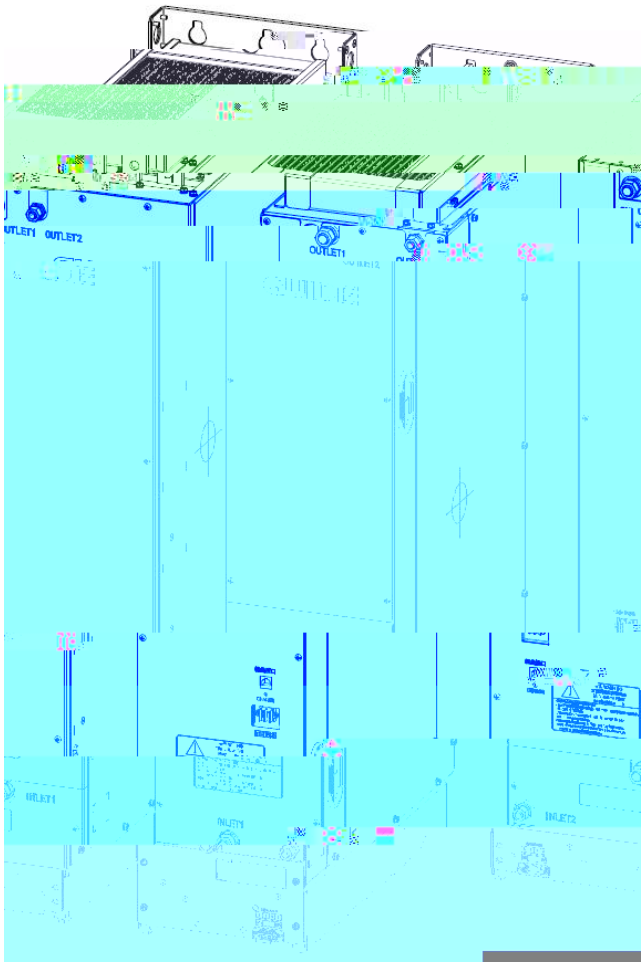
# HF680NLC

690V 160~1935kW

1.07

ë¸ Ï _Ä r

Wuhan GUIDE Technology Co.,Ltd



HF680NLC

1. ..... 1
1.1 ..... 1
1.2 ..... 5
1.3 ..... 5
2. ..... 6
2.1 ..... 6
2.2 ..... 6
2.3 ..... 7
2.4 ..... 9
2.4.1 ..... 10
2.4.2 ..... 11
2.4.3 ..... 12
2.4.4 ..... 13
3. ..... 14
3.1 ..... 14
3.2 ..... 14
3.3 ..... 18
3.4 ..... 20
3.5 ..... 21
3.6 ..... 21
4. ..... 22
4.1 ..... 22
4.2 ..... 22
4.3 ..... 26
4.4 ..... 29
4.5 ..... 32
4.6 ..... 32
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5.1 ..... 33
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6.1 LCD ..... 36
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6.1.3 LCD ..... 39
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7.1 ..... 45
7.1.1 ..... 45
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7.3.1 ..... 50
7.3.2 ..... 50
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7.3.4 ..... 51
7.3.5 ..... 52
7.3.6 ..... 53

7.3.7 ..... 54
7.3.8 ..... 54
7.3.9 ..... 55
8. ..... 56
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8.1.1 ..... 56
8.1.2 ..... 56
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8.1.4 ..... 58
8.1.5 ..... 59
8.1.6 ..... 59
8.2 ..... 60
8.2.1 P2 ..... 60
8.2.2 P3 ..... 60
8.2.3 P4 ..... 62
8.2.4 P5 ..... 64
8.2.5 P6 ..... 66
8.2.6 P7 ..... 68
8.2.7 1 P8 ..... 71
8.2.8 2 P9 ..... 74
8.2.9 3 P10 ..... 77
8.2.10 4 P11 ..... 80
8.2.11 1 P12 ..... 83
8.2.12 2 P13 ..... 85
8.2.13 3 P14 ..... 87
8.2.14 4 P15 ..... 89
8.2.15 1 V/F P16 ..... 91
8.2.16 2 V/F P17 ..... 94
8.2.17 3 V/F P18 ..... 97
8.2.18 4 V/F P19 ..... 100
8.2.19 1 P20 ..... 103
8.2.20 2 P21 ..... 108
8.2.21 3 P22 ..... 113
8.2.22 4 P23 ..... 118
8.2.23 MODBUS P32 ..... 123
8.2.24 P33 ..... 124
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9.1 ..... 134
9.2 ..... 134
9.3 ..... 135
9.4 ..... 136
9.5 ..... 136
9.6 ..... 137
9.7 ..... 140
9.8 ..... 142
9.9 V/F ..... 144
9.10 ..... 147
9.11 ..... 151

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

# 1.

## 1.1





**1**

RCD

RCM RCD

RCM

B RCD RCD

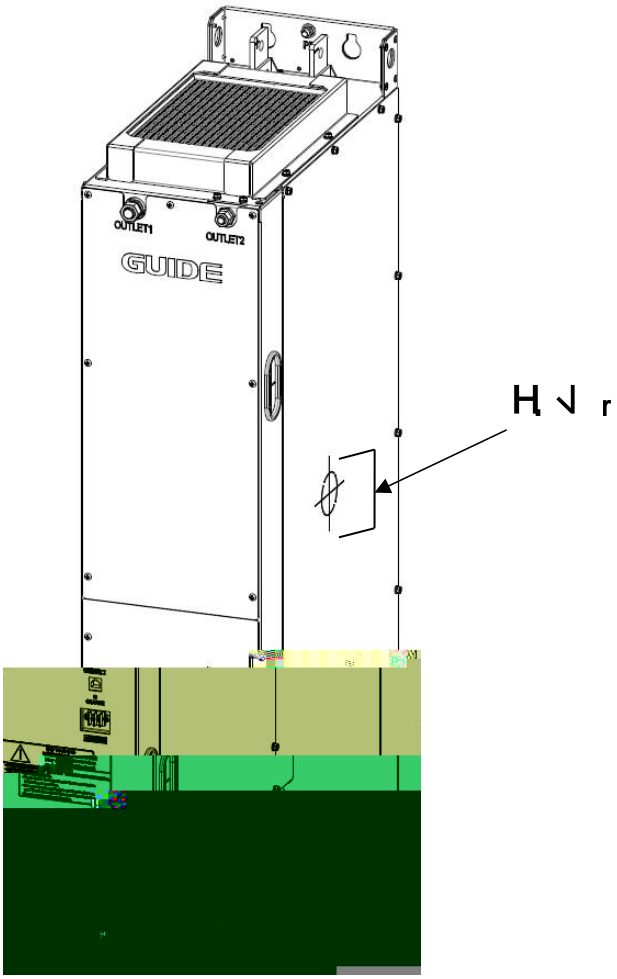
RCD RCD

**2**

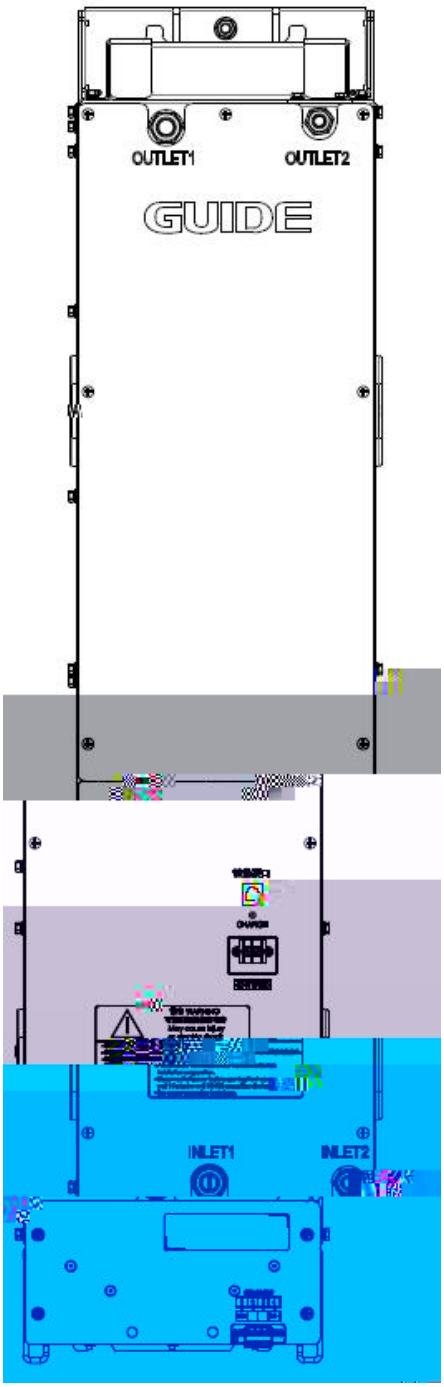
500V

5MΩ

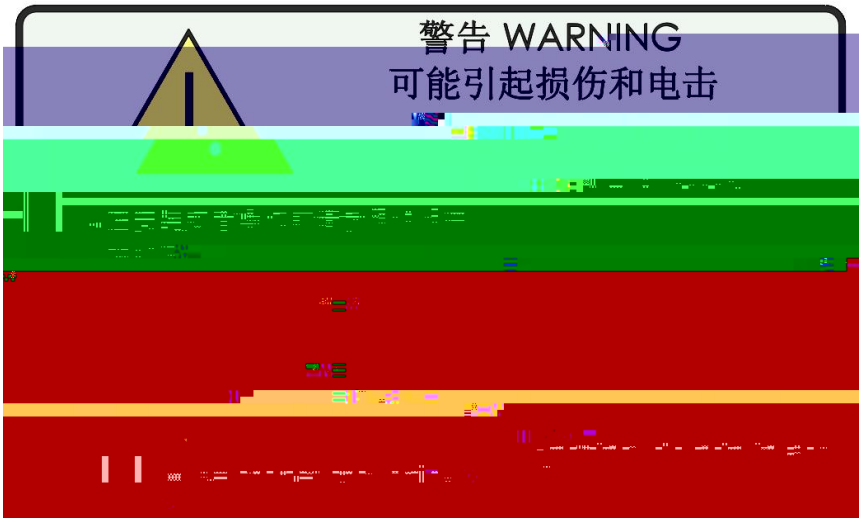
**3**




HF680NLC-560-6




HF61




**1.2**

(1)

(2)

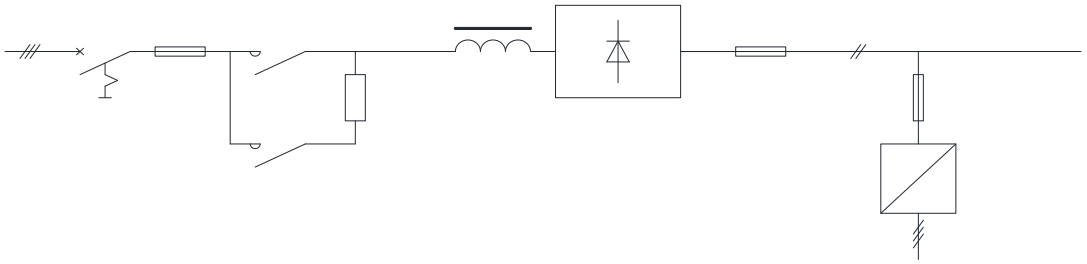
(3)

**1.3**

## 2.

### 2.1

HF680NLC



GDHF-AKZY1 LCD HF680NLC01M

GDHF-AKZY1 HF680NLC03M

2.8*8.8 2 HF680NLC01M

2 HF680NLC03M

2.8*8.8 2

2

GDHF-KL4 4 HF680NLC01M

4 GDHF-KL4 HF680NLC03M 4

1 HF680NLC01M o ز q

GDHF-FB01

## 2.4

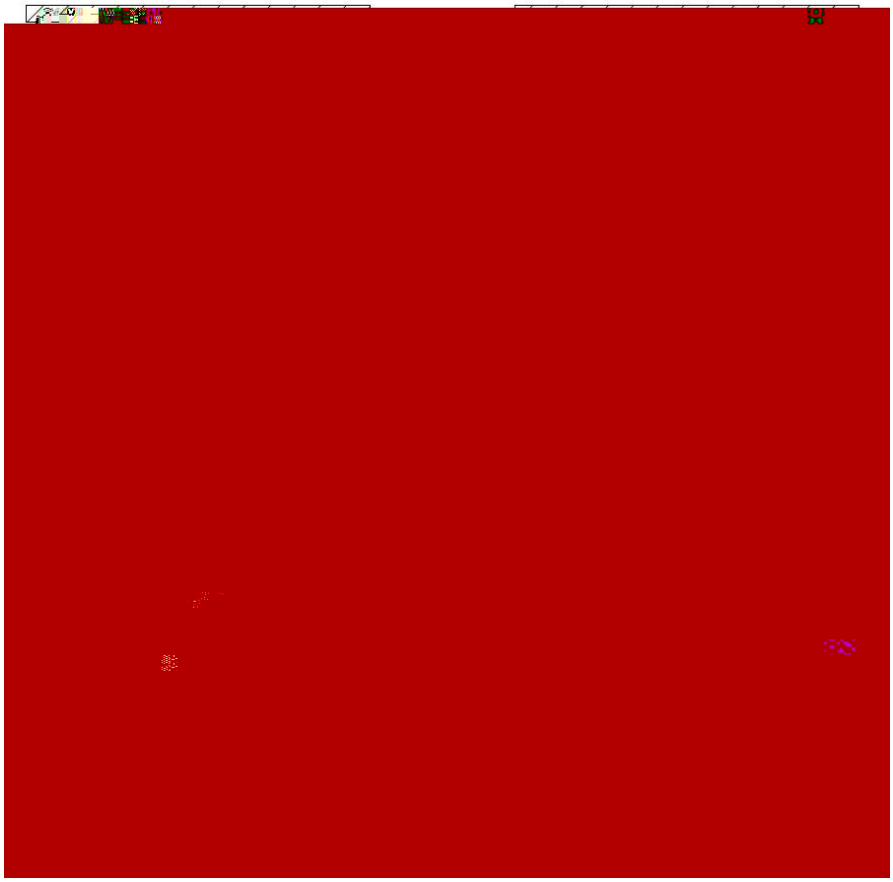
| |
|---|
|  |
| 1. / “ ”<br><br>/<br>2.<br>3.<br>- R S T<br>- U V W<br>- + -<br>4. 15<br>5. |
|  |
| 1.<br><br>2.<br><br>3. 40<br><br><br>4. 1.2 |

## 2.4.1

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | 10cm 5cm | 6 | |
| | 0 +55 ,<br>+45 55 °C,<br>(0.5% / 1 )<br>0 | -40 +70 | -40 +70 |
| | 70 106 kPa<br>0.7 1.05 | 70 106 kPa<br>0.7 1.05 | 60 106 kPa<br>0.6 1.05 |
| | 1mm(5~13.2Hz)<br>7m/s2(13.2~100Hz) | 1mm(5~13.2Hz)<br>7m/s2(13.2~100Hz) | 3.5mm(2~9Hz)<br>10m/s2(9~200Hz)<br>15m/s2(200~ 500Hz) |
| | | 100m/s$^2$ 11ms | 100m/s$^2$ 11ms |
| | | 250mm <100kg<br>100mm ≥100kg | 250mm <100kg<br>100mm ≥100kg |
| | 95%RH | | |
| | 1000 1000 100 1%<br>3000 | | |
| | 2 | | |
| | | | |

| | |
|---|---|
| | / / 6 4 |
| ( ) | 55 |
| | 10 |
| MPa | 0.6 |
| (kPa) | 80~250 |
| (mm) | : ø16 ø13; ø12 ø9 |
| | PA Teflon SMC<br>T1613W T1209W |
| | |
| | |

