31010130
2020-10
101

HGD610

5 F23 F24

PID

HGD610

- 11kW
-
-
- 3 AI1 AI2 AI4 -10V +10V 4 20mA AI3
- 9
-
-
- 485 Profibus-DP CANopen DeviceNet
- ABZ UVW UVW

HGD610

FVC

PG

4
5 LC/RC
6

7

:

1
2 R S T U V W
3

1
2

1
2 10
R S T

3
4

1
2

1
2 10

3
4
5 10

1
2

1
2

500V

5MΩ

0.00Hz 600.00Hz

PWM

PWM

1000m

9

HGD610

HGD610 1－1

1－1 HGD610

		kW	A
380 415V	HGD610-0R7-3B	0.75	2.5
	HGD610-1R5-3B	1.5	4.2
	HGD610-2R2-3B	2.2	5.6
	HGD610-4R0-3B	4.0	9.4
	HGD610-5R5-3B	5.5	13
	HGD610-7R5-3B	7.5	17
	HGD610-011-3B	11	25
	HGD610-015-3B	15	32
	HGD610-018-3B	18.5	38
	HGD610-022-3/3B	22	45
	HGD610-030-3/3B	30	60
	HGD610-037-3/3B	37	75
	HGD610-045-3/3B	45	90
	HGD610-055-3/3B	55	110
	HGD610-075-3/3B	75	150
	HGD610-090-3	90	176
	HGD610-110-3	110	210
	HGD610-132-3	132	253
	HGD610-160-3	160	304
	HGD610-185-3	185	357
	HGD610-200-3	200	380
	HGD610-220-3	220	426
	HGD610-250-3	250	465
	HGD610-280-3	280	520
	HGD610-315-3	315	585
	HGD610-355-3	355	650
	HGD610-400-3	400	725
	HGD610-450-3	450	820
	HGD610-500-3	500	900
	HGD610-560-3	560	1010

