMERGENCY	Modbus
[E203]	DRIVE DISABLED	DP
[E210]	Panel Error	
[E220]	CRC MEMORY CRC ERR	
[E221]	PARAMETER ERROR	

10.3

	•	• DC24V
	•	• DO • DO
	•	• DO
	• • ON • COM	• • ON • COM
	•	•
	•	• •
	•	•
	•	•

11.



1.

2.

3.

4.



1. CMOS

2.

3.

11.1

11.2

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

11.3

DC-DC

	2	1 2
PCB		