2.4.2



| | |
|---|---|
| | A ≥ 250㎜ |

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## 2.4.4

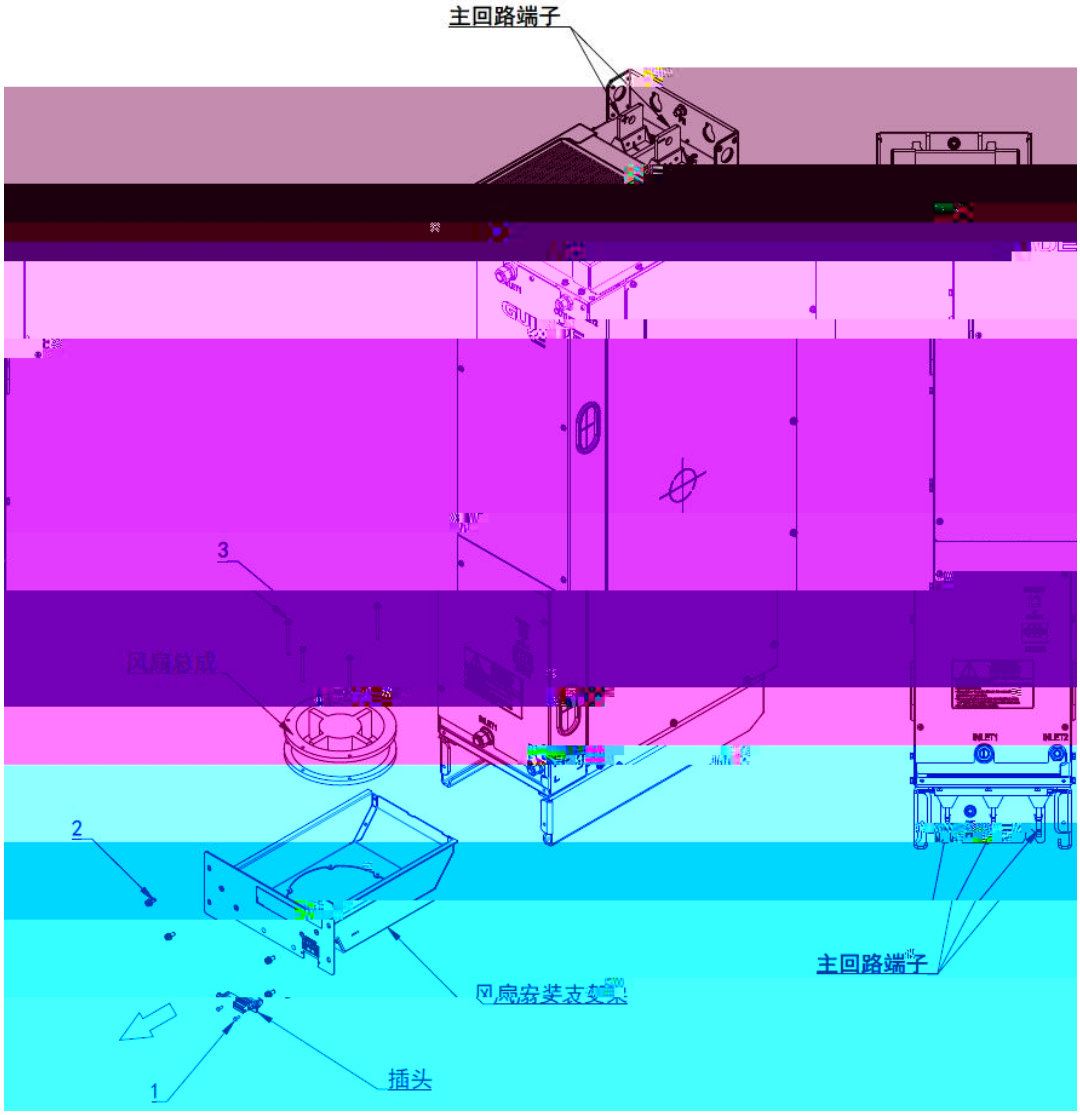
1 2 1

2 4 2

3

4 4 3

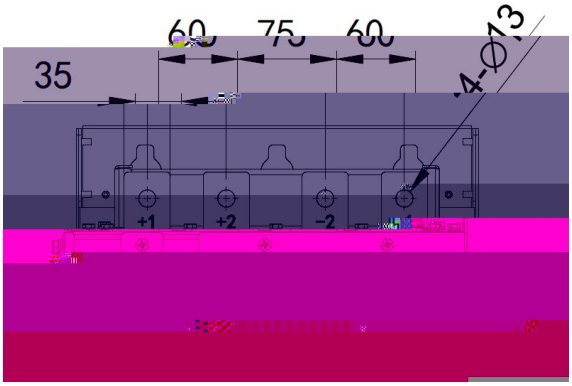
5

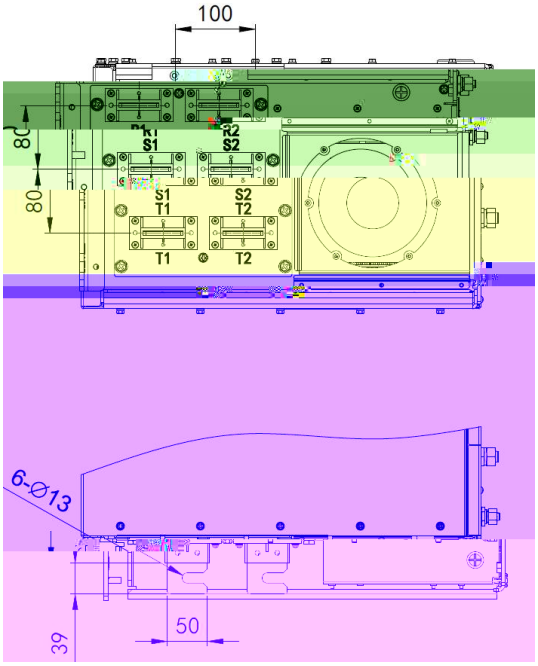



HF680NLC-560-6

1

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



2

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

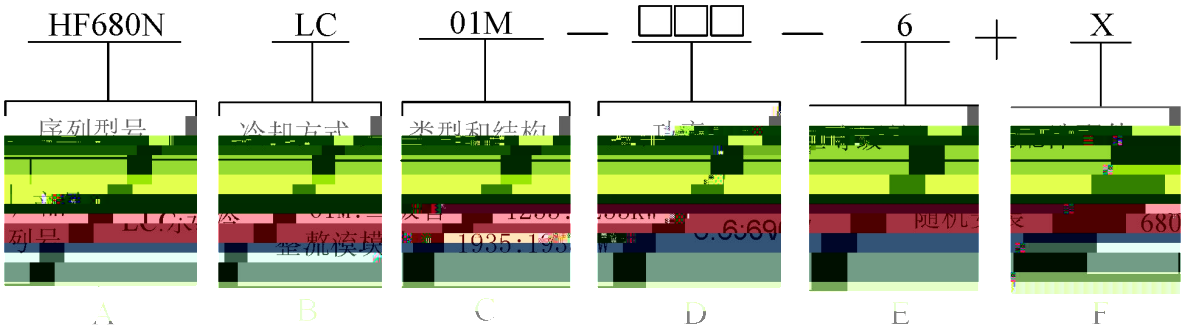
| | | | |
|---|---|---|---|
| | J2 | AO1 | |
| | J1 | AI2 | |

3

0V NPN



## 3.3




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

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

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

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

1935kW

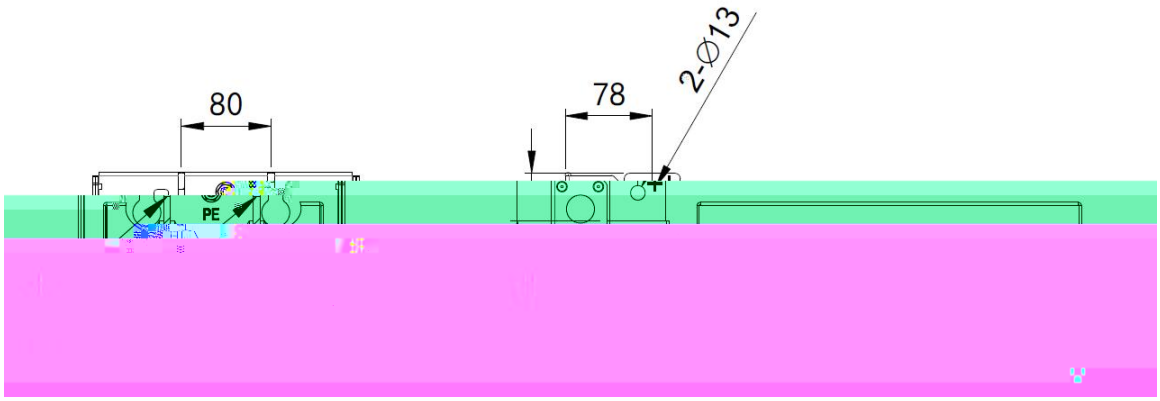
| | (kW) | (l) | (l/min) |
|---|---|---|---|
| HF680NLC01M-1233-6 | 8.22 | 2.2 | 21 |
| HF680NLC01M-1935-6 | 12.9 | 2.2 | 26 |