-

2－1

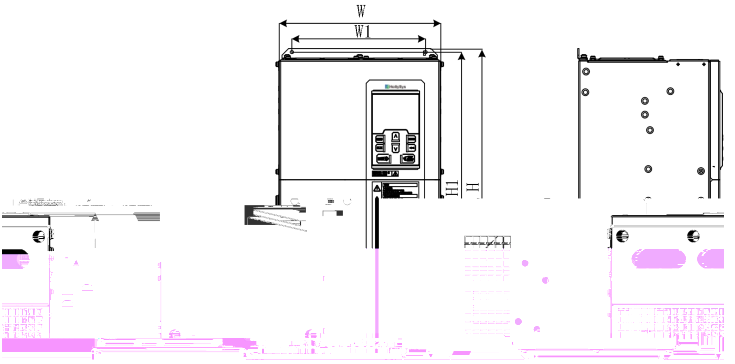
2－1

-

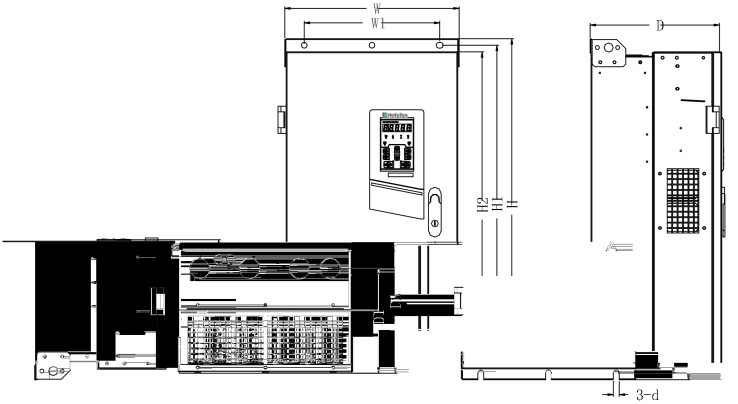
HGD610 4R0 3 B

HGD610 30 4 12 2-1 2-2

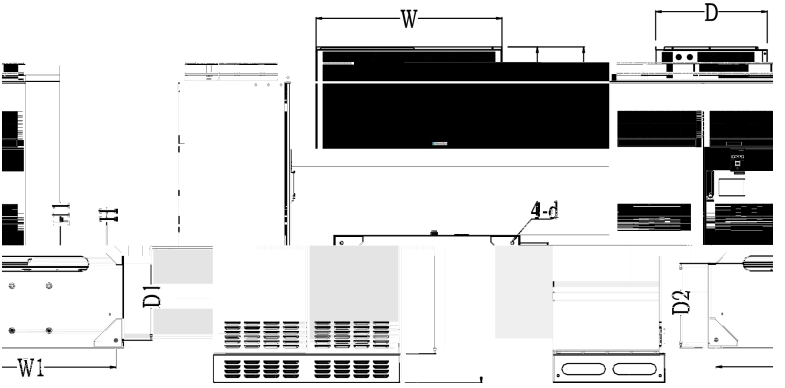
114.5±0.1(L)*71±0.1 (W)mm 1.2 2.0mm



c 22kW 75kW



d 90kW 400kW



e 450kW 560kW

2- 1 HGD610

2 – 2 HGD610

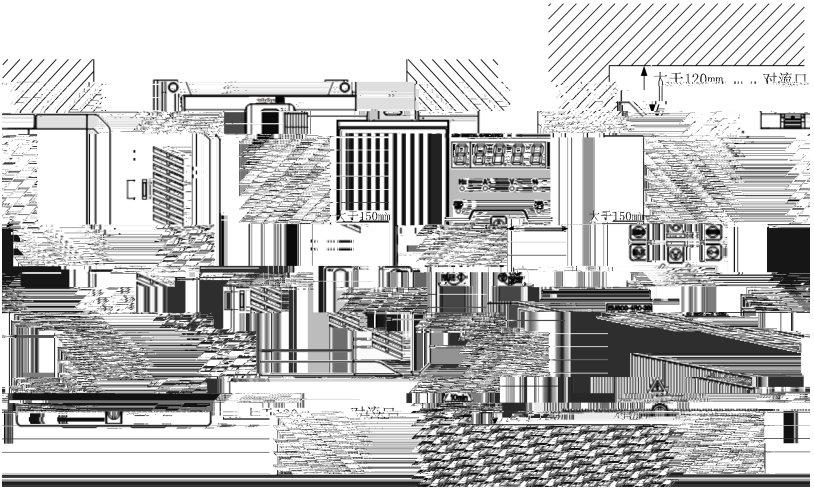
	W	W1/W2	H	H1	H2	D	D1	D2	d	
HGD610-0R7-3B	130	115/ 120	228	220	219	153	108	75	5	(b)
HGD610-1R5-3B										
HGD610-2R2-3B										
HGD610-4R0-3B										
HGD610-5R5-3B	140	120/ 130	270	261	258	172	128	94	5	(b)
HGD610-7R5-3B										
HGD610-011-3B	180	150	368	353	343	210	165	136	7	(b)
HGD610-015-3B										
HGD610-018-3B										
HGD610-022-3/3B	250	200	484	470	440	222	150	--	9	(c)
HGD610-030-3/3B										
HGD610-037-3/3B										
HGD610-045-3/3B	315	220	560	546	513	250	180	--	9	(c)
HGD610-055-3/3B	350	250	662	638	603	262	188	--	12	(c)
HGD610-075-3/3B										
HGD610-090-3	386	300	753	724	700	292	231	300	13	(d)
HGD610-110-3	416	300	855	825	793	307	246	315	13	(d)
HGD610-132-3										
HGD610-160-3	497	397	1107	1076	1036	340	285	348	13	(d)
HGD610-185-3										
HGD610-200-3										
HGD610-220-3	656	450	1348	1314	1261	388	232	395	13	(d)
HGD610-250-3										
HGD610-280-3										
HGD610-315-3	801	680	1417	1383	1330	388	190	395	13	(d)
HGD610-355-3										
HGD610-400-3										
HGD610-450-3	1000	920	1800	1645	--	600	520	450	17	(e)
HGD610-500-3										
HGD610-560-3										