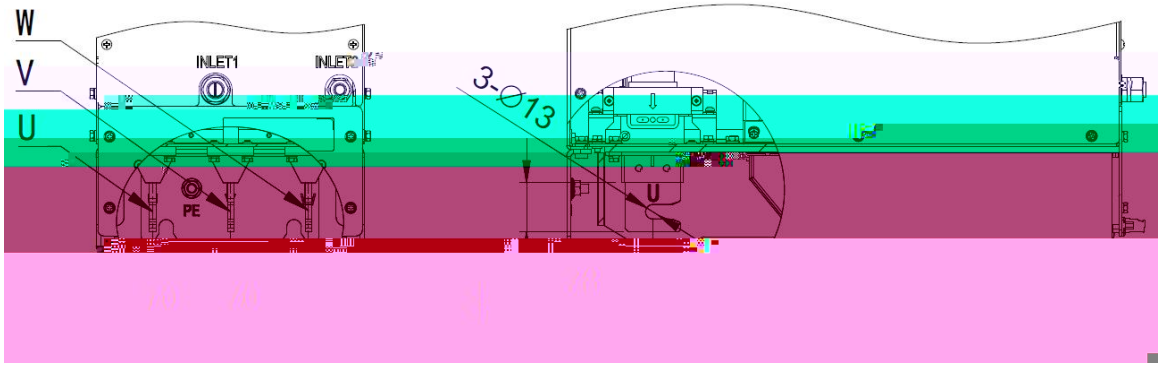
1

2 LCD LCD

1

| | |
|---|---|
| + | |
| - | |
| U V W | |
| PE | |



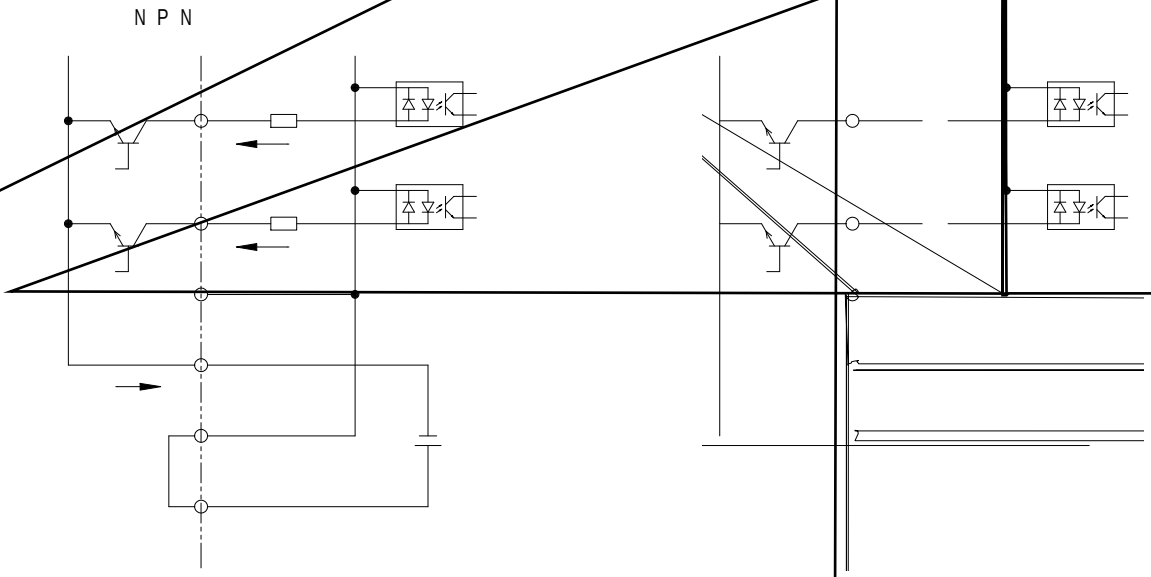
2

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

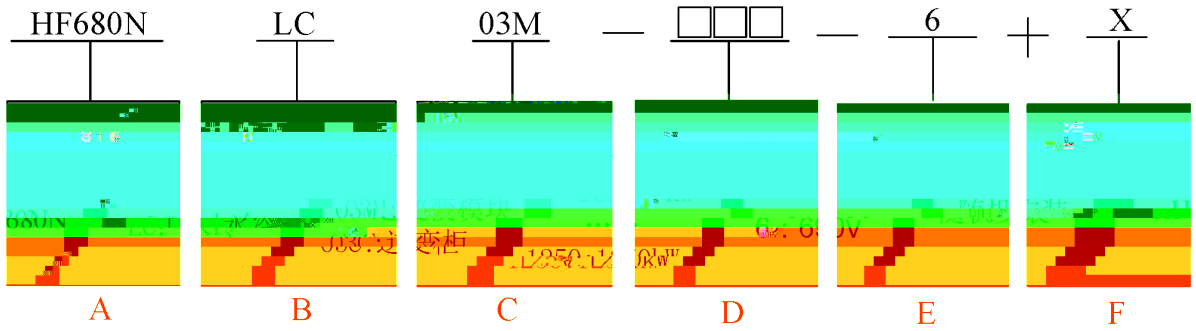
3

0V

NPN



## 4.3




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

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

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

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

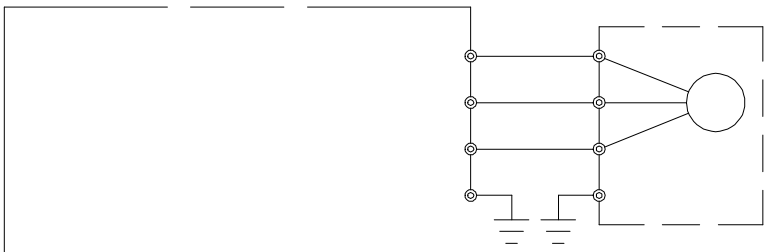
## 4.4

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

1 200%

2 50% HF680NLC03M

3 HF680NLC03M



## 4.5

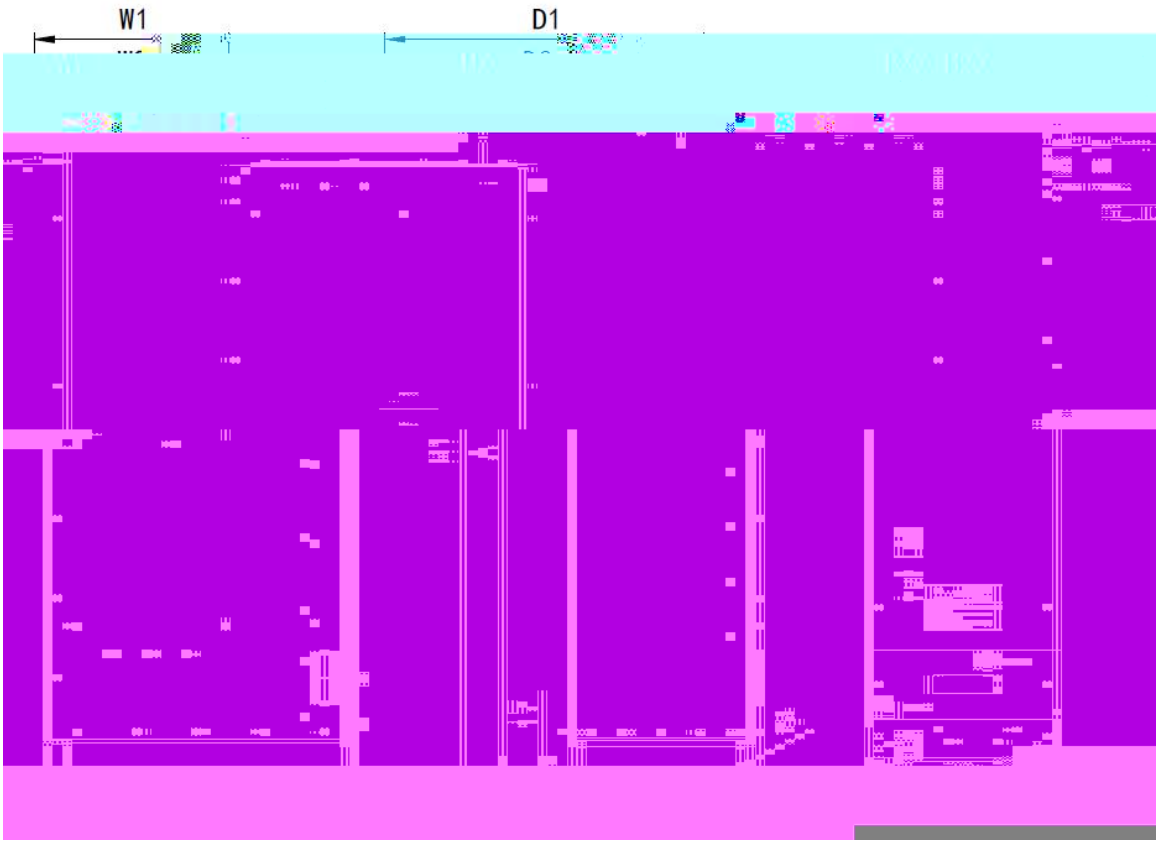
800V 1150V

24V

(VCC ϟ ϩ صم"  (

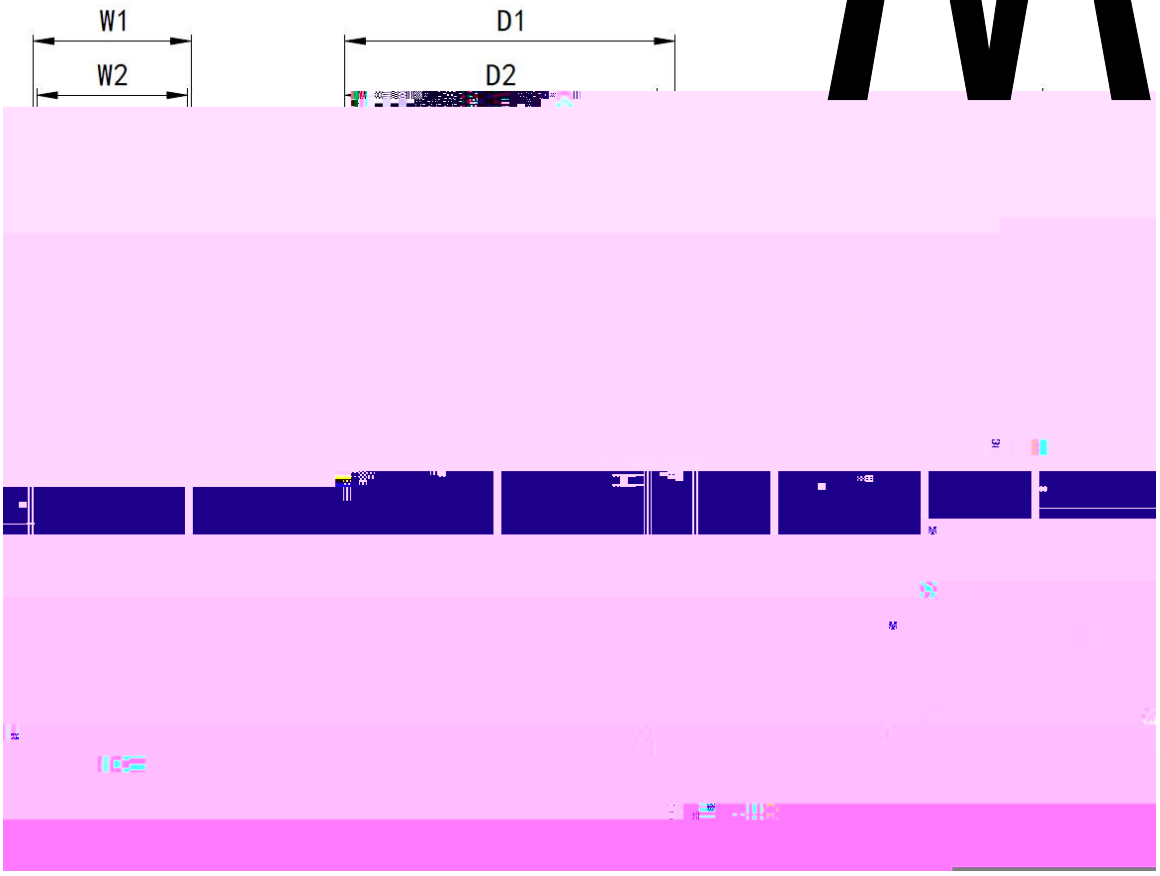
# 5.

## 5.1




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

## 5.2




mm mm

H1 8.8 kg

# 6.

## 6.1 LCD

HF680NLC F1

LOCAL/REMOTE F2 RUN STOP /RESET ENTER



### 6.1.1 LCD

▼

▲

ENTER

RUN STOP

LOCAL/REMOTE /

LCD




“ ” “ ” 2

|

| | |
|---|---|
| | |
| | “ - ” |
| | :V |
| | A |
| | N|N<br>W<br>E |

4

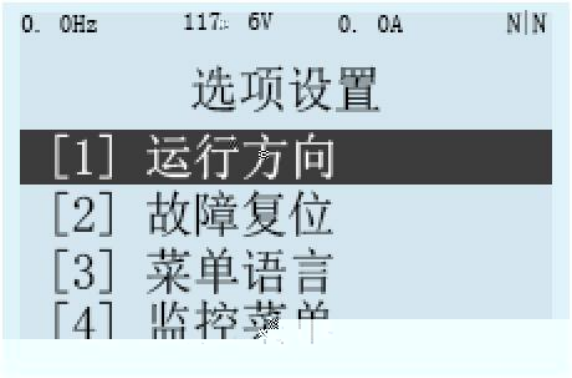
ENTER F1/F2

### 6.1.2 LCD



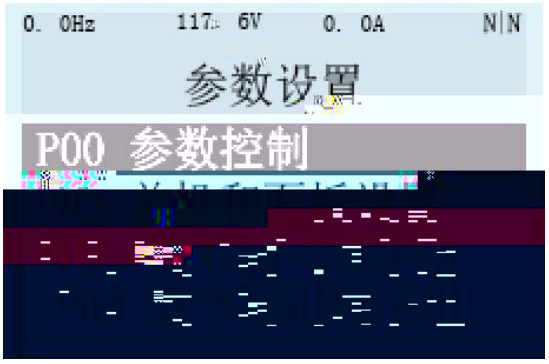

| | | |
|---|---|---|
| | | |
| | | |
| 1 | Option Set | |
| 2 | Parameter Setting | / |
| 3 | Reference Set | |
| 4 | Function Setting | |
| 5 | Fault Record | |
| 6 | Security | |

### 6.1.3 LCD




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

## 1 LCD




Parameter Setting

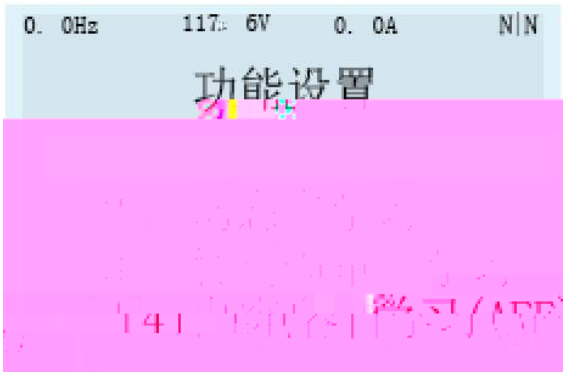
## 2 LCD




Reference Set

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

## 3 LCD




Function Setting

| | | |
|---|---|---|
| 1 | MotoTuning I | |
| 2 | MotoTuning II | |
| 3 | MotoTuning III | |
| 4 | DC-Link Tuning (AFE) | AFE |
| 5 | Shortcut Paras Setting | |
| 6 | Parameter Initialization | |
| 7 | Delete Fault Records | |
| 8 | System Restart | |
| 9 | Backup Parameter | |

| | | |
|---|---|---|
| 10 | Recover Parameter | |
| 11 | Compare Parameter | |
| 12 | Backup Para DSP<br>DSP | DSP |
| 13 | Restore Para DSP<br>DSP | DSP |

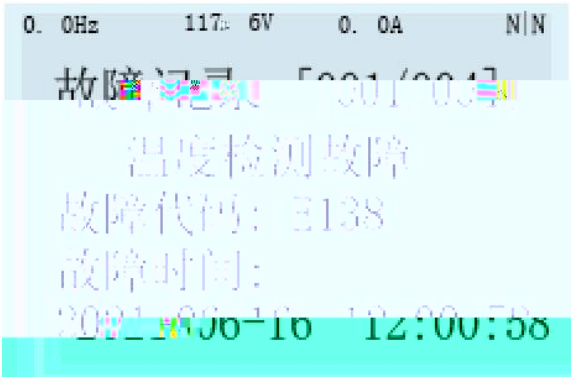
1

2 5

▼

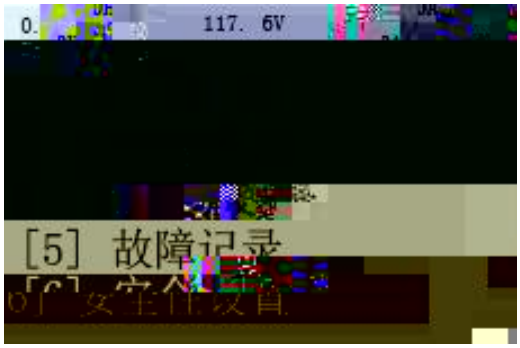
▲ “ Enter ”

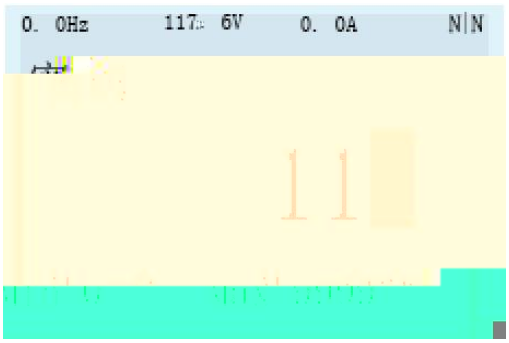
## 4 LCD




Fault Record

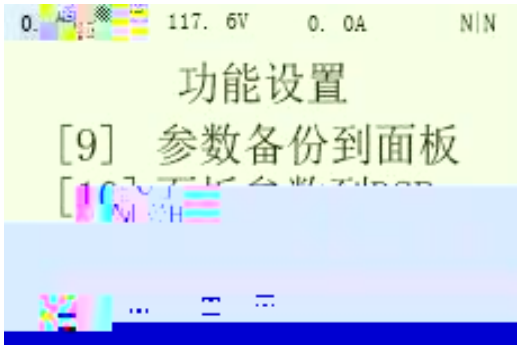
## 5 LCD

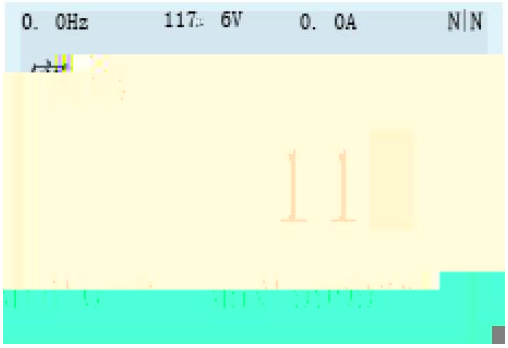



1. Access Permissions

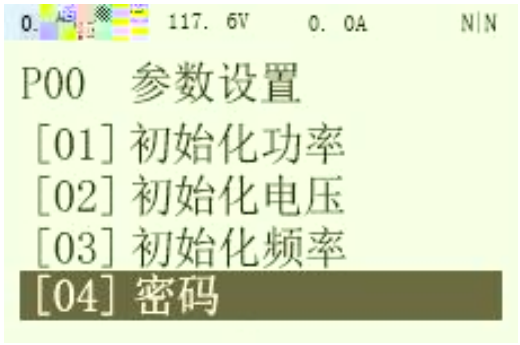
“ENTER” “ ” “ ” “[12] ”

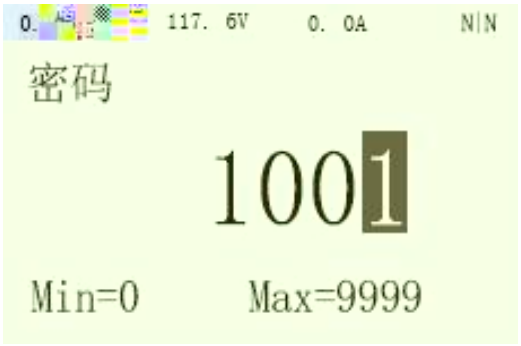



2. “ ” “ ” “ ENTER ”

“ ENTER ” “ ”

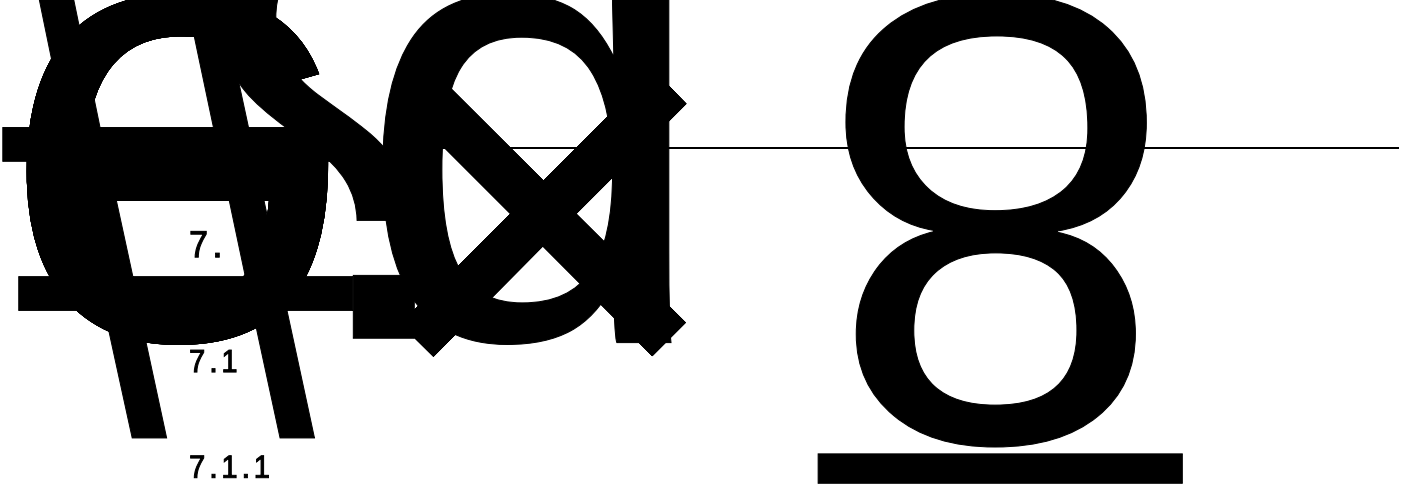



3.

“ ” ” P00 ” “ [04] ”

“ ENTER ”



7.