1
2 -10°C 40°C
3 90%RH
4
5
6
7
8
9

HGD610

( ) 2- 2

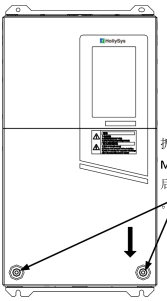
HGD610 450kW

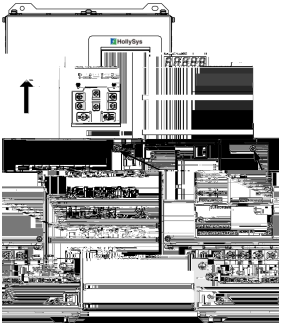


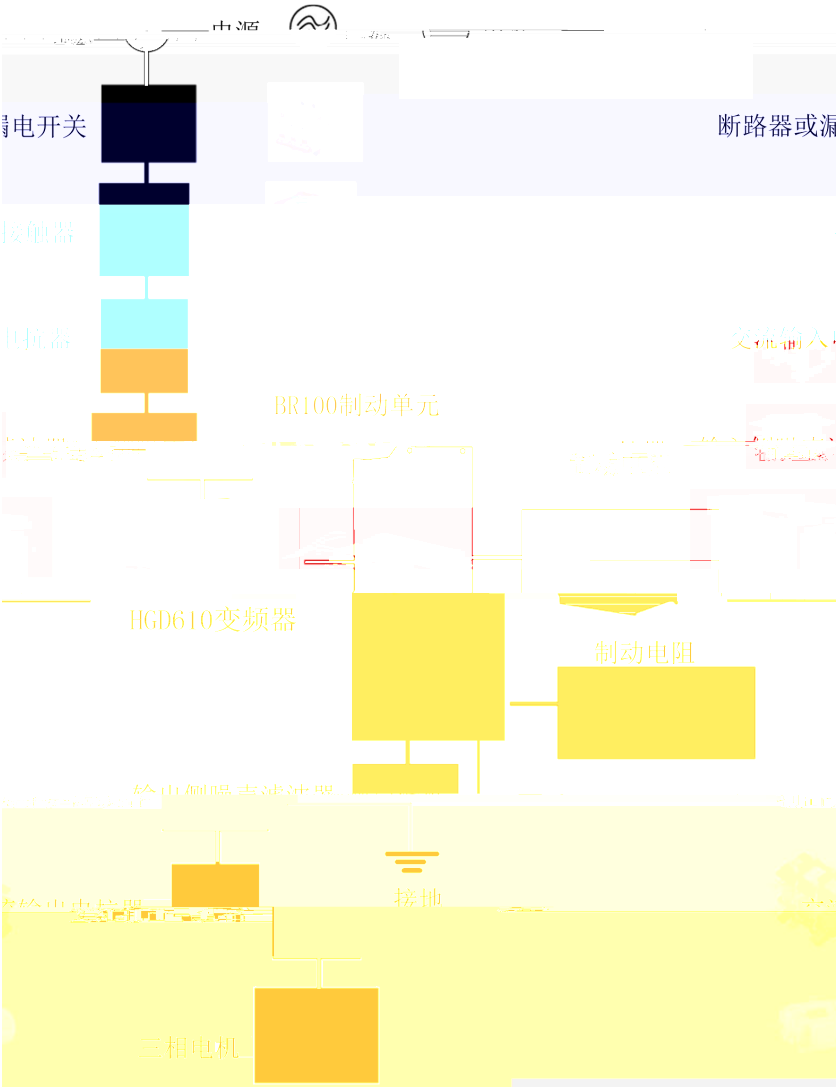
2- 2

2.5

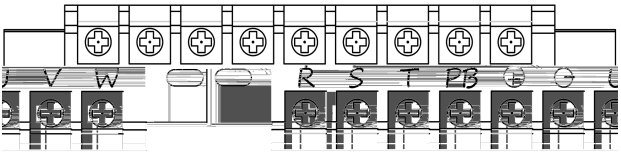
-



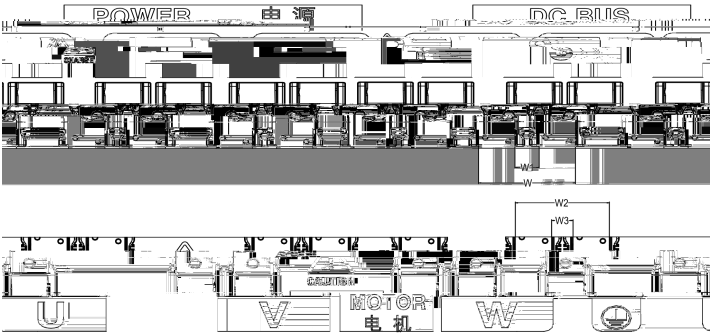



电源
电开关
断路器或漏
接触器
电抗器
交流输入
BR100制动单元
HGD610变频器
制动电阻
接地
三相电机

3- 2



a)