7.1

7.1.1

DI1 DI2 DI4

D02

A¼

D04 D0

D05

1

690V 220V

P0.1 ò

P0.1 F9

F

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. “ D04A ” “ D04C ” È “ D05A ” D05C È f

u A¼ D02 F Ď

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

690V Local/Remote Local Run

2s

“ AFE ” 49-51Hz “

AFE ”

970V A B

C Stop

+ - + -

Local/Remote Remote PLC

2

690V 220V

http://www.guide.com

P0.1

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

690V “ / ” “ ”

运行

103.23

2s 103.31 AFE

49-51Hz 103.30 AFE

103.23 970V

102.54 102.55 102.56

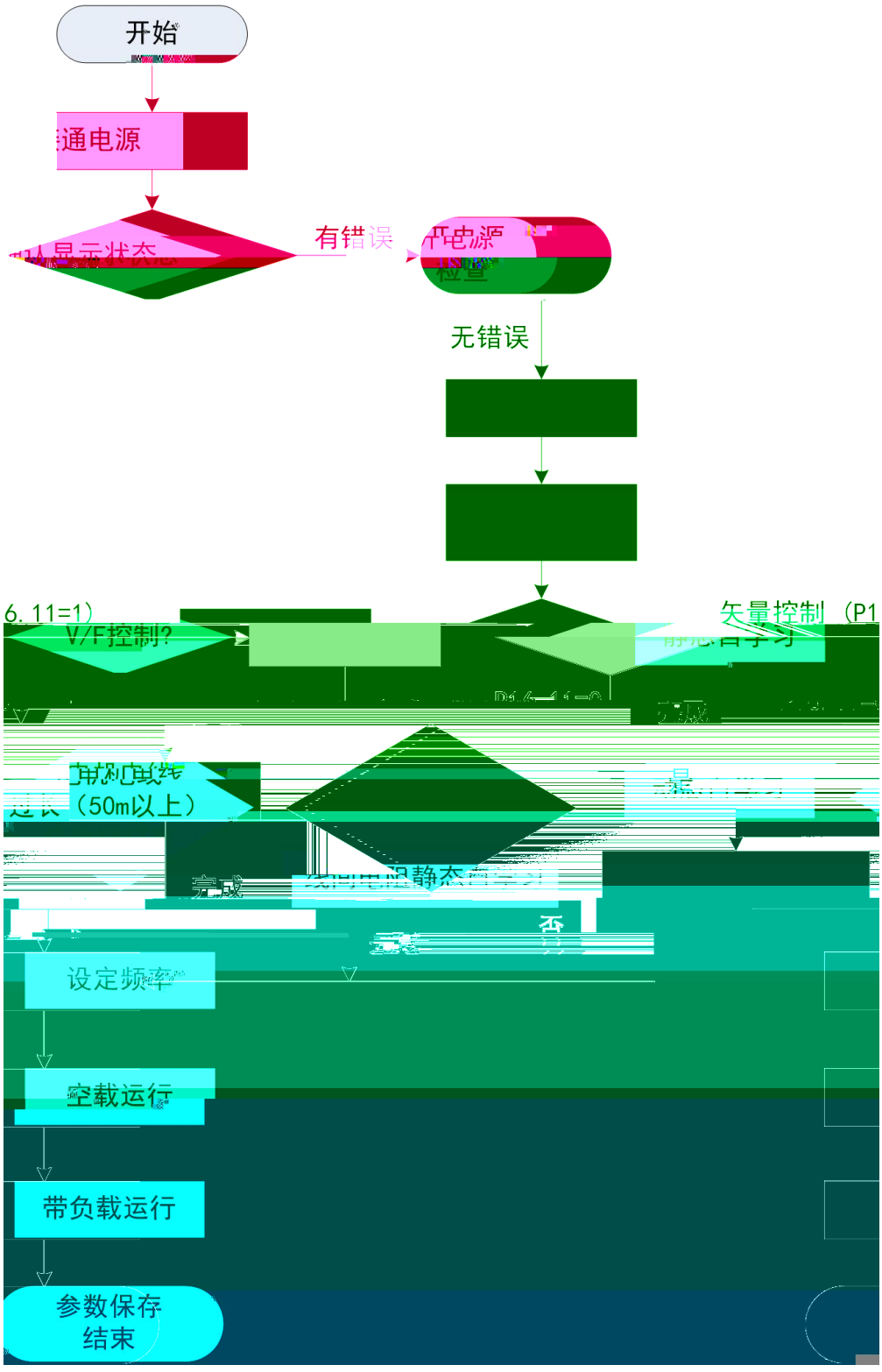
停止

+ - + -

“ / ” “ ”

PLC

7.2



/

V/F P16.11=0 V/F

P16.11=2 P16.11=1

## 7.3

### 7.3.1

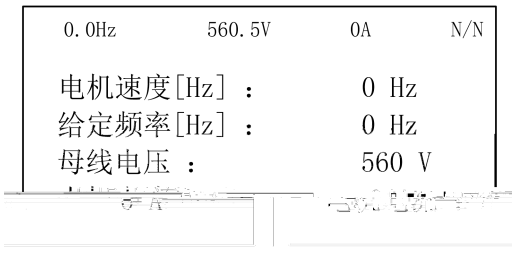
1 ±5V

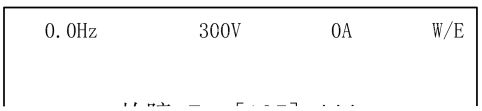
2 U,V,W

3

4 PG PG

### 7.3.2



### 7.3.3

6

### 7.3.4

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

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

### 7.3.5

1

P16.11 [1] [2]

[0] V/F

2

V/F (P20.74)

P20.74

P20.78 P20.79 P20.84

“

” “ ”

3

P20.79 P20.84

P20.85~P20.97

“

” “ ”

4

50%

P20.98 P20.98

### 7.3.6

HF680NLC

| | |
|---|---|
| | 7.5%<br>50%<br>50% |
| | 1/5 |
| | P16 |
| | V/F |

1

2

1

2

### 7.3.9

, ‘

# 8.

## 8.1

### 8.1.1

| | | | | | |
|---|---|---|---|---|---|
| P2.0 | | [0] | 0 | 0 | |
| P2.2 | | [0] [1] | 0 1 | 0 | |

### 8.1.2

0

1

5 </RST

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### 8.1.4

### 8.1.5

| | | | | | |
|---|---|---|---|---|---|
| P8.0 | | [0]<br>[1]<br>[2]DP<br>[3]MODBUS<br>[4] | 0 4 | 0 | |
| P8.6 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | IGBT |

### 8.1.6

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

## 8.2

### 8.2.1 P2

| | | | | | |
|---|---|---|---|---|---|
| P2.0 | | [0]<br>[1]<br>[2] | 0 2 | 0 | 8.1 |
| P2.1 | | [0]<br>[1]DP | 0 1 | 0 | |
| P2.2 | | [0] [1] | 0 1 | 0 | |
| P2.3 | | | 0 5 | 1 | |

### 8.2.2 P3

| | | | | | |
|---|---|---|---|---|---|
| P3.0 | 1 | | 0 32 | 1 | |
| P3.1 | 2 | | 0 32 | 2 | |
| P3.2 | 3 | | 0 32 | 5 | |
| P3.3 | 4 | | 0 32 | 6 | |
| P3.4 | 5 | | 0 32 | 7 | |
| P3.5 | 6 | | 0 32 | 8 | |
| P3.6 | 7 | | 0 32 | 0 | |
| P3.7 | 8 | | 0 32 | 0 | |
| P3.12 | | [0] [1] | 0 1 | 0 | |

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### 8.2.3 P4

| | | | | | |
|---|---|---|---|---|---|
| 16 | FUNC 16 | | | | |
| 17 | 0 | 1 | | | |
| 18 | 1 | 2 | | | |
| 19 | 2 | 3 | | | |
| 20 | 3 | 4 | | | |
| 21 | FUNC 21 | | | | |
| 22 | | | | | |
| 23 | | | | | |
| 24 31 | FUNC 24 FUNC 31 | | | | |
| 32 | | | | | |
| 33 48 | FUNC 33 FUNC 48 | | | | |
| 49 | PROFIBUS | 1 | | PROFIBUS | 1 |
| 50 | PROFIBUS | 2 | | PROFIBUS | 2 |
| 51 | PROFIBUS | 3 | | PROFIBUS | 3 |
| 52 | PROFIBUS | 4 | | PROFIBUS | 4 |
| 53 | PROFIBUS | 5 | | PROFIBUS | 5 |
| 54 56 | FUNC 54 FUNC 56 | | | | |
| 57 | 1 | | | | |
| 58 | 2 | | | | |
| 59 | 3 | | | | |
| 60 | 4 | | | | |
| 61 | 1 | | | 1 | |
| 62 | 2 | | | 2 | |

## 8.2.4 P5

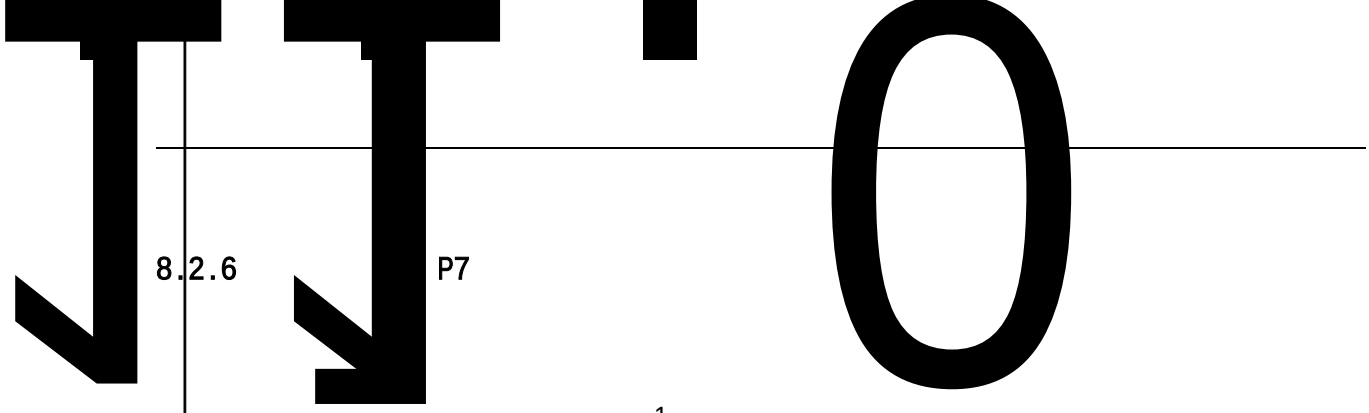
| | | | | | |
|---|---|---|---|---|---|
| P5.0 | AI1 | [0]<br>[1]0 +10V<br>[2]-10 +10V<br>[3]0 20mA<br>AI1 | 0 | 3 | 1 |
| P5.1 | AI1 | | 0.0 [ms] | 1000.0 [ms] | 25.0 [ms] |
| P5.2 | AI1 | AI1 | -10.00 [V] | 10.00 [V] | 0.000 [V] |
| P5.3 | AI1 | AI1 | -20.00 [mA] | 20.00 [mA] | 0.000 [mA] |

P5.19 AI2

| | | | | | |
|---|---|---|---|---|---|
| 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**

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8.2.6 P7

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P7.0 [ 1]

| | | | | | |
|---|---|---|---|---|---|
| P7.21 | [ 3] | 3 | 100.0 720.0 [%] | 120.0 [%] | 9.6 |
| P7.22 | [ 4] | 4 | 100.0 720.0 [%] | 120.0 [%] | 9.6 |
| P7.23 | 1 M1 | 1 | 0.00 3.00 [s] | 0.50 [s] | 9.6 |
| P7.24 | 1 M2 | 2 | 0.00 3.00 [s] | 0.50 [s] | 9.6 |
| P7.25 | 1 M3 | 3 | 0.00 3.00 [s] | 0.50 [s] | 9.6 |
| P7.26 | 1 M4 | 4 | 0.00 3.00 [s] | 0.50 [s] | 9.6 |
| P7.27 | 1 | 1 | 0.00 3.00 [s] | 2.00 [s] | |
| P7.28 | 2 | 2 | 0.00 3.00 [s] | 2.00 [s] | |
| P7.29 | 3 | 3 | 0.00 3.00 [s] | 2.00 [s] | |
| P7.30 | 4 | 4 | 0.00 3.00 [s] | 2.00 [s] | |
| P7.31 | | | 0.0 100.0 [%] | 25.0 [%] | |
| P7.32 | | | 0.00 5.00 [s] | 1 [s] | |
| P7.33 | | | 0.0 1000.0 [s] | 360.0 [s] | |
| P7.47 | | | 0.0 300.0 [%] | 100.0 [%] | 9.6 |
| P7.48 | 1 | 1 | 0.0 300.0 [%] | 150.0 [%] | 9.6 |
| P7.49 | 1 | 1 | 0.00 60.00 [s] | 60.00 [s] | 9.6 |
| P7.50 | 2 | 2 | 0.0 300.0 [%] | 200.0 [%] | 9.6 |
| P7.51 | 2 | 2 | 0.00 5.00 [s] | 5.00 [s] | 9.6 |
| P7.55 | | [0]<br>[1] | 0 1 | 0 | |
| P7.56 | | | 0.0 200.0 [%] | 120.0 [%] | |
| P7.57 | | | 0.0 12.0 [s] | 5 [s] | |

| | | | | | |
|---|---|---|---|---|---|
| P7.59 | | [0]<br>[1] | 0 1 | 1 | |
| P7.60 | | | 0.10 3.00<br>[s] | 0.30<br>[s] | |
| P7.69 | | [0]<br>[1] | 0 1 | 0 | 9.6 |
| P7.70 | | | -25 100<br>[V] | 0<br>[V] | 9.6 |
| P7.71 | 1 | [0] 5<br>[1] | 0 1 | 0 | 9.6 |
| P7.73 | | | | | |

0

0

## 8.2.7 1 P8

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

P8.1

| | | | | | |
|---|---|---|---|---|---|
| P8.17 | 2 | | 0.0 300.0 [%] | 200.0 [%] | 8.7 |
| P8.18 | 2 | P8.15 P8.17 | 0.0 300.0 [s] | 4.00 [s] | 8.7 |
| P8.19 | 3 | | 0.0 300.0 [%] | 240.0 [%] | 8.7 |
| P8.20 | 3 | P8.17 P8.19 | 0.0 300.0 [s] | 7.00 [s] | 9.7 |
| P8.21 | 4 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P8.22 | 4 | P8.19 P8.21 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P8.23 | 5 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P8.24 | 5 | P8.21 P8.23 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P8.25 | 6 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P8.26 | 6 | P8.23 P8.25 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P8.27 | 7 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P8.28 | 7 | P8.25 P8.27 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P8.29 | 8 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P8.30 | 8 | P8.27 P8.29 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P8.32 | | [0]<br>[1]PROFIBUS<br>[2]MODBUS<br>[3] | 0 3 | 0 | 9.7 |
| P8.33 | | | 0.1 10.0 | 1.0 | 9.7 |
| P8.34 | 1 | | 0.0 300.0 [%] | 100.0 [%] | 9.7 |
| P8.35 | 1 | P8.34 | 0.0 300.0 [s] | 3.00 [s] | 9.7 |

### 8.2.8 2 P9

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| P9.0 | | [0]<br>[1]<br>[2]DP<br>[3]MODBUS<br>[4] | 0 4 | 0 | |
| P9.1 | | | | | |
| P9.2 | | | | | |
| P9.3 | | [0]<br>[1] | 0 1 | 0 | 9.7 |
| P9.6 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.7 |
| P9.7 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.7 |
| P9.10 | | [0]I/O<br>[1] 1<br>[2] 2<br>[3]<br>[4]DP<br>[5]MODBUS<br>[6] | 0 6 | 0 | |
| P9.11 | | | | | |
| P9.13 | | [0]<br>[1]PROFIBUS<br>[2]MODBUS<br>[3] | 0 3 | 0 | 9.7 |
| P9.14 | | | 0.1 10.0 | 1.0 | 9.7 |
| P9.15 | 1 | | 0.0 300.0<br>[%] | 100.0<br>[%] | 9.7 |
| P9.16 | 1 | P9.15 | 0.0 300.0<br>[s] | 3.00<br>[s] | 9.7 |
| P9.17 | 2 | | 0.0 300.0<br>[%] | 200.0<br>[%] | 9.7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | P9.34 | P9.36 | 0.0 | 300.0 | 4.00 | |
| | | | | [s] | | [s] | |

8.2.9 3 P10

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

| | | | | | |
|---|---|---|---|---|---|
| P10.37 | 2 | P10.34 P10.36 | 0.0 300.0 [s] | 4.00 [s] | 9.7 |
| P10.38 | 3 | | 0.0 300.0 [%] | 240.0 [%] | 9.7 |
| P10.39 | 3 | P10.36 P10.38 | 0.0 300.0 [s] | 7.00 [s] | 9.7 |
| P10.40 | 4 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P10.41 | 4 | P10.38 P10.40 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P10.42 | 5 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P10.43 | 5 | P10.40 P10.42 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P10.44 | 6 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P10.45 | 6 | P10.42 P10.44 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P10.46 | 7 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P10.47 | 7 | P10.44 P10.46 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P10.48 | 8 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P10.49 | 8 | P10.46 P10.48 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P10.54 | | | 0.0 300.0 [%] | 0.0 [%] | |
| P10.55 | | [0]<br>[1] | 0 1 | 0 | |
| P10.56 | | | 0.00 300.00 [s] | 3.00 [s] | |
| P10.57 | | [0]<br>[1] | 0 1 | 1 | |
| P10.58 | | | 0.00 300.00 [s] | 1.50 [s] | |

## 8.2.10 4 P11

| | | | | | | |
|---|---|---|---|---|---|---|
| | | [0]<br>[1] | | | | |
| P11.0 | | [2]DP<br>[3]MODBUS<br>[4] | | 0 4 | 0 | |
| P11.1 | | | | | | |
| P11.2 | | | | | | |
| P11.3 | | [0]<br>[1] | | 0 1 | 0 | 9.7 |
| P11.6 | | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.7 |
| P11.7 | | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.7 |
| P11.10 | | [0]I/O<br>[1] 1<br>[2] 2<br>[3]<br>[4]DP<br>[5]MODBUS<br>[6] | | 0 6 | 0 | |
| P11.11 | | | | | | |
| P11.13 | | [0]<br>[1]PROFIBUS<br>[2]MODBUS<br>[3] | | 0 3 | 0 | 9.7 |
| P11.14 | | | | 0.1 10.0 | 1.0 | 9.7 |
| P11.15 | 1 | | | 0.0 300.0<br>[%] | 100.0<br>[%] | 9.7 |
| P11.16 | 1 | | P11.15 | 0.0 300.0<br>[s] | 3/ | |

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

| | | | | | |
|---|---|---|---|---|---|
| P11.37 | 2 | P11.34 P11.36 | 0.0 300.0 [s] | 4.00 [s] | 9.7 |
| P11.38 | 3 | | 0.0 300.0 [%] | 240.0 [%] | 9.7 |
| P11.39 | 3 | P11.36 P11.38 | 0.0 300.0 [s] | 7.00 [s] | 9.7 |
| P11.40 | 4 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P11.41 | 4 | P11.38 P11.40 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P11.42 | 5 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P11.43 | 5 | P11.40 P11.42 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P11.44 | 6 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P11.45 | 6 | P11.42 P11.44 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P11.46 | 7 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P11.47 | 7 | P11.44 P11.46 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P11.48 | 8 | | 0.0 300.0 [%] | 300.0 [%] | 9.7 |
| P11.49 | 8 | P11.46 P11.48 | 0.0 300.0 [s] | 10.00 [s] | 9.7 |
| P11.54 | | | 0.0 300.0 [%] | 0.0 [%] | |
| P11.55 | | [0]<br>[1] | 0 1 | 0 | |
| P11.56 | | | 0.00 300.00 [s] | 3.00 [s] | |
| P11.57 | | [0]<br>[1] | 0 1 | 1 | |
| P11.58 | | | 0.00 300.00 [s] | 1.50 [s] | |

### 8.2.11 1 P12

| | | | | | | |
|---|---|---|---|---|---|---|
| P12.0 | | [0]<br>[1] | 0 | 1 | 1 | 9.8 |
| P12.1 | | [0][%]<br>[1][Hz]<br>[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 | | | | | |

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

## 8.2.12 2 P13

| | | | | | |
|---|---|---|---|---|---|
| P13.0 | | [0]<br>[1] | 0 1 | 1 | 9.8 |
| P13.1 | | [0][%]<br>[1][Hz]<br>[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<br>[%] | 2.0<br>[%] | 9.8 |
| P13.23 | | | 0.0 20.0<br>[%] | 0.0<br>[%] | 9.8 |
| P13.24 | | | 0.0 200.0<br>[%] | 30.0<br>[%] | 9.8 |
| P13.25 | | | 0.0 200.0<br>[%] | 20.0<br>[%] | 9.8 |
| P13.26 | 0 | | 0.00 2.00<br>[s] | 0.00<br>[s] | 9.8 |

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

## 8.2.13 3 P14

| | | | | | | |
|---|---|---|---|---|---|---|
| P14.0 | | [0]<br>[1] | 0 | 1 | 1 | 9.8 |
| P14.1 | | [0][%]<br>[1][Hz]<br>[2][rpm] | 0 | 2 | 1 | |
| P14.2 | 1 | | 0.0 | 3000.0 | 10.0 | |
| P14.3 | 2 | | 0.0 | 3000.0 | 20.0 | |
| P14.4 | 3 | | | | | |

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

8.2.14 4 P15

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

8.2.15 1 V/F P16

| | | | | | |
|---|---|---|---|---|---|
| P16.19 | [0]<br>[1] | 0 1 | 0 | | |
| P16.22 | | 0.00 100.00<br>[s] | 0.00<br>[s] | | 9.9 |
| P16.23 | | | | | |

| | | | | |
|---|---|---|---|---|
| P16.47 | @ | | 0 300 | 0 |
| P16.48 | | [0]<br>[1]PID 1<br>[2]PID 2<br>[3] | 0 3 | 0 |
| P16.49 | @ | | 0 300 | 0 |
| P16.50 | | | 0.00 300.00<br>[s] | |

### 8.2.16 2 V/F P17

| | | | | | |
|---|---|---|---|---|---|
| P17.0 | | | 560 760<br>[V] | 690<br>[V] | |
| P17.2 | | | 0.0 3000.0<br>[kW] | <br>[kW] | |
| P17.3 | | | 0 700<br>[V] | 690<br>[V] | |
| P17.4 | | | 0.0 3000.0<br>[A] | <br>[A] | |
| P17.5 | | | 0.0 300.0<br>[Hz] | 50.0<br>[Hz] | |
| P17.6 | | | 0 6000<br>[rpm] | 1465<br>[rpm] | |
| P17.7 | | | 2 12<br>[pole] | 4<br>[pole] | 9.9 |
| P17.9 | | | 0 7200<br>[rpm] | 1500<br>[rpm] | 9.9 |
| P17.11 | | [0]V/F<br>[1]<br>[2]<br>[3]<br>[4] | 0 4 | 0 | |
| P17.12 | | | 1.00 10.00<br>[kHz] | 3.00<br>[kHz] | 9.9 |
| P17.14 | V/F | [0] V/F<br>[1] V/F<br>[2] | 0 3 | 0 | 9.9 |
| P17.15 | | [0]<br>[1] | 0 1 | 0 | 9.9 |
| P17.16 | | | 2 500<br>[ms] | 500<br>[ms] | |
| P17.17 | V/F | [0]<br>[1] | 0 1 | 0 | |
| P17.18 | | | 10 1000<br>[ms] | 200<br>[ms] | |
| P17.19 | | [0]<br>[1] | 0 1 | 0 | |

| | | | | |
|---|---|---|---|---|
| P17.22 | | 0.00 100.00 [s] | 0.00 [s] | 9.9 |
| P17.23 | V/F | 0.00 300.00 [Hz] | 0.00 [Hz] | |
| P17.24 | V/F | 0.00 300.00 [Hz] | 50.00 [Hz] | |
| P17.25 | | 0.0 120.0 [%] | 100.0 [%] | |
| P17.26 V/F | V/F | 0.00 10.00 [%] | 0.75 [%] | 9.9 |
| P17.27 | | 0.0 200.0 [%] | 100.0 [%] | 9.9 |
| P17.30 | | 0.0 100.0 [%] | 0.0 [%] | 9.9 |

P17.33 V/F

| | | | | | |
|---|---|---|---|---|---|
| P17.48 | | [0]<br>[1]PID 1<br>[2]PID 2<br>[3] | 0 3 | 0 | |
| P17.49 | @ | | 0 300 | 0 | |
| P17.50 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.9 |
| P17.51 | | | 0.0 150.0<br>[%] | 70.0<br>[%] | 9.9 |
| P17.52 | | | 0.00 5.00<br>[Hz] | 0.00<br>[Hz] | 9.9 |
| P17.54 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.9 |
| P17.55 | | | 0.0 150.0<br>[%] | 75.0<br>[%] | 9.9 |
| P17.56 | | | 0.00 5.00<br>[Hz] | 0.00<br>[Hz] | 9.9 |
| P17.59 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.60 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.61 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.62 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.64 | V/F | V/F | 0.0 1000.0<br>[%] | 100.0<br>[%] | 9.9 |
| P17.66 | | V/F | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.67 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.68 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.69 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P17.70 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |

| | | | | | |
|---|---|---|---|---|---|
| P18.22 | | | 0.00 100.00 [s] | 0.00 [s] | 8.9 |
| P18.23 | | V/F | 0.00 300.00 [Hz] | 0.00 [Hz] | |
| P18.24 | | V/F | 0.00 00.00 [Hz] | [Hz] | |
| P18.25 | | | 0.0 20.0 [%] | [%] | |
| P18.26 | V/F | V/F | 0.00 0.00 [%] | 0.75 [%] | 9.9 |
| P18.27 | | | 0.0 00.0 [%] | 100.0 [%] | 9.9 |
| P18.30 | | | 0.0 00.0 [%] | 0.0 [%] | 9.9 |
| P18.33 | V/F | V/F | | 2 | 9.9 |
| P18.34 | V/F 1 | | 0.0 00.0 [Hz] | 5.0 [Hz] | |
| P18.35 | V/F 1 | | 0.0 25.0 [%] | 11.5 [%] | |
| P18.36 | V/F 2 | | 0.0 00.0 [Hz] | 50.0 [Hz] | |
| P18.37 | V/F 2 | | 0.0 25.0 [%] | 100.0 [%] | |
| P18.38 | V/F 3 | | 0.0 00.0 [Hz] | 50.0 [Hz] | |
| P18.39 | V/F 3 | | 0.0 25.0 [%] | 100.0 [%] | |
| P18.40 | V/F 4 | | 0.0 00.0 [Hz] | 50.0 [Hz] | |
| P18.41 | V/F 4 | | 0.0 25.0 [%] | 100.0 [%] | |
| P18.42 | V/F 5 | | 0.0 00.0 [Hz] | 50.0 [Hz] | |
| P18.43 | V/F 5 | | 0.0 25.0 [%] | 100.0 [%] | |
| P18.44 | V/F 6 | | 0.0 00.0 [Hz] | 50.0 [Hz] | |
| P18.45 | V/F 6 | | 0.0 25.0 [%] | 100.0 [%] | |
| P18.46 | V/F @ | | 0 00 | 0 | |
| P18.47 | @ | | 0 00 | 0 | |

## 8.2.18 4 V/F P19

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

| | | | | | |
|---|---|---|---|---|---|
| P19.48 | | [0]<br>[1]PID 1<br>[2]PID 2<br>[3] | 0 3 | 0 | |
| P19.49 | @ | | 0 300 | 0 | |
| P19.50 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.9 |
| P19.51 | | | 0.0 150.0<br>[%] | 70.0<br>[%] | 9.9 |
| P19.52 | | | 0.00 5.00<br>[Hz] | 0.00<br>[Hz] | 9.9 |
| P19.54 | | | 0.00 300.00<br>[s] | 0.00<br>[s] | 9.9 |
| P19.55 | | | 0.0 150.0<br>[%] | 75.0<br>[%] | 9.9 |
| P19.56 | | | 0.00 5.00<br>[Hz] | 0.00<br>[Hz] | 9.9 |
| P19.59 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.60 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.61 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.62 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.64 | V/F | V/F | 0.0 1000.0<br>[%] | 100.0<br>[%] | 9.9 |
| P19.66 | | V/F | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.67 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.68 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.69 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |
| P19.70 | | | 0.0 1000.0<br>[%] | 100.0<br>[%] | |

### 8.2.19 1 P20

P20.

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

| | | | | | |
|---|---|---|---|---|---|
| P20.30 | | [0] P20.31<br>P20.32<br>[1] 1<br>[2] 2<br>[3] | 0 3 | 0 | |
| P20.31 | | | 0.0 100.0<br>[%] | 5.0<br>[%] | |
| P20.32 | | | 0.0 100.0<br>[%] | 5.0<br>[%] | |
| P20.34 | | [0]<br>[1] | 0 1 | 0 | 9.10 |
| P20.35 | | | 0.0 100.0<br>[s] | 0.0<br>[s] | |
| P20.36 | | | 50.0 150.0<br>[%] | 110.0<br>[%] | |
| P20.37 | | | 0.0 150.0<br>[%] | 100.0<br>[%] | 9.10 |
| P20.38 | | | 0.0 100.0<br>[%] | 25.0<br>[%] | 9.10 |
| P20.39 | | | 0.0 120.0<br>[%] | 100.0<br>[%] | 9.10 |
| P20.40 | | | 0.0 150.0<br>[%] | 100.0<br>[%] | 9.10 |
| P20.41 | | | 0.0 150.0<br>[%] | 135.0<br>[%] | |
| P20.42 | | [0]<br>[1] | 0 1 | 1 | |
| P20.43 | | | 25 1000<br>[ms] | 75<br>[ms] | |
| P20.44 | | | 25 1000<br>[ms] | 250<br>[ms] | |
| P20.45 | | | 0.0 100.0<br>[%] | 22.0<br>[%] | |
| P20.46 | | | 0.0 100.0<br>[%] | 18.0<br>[%] | |
| P20.47 | | | 0.0 200.0<br>[%] | 92.0<br>[%] | |
| P20.48 | | | 0.0 200.0<br>[%] | 87.0<br>[%] | |

| | | | | | |
|---|---|---|---|---|---|
| P20.49 | | 0.0 | 150.0 [%] | 100.0 [%] | |
| P20.51 | | 0.0 | 1000.0 [%] | 100.0 [%] | |
| P20.52 | | 0.0 | 1000.0 [%] | 100.0 [%] | |
| P20.53 | Kp | 0.0 | 1000.0 [%] | 100.0 [%] | |
| P20.54 | Ki | 0.0 | 1000.0 [%] | 100.0 [%] | |
| P20.55 | | 0.0 | 1000.0 [%] | 100.0 [%] | 9.10 |
| P20.56 | | 0.0 | 1000.0 [%] | 100.0 [%] | 9.10 |
| P20.57 | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| P20.74 | | | | | 0.00 [mOhm] | 650.00 [mOhm] |
| P20.75 | | | | | 0.70 | 1.00 |
| P20.76 | | 1 | | 1 | 90.0 [%] | 110.0 [%] |
| P20.77 | | 2 | | 2 | 90.0 [%] | 110.0 [%] |
| P20.78 | | | | | 0.00 [mOhm] | 650.00 [mOhm] |
| P20.79 | | | | | 0.00 [mH] | 65.50 [mH] |
| P20.80 | 1 | | 1 | | 0.800 | 1.350 |
| P20.81 | 2 | | 2 | | 0.800 | 1.350 |
| P20.82 | 3 | | 3 | | 0.800 | 1.350 |
| P20.83 | 4 | | 4 | | 0.800 | 1.350 |
| P20.84 | | | | | 0.00 [mH] | 655.00 [mH] |
| P20.85 | | 85% | 85% | | 40.0 [%] | 150.0 [%] |
| P20.86 | | 87.5% | 87.5% | | 40.0 [%] | 150.0 [%] |
| P20.87 | | 90% | 90% | | 40.0 [%] | 150.0 [%] |
| P20.88 | | 92.5% | 92.5% | | 40.0 [%] | 150.0 [%] |
| P20.89 | | 95% | 95% | | 40.0 [%] | 150.0 [%] |
| P20.90 | 5% | 102. | 102.5% | | 40.0 [%] | 150.0 [%] |
| P20.91 | | 105% | 105% | | 40.0 [%] | 150.0 [%] |
| P20.92 | | 110% | 110% | | 40.0 [%] | 150.0 [%] |

| | | |
|---|---|---|
| 0.00 [mOhm] | 650.00 [mOhm] | 0.00 [mOhm] |
| 0.70 | 1.00 | 0.90 |
| 90.0 [%] | 110.0 [%] | 100.0 [%] |
| 90.0 [%] | 110.0 [%] | 100.0 [%] |
| 0.00 [mOhm] | 650.00 [mOhm] | 0.00 [mOhm] |
| 0.00 [mH] | 65.50 [mH] | 0.000 [mH] |
| 0.800 | 1.350 | 1.140 |
| 0.800 | 1.350 | 0.940 |
| 0.800 | 1.350 | 1.080 |
| 0.800 | 1.350 | 0.950 |
| 0.00 [mH] | 655.00 [mH] | 0.00 [mH] |
| 40.0 [%] | 150.0 [%] | 108.0 [%] |
| 40.0 [%] | 150.0 [%] | 106.5 [%] |
| 40.0 [%] | 150.0 [%] | 105.0 [%] |
| 40.0 [%] | 150.0 [%] | 103.5 [%] |
| 40.0 [%] | 150.0 [%] | 102.0 [%] |
| 40.0 [%] | 150.0 [%] | 99.0 [%] |
| 40.0 [%] | 150.0 [%] | 96.5 [%] |
| 40.0 [%] | 150.0 [%] | 93.0 [%] |