b) 90kW

3- 2

3 – 1 90kW 400kW

	W	W1	W2	W3
HGD610-090 132	33	-	-	-
HGD610-160 200	39	-	-	-
HGD610-220 280	88	22	88	22
HGD610-315 400	104	26	101	23

1 90kW

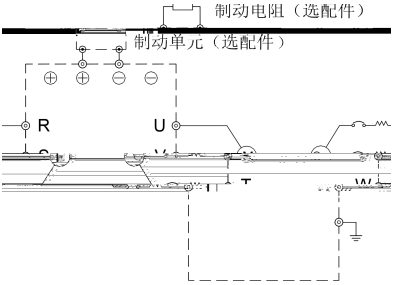
2 220kW

3 – 2

R S T	
U V W	
⊕⊖	
⊕ PB	⊕ PB
⏚	

● HGD610-0R7-3B HGD610-075-3B

● HGD610-022-3 HGD610-560-3

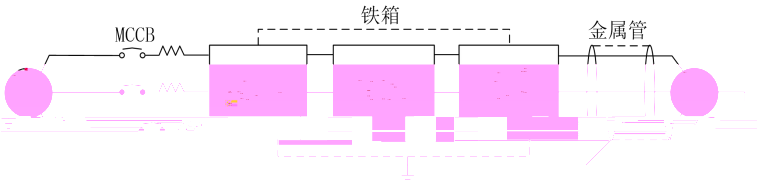


3- 3

3-1

3-4

HGD600



3-4

HGD600

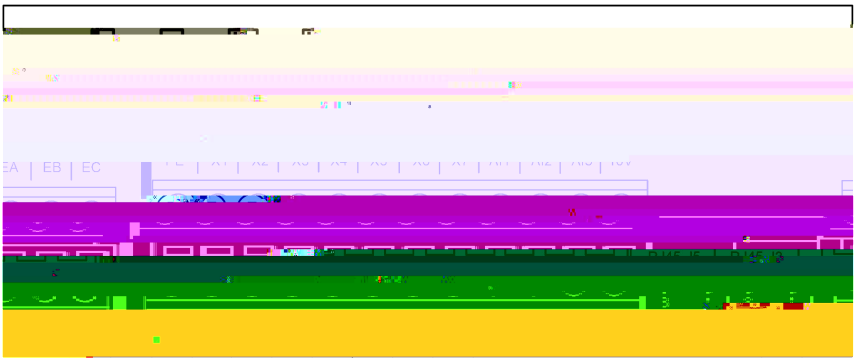
8

+ PB

+ - + -

PB+ PB- BR100

3-5



3-5

J9 J10

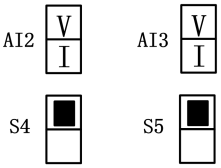
3 – 3

	10V-GND	+10V	+10V 20mA
	24V-COM	+24V	+24V 200mA
	PLC		24V 24V
	AI1-GND	1	DC 0 10V DC-10V +10V 1MΩ
	AI2-GND	2	DC 0 10V DC-10V +10V, S4 1MΩ 250Ω
	AI3-GND	3	DC 0 10V/0 20mA S5 / 1MΩ 250Ω
	X1-COM	1	NPN,PNP 4.5 kΩ 9 30V
	X2-COM	2	
	X3-COM	3	
	X4-COM	4	
	X5-COM	5	