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

### 8.2.20 2 P21

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

| | | | | |
|---|---|---|---|---|
| P21.10 | | 0 300 | 0 | |
| P21.11 | | 0 1000 [ms] | 0 [ms] | |
| P21.12 | | 0.0 2000.0 [%] | 100.0 [%] | 9.10 |
| P21.13 | | 20.0 500.0 [ms] | 100.0 [ms] | 9.10 |
| P21.14 | 1 | 0 60000 | 1024 | |
| P21.15 | [0]<br>[1] | 0 1 | 0 | 9.10 |
| P21.16 | | 0.0 300.0 [%] | 100.0 [%] | |
| P21.17 | | 0.0 300.0 [%] | 100.0 [%] | |
| P21.18 | | 0.0 300.0 [%] | 0.0 [%] | |
| P21.19 | | 0.0 300.0 [%] | 0.0 [%] | |
| P21.20 | [0]<br>[1] | 0 1 | 0 | |
| P21.21 | [0]<br>[1] | 0 1 | 0 | |
| P21.22 | | 0.0 300.0 [%] | 160.0 [%] | |
| P21.23 | | 0.0 200.0 [%] | 20.0 [%] | |
| P21.24 | | 0.0 300.0 [%] | 100.0 [%] | |
| P21.25 | | 0.0 200.0 [%] | 100.0 [%] | |
| P21.26 | | 0.0 1000.0 [%] | 0.0 [%] | 9.10 |
| P21.27 | | 0.00 15.00 [%] | 2.00 [%] | 9.10 |
| P21.28 | [0]<br>P21.16 P21.17<br>[1]<br>[2]<br>[3]DP | 0 3 | 0 | |

| | | | | | |
|---|---|---|---|---|---|
| P21.30 | | [0] P21.31<br>P21.32<br>[1] 1<br>[2] 2<br>[3] | 0 3 | 0 | |
| P21.31 | | | 0.0 100.0<br>[%] | 5.0<br>[%] | |
| P21.32 | | | 0.0 100.0<br>[%] | 5.0<br>[%] | |
| P21.34 | | [0]<br>[1] | 0 1 | 0 | 9.10 |
| P21.35 | | | 0.0 100.0<br>[s] | 0.0<br>[s] | |
| P21.36 | | | 50.0 150.0<br>[%] | 110.0<br>[%] | |
| P21.37 | | | 0.0 150.0<br>[%] | 100.0<br>[%] | 9.10 |
| P21.38 | | | 0.0 100.0<br>[%] | 25.0<br>[%] | 9.10 |
| P21.39 | | | 0.0 120.0<br>[%] | 100.0<br>[%] | 9.10 |
| P21.40 | | | 0.0 150.0<br>[%] | 100.0<br>[%] | 9.10 |
| P21.41 | | | 0.0 150.0<br>[%] | 135.0<br>[%] | |
| P21.42 | | [0]<br>[1] | 0 1 | 1 | |
| P21.43 | | | 25 1000<br>[ms] | 75<br>[ms] | |
| P21.44 | | | 25 1000<br>[ms] | 250<br>[ms] | |
| P21.45 | | | 0.0 100.0<br>[%] | 22.0<br>[%] | |
| P21.46 | | | 0.0 100.0<br>[%] | 18.0<br>[%] | |
| P21.47 | | | 0.0 200.0<br>[%] | 92.0<br>[%] | |
| P21.48 | | | 0.0 200.0<br>[%] | 87.0<br>[%] | |

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

**8.2.21 3 P22**

P2 \ɣ g \ \

| | | | | | |
|---|---|---|---|---|---|
| P22.49 | | | 0.0 150.0 [%] | 100.0 [%] | |
| P22.51 | | | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.52 | | | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.53 | Kp | | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.54 | Ki | | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.55 | | | 0.0 1000.0 [%] | 100.0 [%] | 9.10 |
| P22.56 | | | 0.0 1000.0 [%] | 100.0 [%] | 9.10 |
| P22.57 | | [0]<br>[1] | 0 1 | 0 | 9.10 |
| P22.58 | | | 0.0 125.0 [%] | 100.0 [%] | 9.10 |
| P22.59 | | | 1.0 25.0 [%] | 2.5 [%] | 9.10 |
| P22.60 | DROOP | 0 DROOP | 0.0 100.0 [%] | 0.0 [%] | 9.10 |
| P22.61 | DROOP | DROOP | 30 2000 [ms] | 50 [ms] | 9.10 |
| P22.62 | | | 0.0 1000.0 [%] | 100.0 [%] | 9.10 |
| P22.63 | | | 0.0 1000.0 [%] | 100.0 [%] | 9.10 |
| P22.66 | 1 | 1 | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.67 | 2 | 2 | 0.0 1000.0 [%] | 100.0 [%] | |
| P22.69 | | | 0.00 2.00 [%] | 1.00 [%] | |
| P22.70 | | | 0.00 2.00 [%] | 1.00 [%] | |
| P22.71 | | [0]<br>[1] | 0 1 | 0 | |
| P22.72 | | [0]<br>[1] | 0 1 | 1 | |
| P22.73 | | [0] × 1<br>[1] × 10 | 0 1 | 0 | |

| | | | | | |
|---|---|---|---|---|---|
| P22.74 | | | 0.00 650.00 [mOhm] | 0.00 [mOhm] | |
| P22.75 | | | 0.70 1.00 | 0.90 | |
| P22.76 | 1 | 1 | 90.0 110.0 [%] | 100.0 [%] | |
| P22.77 | 2 | 2 | 90.0 110.0 [%] | 100.0 [%] | |
| P22.78 | | | 0.00 650.00 [mOhm] | 0.00 [mOhm] | |
| P22.79 | | | 0.00 65.50 [mH] | 0.000 [mH] | |
| P22.80 | 1 | 1 | 0.800 1.350 | 1.140 | |
| P22.81 | 2 | 2 | 0.800 1.350 | 0.940 | |
| P22.82 | 3 | 3 | 0.800 1.350 | 1.080 | |
| P22.83 | 4 | 4 | 0.800 1.350 | 0.950 | |
| P22.84 | | | 0.00 655.00 [mH] | 0.00 [mH] | |
| P22.85 | 85% | 85% | 40.0 150.0 [%] | 108.0 [%] | |
| P22.86 | 87.5% | 87.5% | 40.0 150.0 [%] | 106.5 [%] | |
| P22.87 | 90% | 90% | 40.0 150.0 [%] | 105.0 [%] | |
| P22.88 | 92.5% | 92.5% | 40.0 150.0 [%] | 103.5 [%] | |
| P22.89 | 95% | 95% | 40.0 150.0 [%] | 102.0 [%] | |
| P22.90 | 102.5% | 102.5% | 40.0 150.0 [%] | 99.0 [%] | |
| P22.91 | 105% | 105% | 40.0 150.0 [%] | 96.5 [%] | |
| P22.92 | 110% | 110% | 40.0 150.0 [%] | 93.0 [%] | |
| P22.93 | 115% | 115% | 40.0 150.0 [%] | 88.5 [%] | |
| P22.94 | 120% | 120% | 40.0 150.0 [%] | 83.0 [%] | |
| P22.95 | 125% | 125% | 40.0 150.0 [%] | 77.0 [%] | |
| P22.96 | 130% | 130% | 40.0 150.0 [%] | 70.5 [%] | |
| P22.97 | 135% | 135% | 40.0 150.0 [%] | 63.5 [%] | |

P22.98 ( )



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

| | | | | |
|---|---|---|---|---|
| P23.74 | | | 0.00 [mOhm] | 650.00 [mOhm] | 0.00 [mOhm] |
| P23.75 | | | 0.70 | 1.00 | 0.90 |
| P23.76 | 1 | 1 | 90.0 [%] | 110.0 [%] | 100.0 [%] |
| P23.77 | 2 | 2 | 90.0 [%] | 110.0 [%] | 100.0 [%] |
| P23.78 | | | 0.00 [mOhm] | 650.00 [mOhm] | 0.00 [mOhm] |
| P23.79 | | | 0.00 [mH] | 65.50 [mH] | 0.000 [mH] |
| P23.80 | | | | | |

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

### 8.2.23 MODBUS P32

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| P32.0 | MODBUS | [0]<br>[1] | 0 1 | 0 | |
| P32.1 | MODBUS ID | | 1 255 | 1 | |
| P32.2 | | [0]RS485<br>[1]RS232 | 0 1 | 0 | |
| P32.3 | | [0] 9600 BPS<br>[1] 14400 BPS<br>[2] 19200 BPS<br>[3] 38400 BPS<br>[4] 56000 BPS<br>[5] 57600 BPS<br>[6] 115200 BPS | 0 6 | 3 | |
| P32.4 | | [0] None_8_1_CFG<br>[1] Even_8_1_CFG<br>[2] Odd_8_1_CFG<br>[3] None_8_2_CFG<br>[4] Even_8_2_CFG<br>[5] Odd_8_2_CFG | 0 5 | 0 | |
| P32.5 | Modbus | Modbus<br>0<br>Modbus | 0 100 [s] | 0 [s] | 0s |
| P32.6 | Modbus | 0- 1- | 0 1 | 0 | |

### 8.2.24 P33

لاحة

| | | | | | |
|---|---|---|---|---|---|
| P33.18 | [W2] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 0 | |
| P33.19 | [W3] | 7-2 | 0 37 | 0 | |
| P33.20 | [W3] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 0 | |
| P33.21 | [W4] | 7-2 | 0 37 | 1 | |
| P33.22 | [W4] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 0 | |
| P33.23 | [W5] | 7-2 | 0 37 | 18 | |
| P33.24 | [W5] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 2 | |
| P33.25 | [W6] | 7-2 | 0 37 | 21 | |
| P33.26 | [W6] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 1 | |
| P33.27 | [W7] | 7-2 | 0 37 | 22 | |
| P33.28 | [W7] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 1 | |
| P33.29 | [W8] | 7-2 | 0 37 | 23 | |
| P33.30 | [W8] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000 | 0 4 | 1 | |

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

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

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

| | | | | | |
|---|---|---|---|---|---|
| P33.70 | [W12] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000<br>[5] [%] × 1<br>[6] [%] × 10<br>[7] [%] × 100 | 0 7 | 0 | |
| P33.71 | [W13] | 7-3 | 0 48 | 0 | |
| P33.72 | [W13] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000<br>[5] [%] × 1<br>[6] [%] × 10<br>[7] [%] × 100 | 0 7 | 0 | |
| P33.73 | [W14] | 7-3 | 0 48 | 0 | |
| P33.74 | [W14] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000<br>[5] [%] × 1<br>[6] [%] × 10<br>[7] [%] × 100 | 0 7 | 0 | |
| P33.75 | [W15] | 7-3 | 0 48 | 0 | |
| P33.76 | [W15] | [0] × 1<br>[1] × 10<br>[2] × 100<br>[3] × 1000<br>[4] × 10000<br>[5] [%] × 1<br>[6] [%] × 10<br>[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

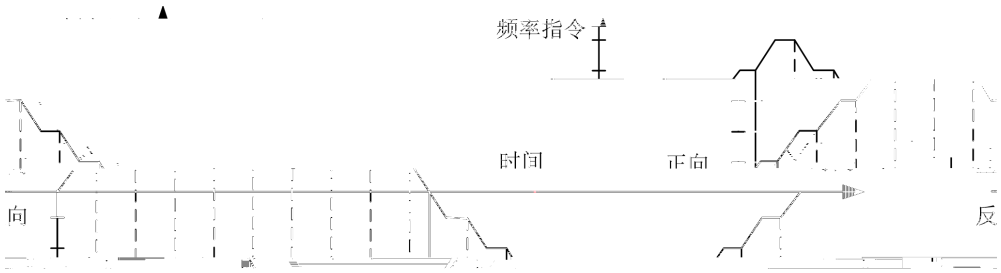
| | |
|---|---|
| | |
| 0 | |
| 1 | 0 |
| 2 | 1 |
| 3 | 2 |
| 4 | 3 |
| 5 | 4 |
| 6 | 5 |
| 7 | 0 @32bit |
| 8 | 1 @32bit |
| 9 | 2 @32bit |
| 10 | 3 @32bit |
| 11 | 4 @32bit |
| 12 | 5 @32bit |
| 13 | [32] |
| 14 | [32] |
| 15 | 32bit_MSW |
| 16 | 32bit_LSW |
| 17 | |
| 18 | |
| 19 | |
| 20 | [rpm]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

2 [1]

4 16 ( 8421 )

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

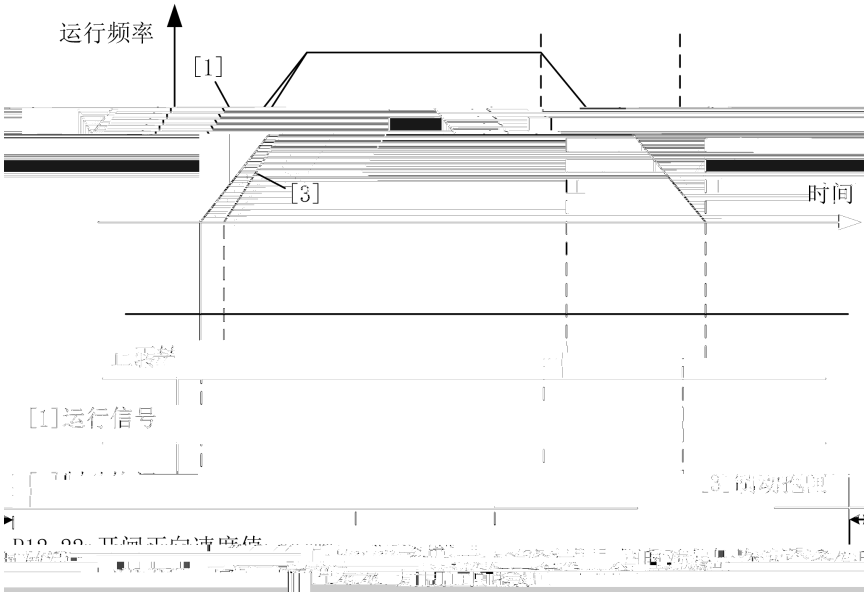



## 9.3

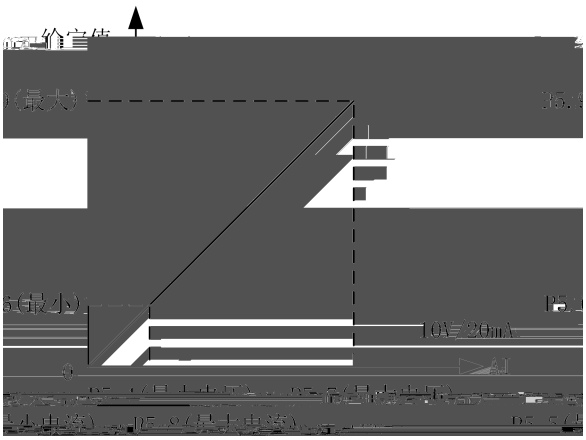
/

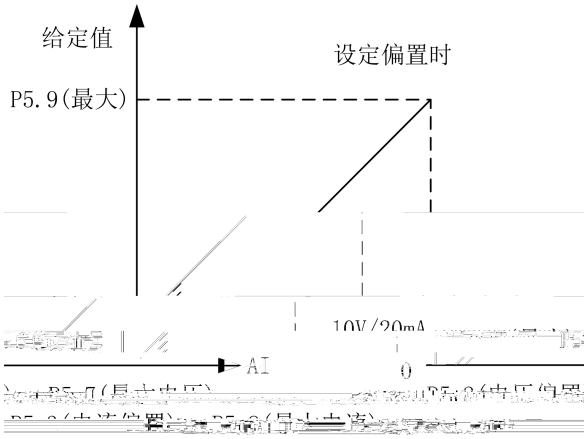
[1] [3] [3]

[1] [3]

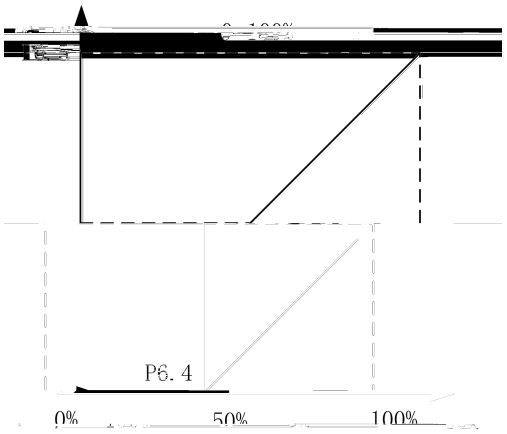


## 9.4

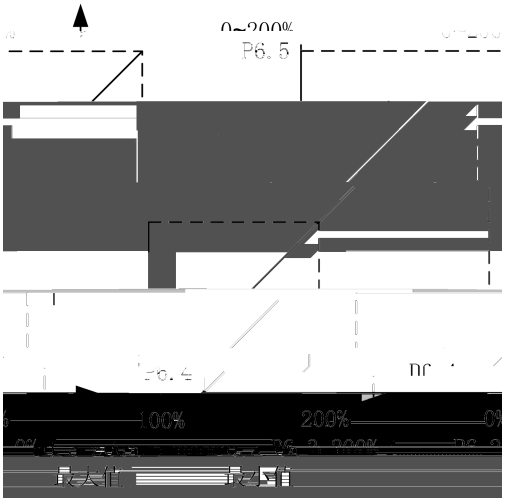




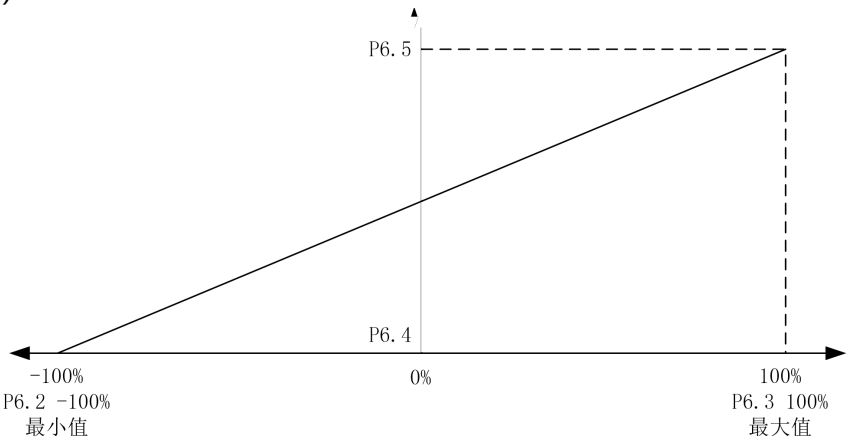

## 9.5



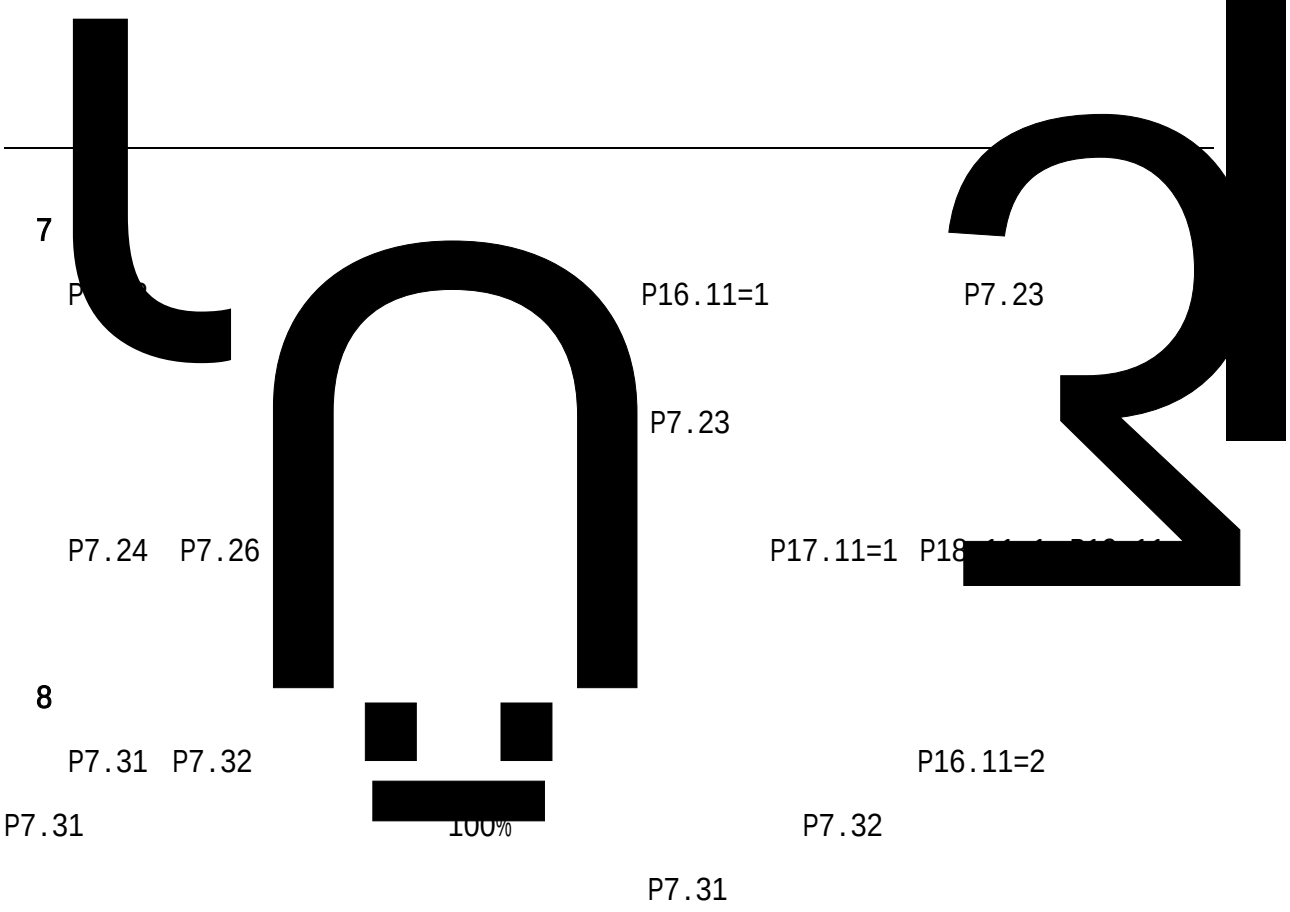

(a) 0~100%




b 0~200%




c -100~100%



7

P16.11=1 P7.23

P7.23

P7.24 P7.26 P17.11=1

8

P7.31 P7.32 P16.11=2

P7.31 100% P7.32

P7.31

11

## 9.7

### 1

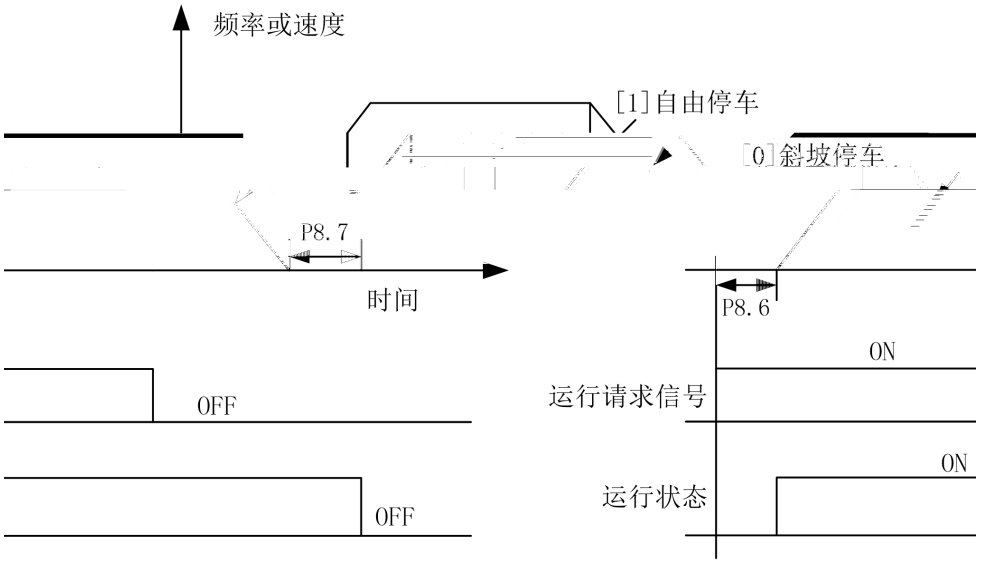
P8.3

[0]

[1]

P8.6 P8.6

P8.7

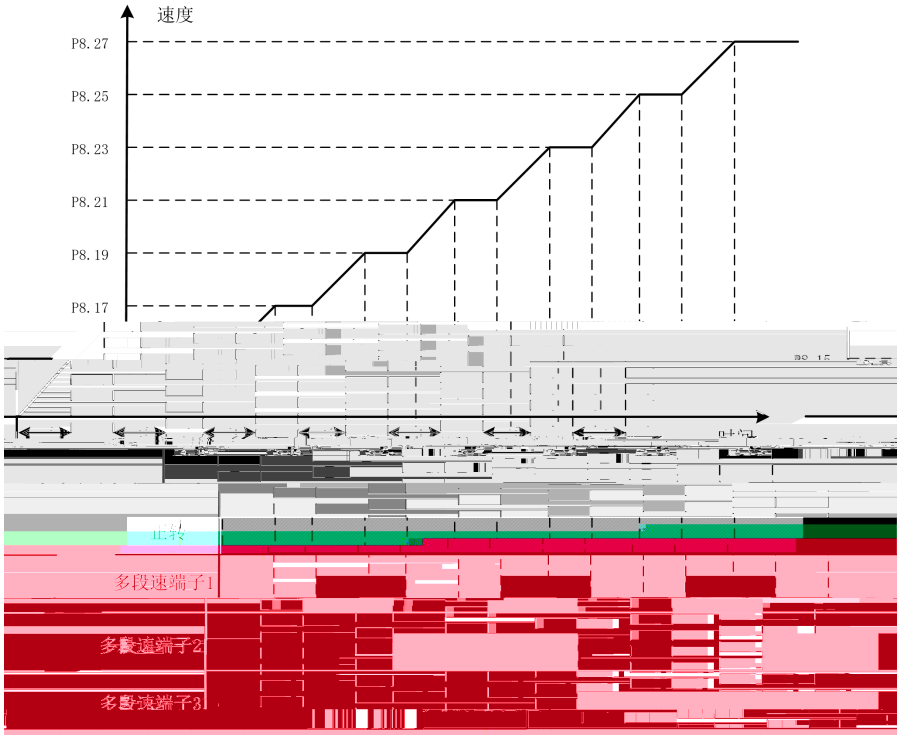



### 2

P8.14

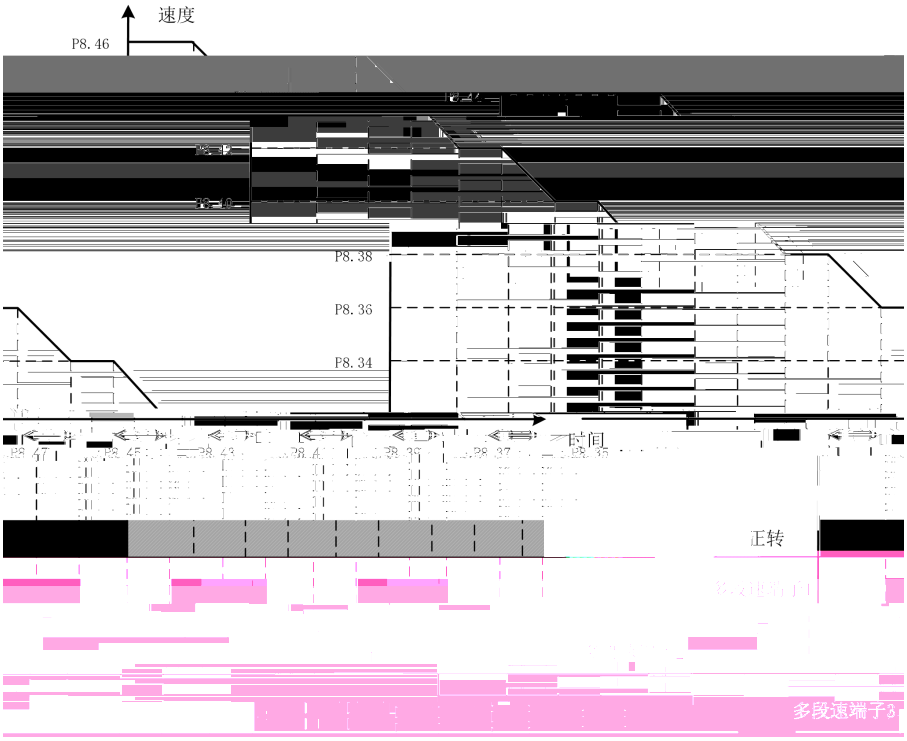
P8.14 P8.33

P8.33




P8.15 < P8.17 < P8.19 < P8.21 < P8.23 < P8.25 < P8.27

| P8.15 | P8.17 | P8.19 | P8.21 | P8.23 | P8.25 | P8.27 |
|---|---|---|---|---|---|---|
| 10% | 20% | 30% | 50% | 60% | 80% | 100% |



P8.34 < P8.36 < P8.38 < P8.40 < P8.42 < P8.44 < P8.46

| P8.34 | P8.36 | P8.38 | P8.40 | P8.42 | P8.44 | P8.46 |
|---|---|---|---|---|---|---|
| 10% | 20% | 30% | 50% | 60% | 80% | 100% |

**3**

PROFIBUS MODBUS

P8.13 P8.32

1 =P8.14 × P8.16 × ( × 0.001)

1 =P8.33 × P8.35 × ( × 0.001)

## 9.8

**1**

P12.2 P12.17

**2**

P12.22 P12.37

[3]

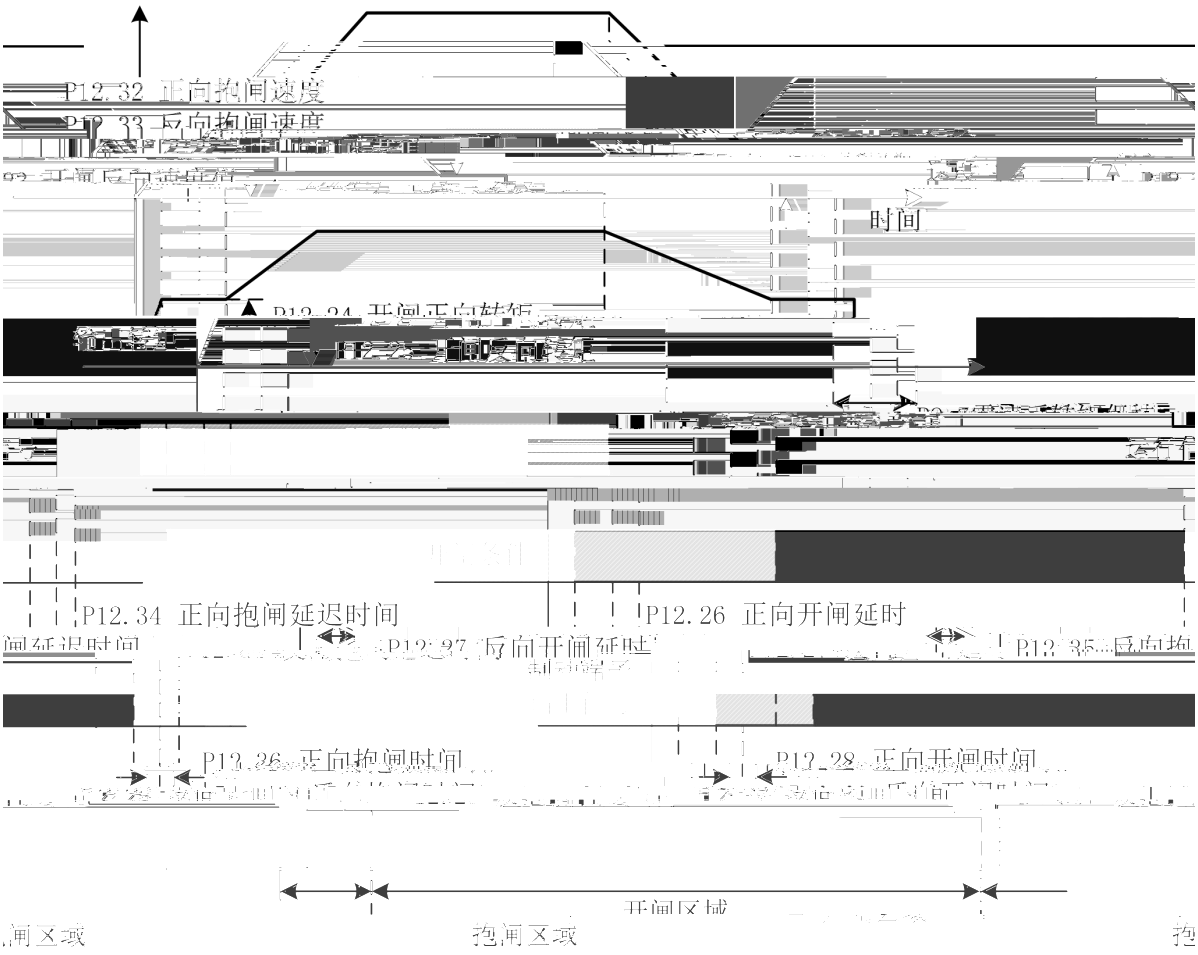
P12.22 P12.23 P12.24 P12.25

P12.32[ ] P12.33[ ]

P12.28 P12.29

P12.36 P12.37

P16



V/F

P16.0 P16.9

P16.7

120 × P16.5/P P16.9

12 .7

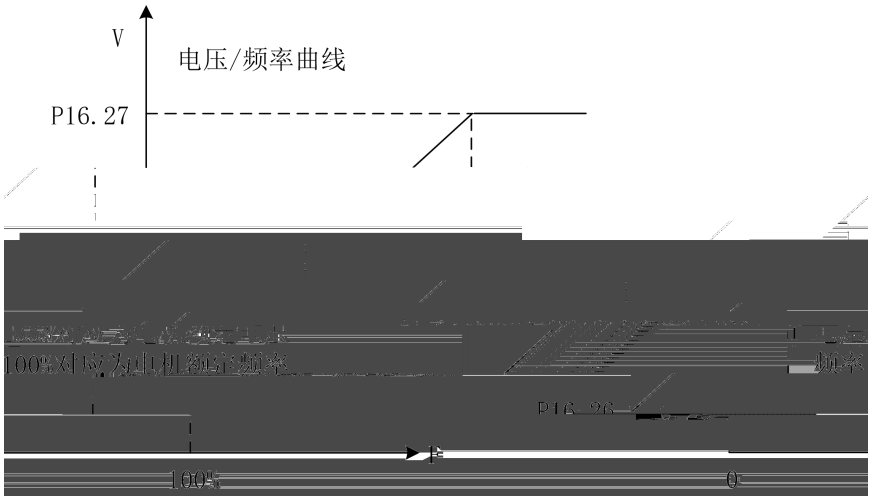
P16.4

2

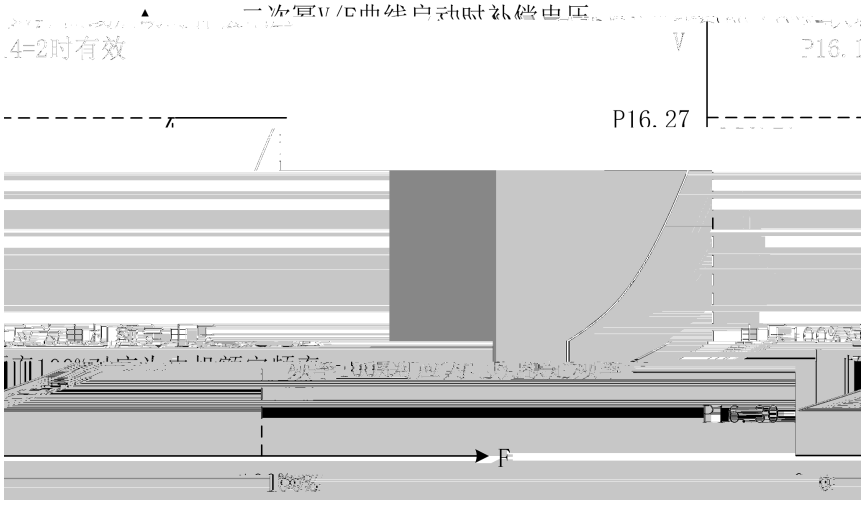
P16.12

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

[2]




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



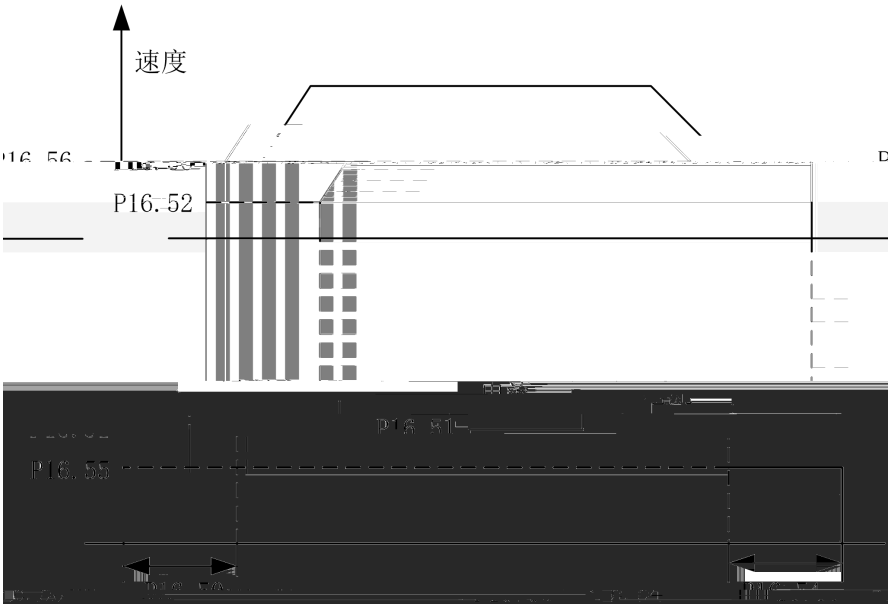

**6**

P16.50 P16.56

V/F

P16.50 P16.51 P16.52

P16.54 P16.55 P16.56




**7**

P16.64

## 9.10

**1**

P20.0

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

P20.0=0 P20.1≠0 P20.2≠0

P20.0=1 P20.1≠0 P20.2≠0 1

0

P16.11 [1] [2]

P20.3 P20.1 [4]

**2**

P20.7

P20.8 P20.9 P20.7=1

**3**

P20.13

**4**

P20.15 A B

A B U V W

[0]

[1] A B

**5**

GDHF-PGD1 PG

GDHF-PGD1 PG

DI “[10] ” DP “CW0.9 ”

P20.26 P20.27 0

2%

P20.34 [0] 1

0 P20.26 P20.27 0

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

P20.34 [1] 2

200 P20.26 P20.27 0

HF650LC P20.34 [1]

## 9.11

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

Î
P16.12

V/F

## 10.

### 10.1

W01 SYS_NOT_RDY (Ready)

[ P3

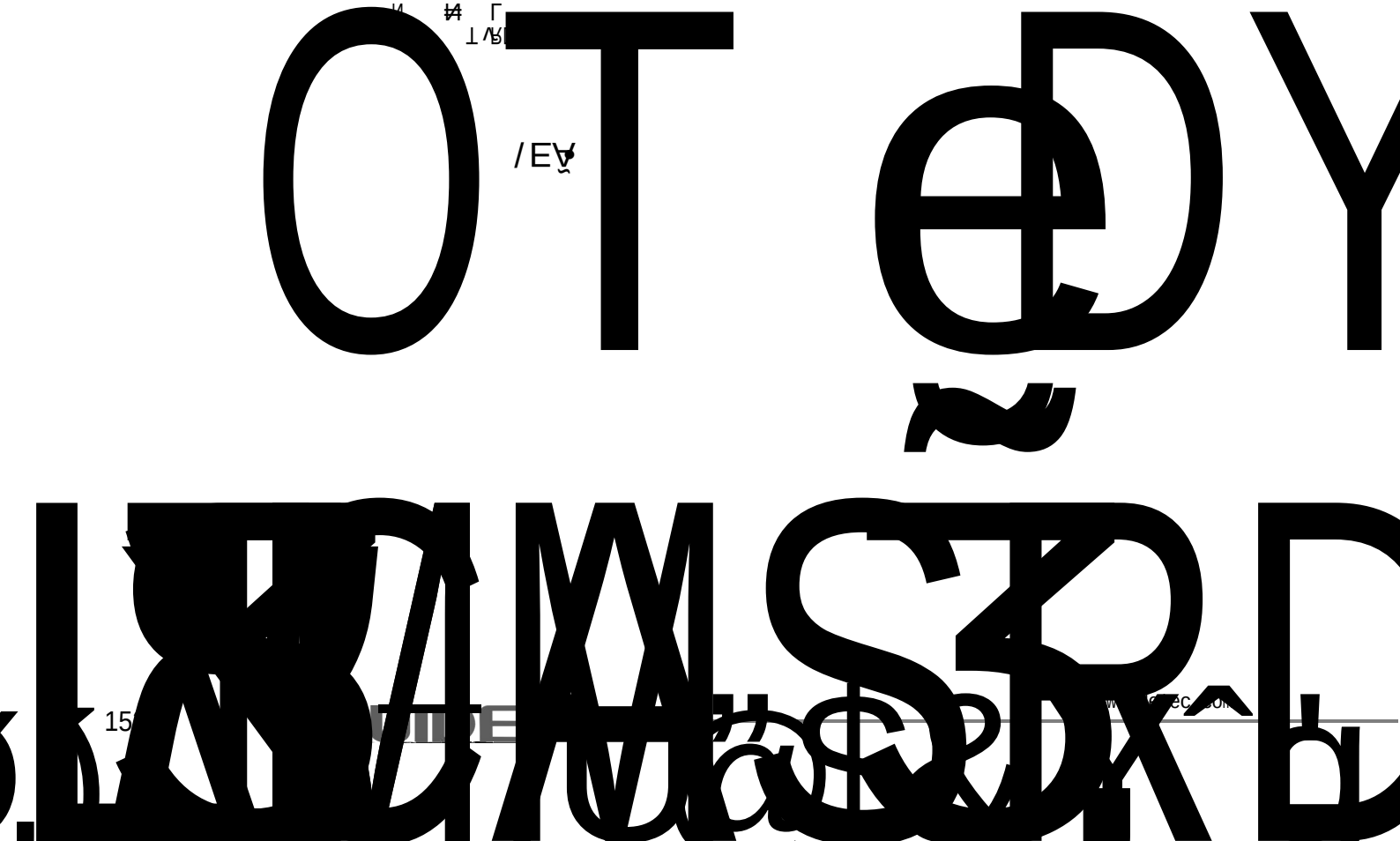
W02 ]
NO_DRV_ENABLE

[ P3 X

W03
LOCAL_EM ]

[

W04
REMOTE_EM



IGBT

[E050] U ERR_UT not reset IGBT

IGBT

[E051] U ERR_UT not reset IGBT

IGBT

[E052] V ERR_UT not reset IGBT

IGBT

[E053] V ERR_UT not reset IGBT

IGBT

[E054] W ERR_UT not reset IGBT

IGBT

[E055] W ERR_UT not reset IGBT

[E056] ERR_SLAVE_FAULT not reset

[E100] OV P8.35( 1) P7.12( )

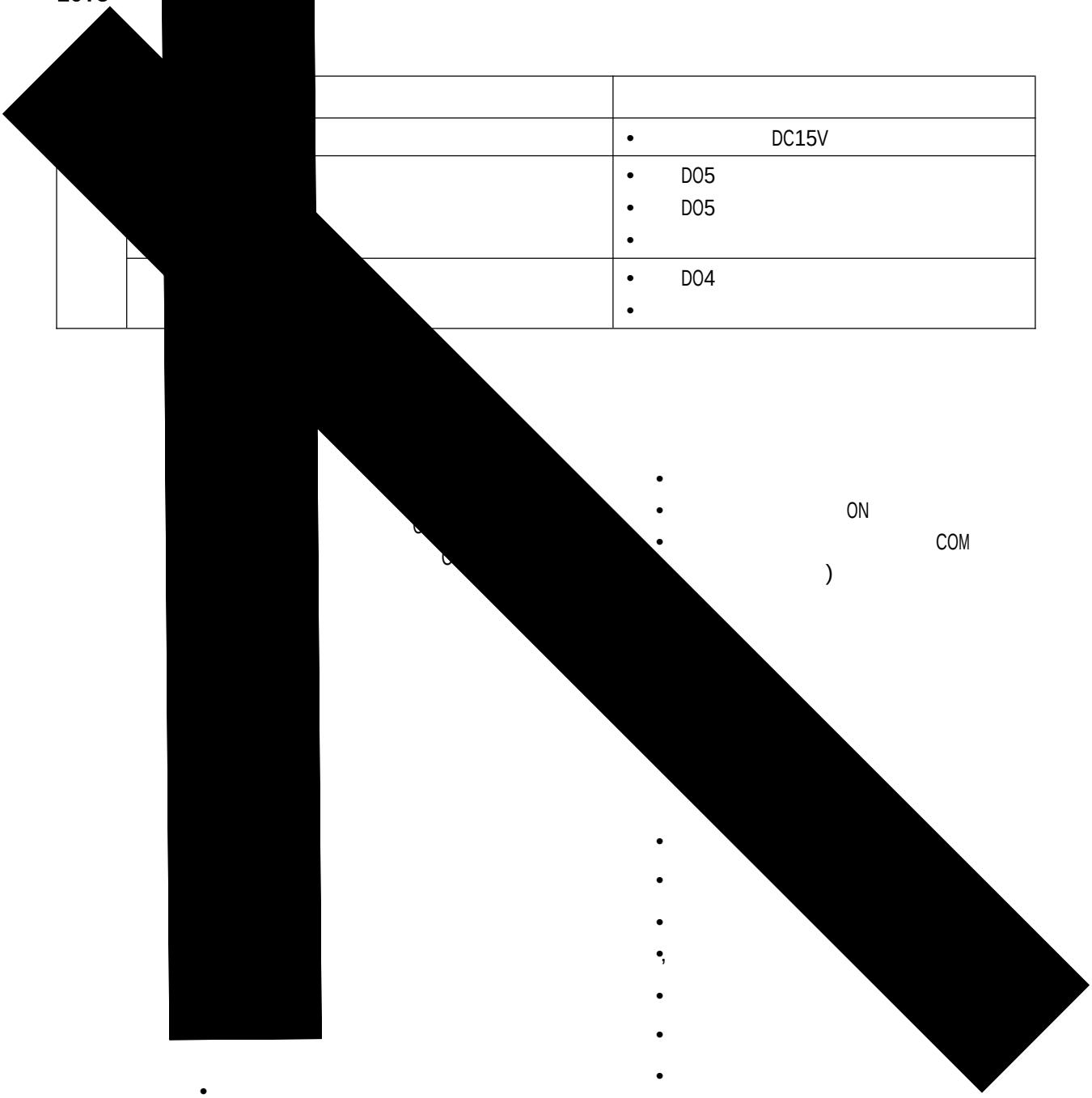
[E105] " UVV

| | | |
|---|---|---|
| [E112] | ZC | P7.8 |
| [E113] | MIP | |
| [E114] | MOP | |
| [E115] | OS | P7.19<br>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<br>P7.31 P7.32 |
| [E121] | IGBT1<br>OT1 | |
| [E122] | IGBT2<br>OT2 | |
| [E123] | IGBT3<br>OT3 | |
| [E124] | IGBT4<br>OT4 | |
| [E125] | IGBT5<br>OT5 | |
| [E126] | IGBT6<br>OT6 | |
| [E127] | IGBT7<br>OT7 | |

| | |
|---|---|
| [E128] | IGBT8<br>OT8 |
| [E137] | FAN STALL |
| [E138] | TEMP_SENSING FAIL |
| [E139] | Pre_Charging Fail |
| | P7.95 |
| [E140] | Line UV |
| [E141] | Line OPEN |
| [E142] | Line Detection Error |
| | DI |
| [E143] | Line SW Fail o?ﺮﺼ N ﻲN אn |

## 10.3

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| | | |
| | | • DC15V |
| | | • D05<br>• D05<br>• |
| | | • D04<br>• |



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# 11.

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| 1<br><br>2<br><br>3<br><br>4 |
|  |
| 1 CMOS<br><br>2<br><br>3 |

## 11.1

## 11.2

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

## 11.3

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|---|---|---|
| | | |
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| | | |
| | 2 | 1<br>2 |
| PCB | | |

## 11.4

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