	X6-COM	6	
	X7-COM		100kHz 12 48V 1 kΩ

	M1-GND	1	DC 0 10V/0 20mA S2
	M2-GND	2	DC 0 10V/0 20mA S3
	Y1-COM		DC48V 50mA
	Y2-COM		DC48V 50mA 100kHz <5 kΩ
	R1 EA-EB-EC		EA-EC: EB-EC:
	R2 RA-RB-RC		RA-RC: RB-RC:
	A+	RS-485	485
	A-		485
	PE		

AI1 AI2 AI3

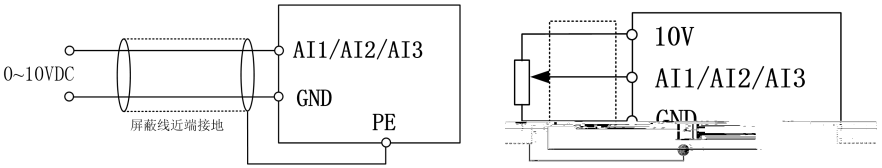
AI2 AI3 S4 S5 3-6



3- 6 S4 S5

AI1 AI2 AI3 3-7-a

AI1 AI2 AI3 3-7-b

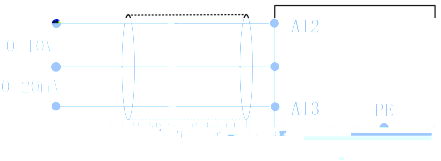


a b

3-7 AI1 AI2 AI3

AI3

AI3 S5

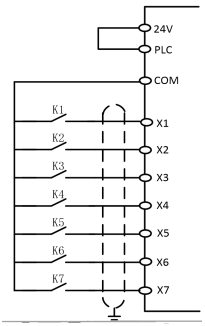


3-8 AI2 AI3

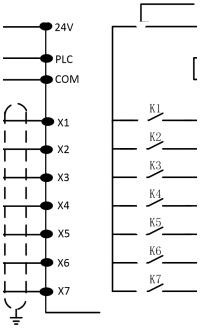
HGD610 PLC X1 X7 PLC

(NPN) (PNP) X1 X7

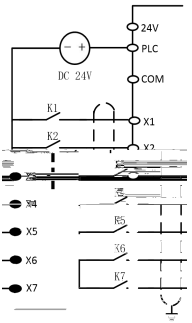
A NPN +24Vdc



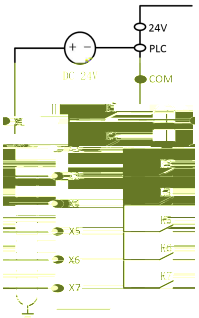
B PNP +24Vdc



C NPN



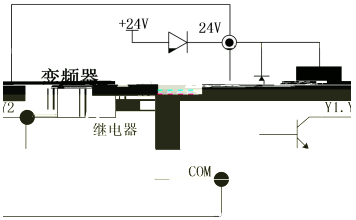
D PNP



3-9

24V PLC

Y1 Y2 24V 3-10



a: b:

3-10

M2 0 20mA 0 10V

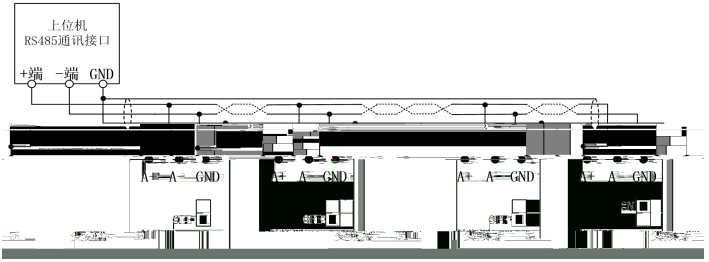
M2 S3 M1 0 10V

485

A+ A- RS485 A+ A- -

PC PLC RS485 RS485/RS232

3-11



3-11 /

-
- EA EB EC EA EB EC Y1 Y2
- 50m
-
-

HGD610


制动电阻
MCCB
MC
R/L1
PB
U
V
M
PG卡接口
RUN
多功
F/R
D1
X2 故障复位
D3
D4
D5
X5
X6
R1
EA
EB
EC
AC250V 10mA以上 3A以下
COM
10V
AI1 张力给定
RA
RB
RC
R2
+10V/20
0-10V/-10
0~10V/0~20mA
1kΩ~5kΩ
GND
GCM
0V~24V/0mA~50mA
通讯
端口
A+
A-
J3
J10
COM
GND
PE

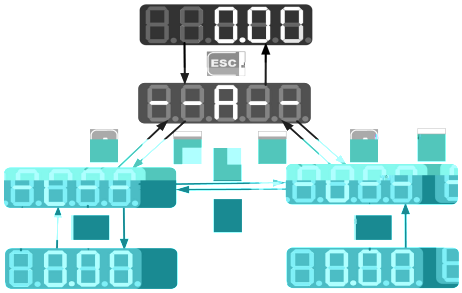
LED

4- 1 LED

LED

/		
		
		
		F12.00
		
		
	/	
		
		
		
		
		F00.02
		
		

LED 0 1 2
3
3 --A-- --U--
F11 (--C--)
0 ESC 1 1
UP DOWN 4-1



4-1

--A--
ENTER 2 ENTER 3

F03.28 5.28 4-2

4-2 F03.28=5.28

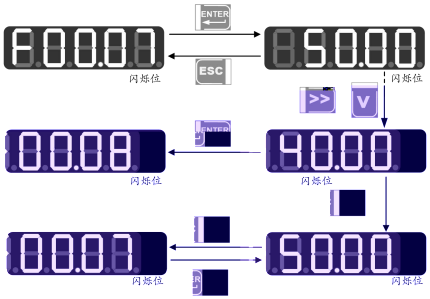
ENTER

F11.00 F11.31

3 ESC 3

2 ESC 3 2

4-3



4-3 ESC

--U--

F11 3

F11.00 U00.00 F11.00 F00.00

2 ENTER

(--C--)

ENTER 2 F00.00

2 UP DOWN

/ 3

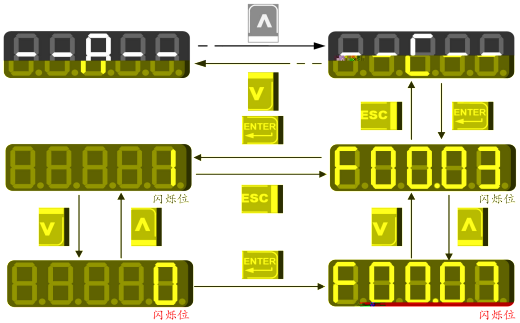
3

ENTER

F00.03 1 F00.07 40.00

F00.03 UP F00.07 DOWN

F00.03



4-6

0  F12.33 F12.37 5

F12.03 1 ENTER “ UP ”

0

F12.03 2 “ DN ”

0

1

“ No DN ” ECS

2 CPUA “ go oN ”

ENTER

ESC

3

M.K

M.K F12.00

/

RUN STOP/RESET

F12.00 5 M.K

F01.34 RUN

“ TUNE ” F01.34 0

STOP

HGD610 FVC

HGD610

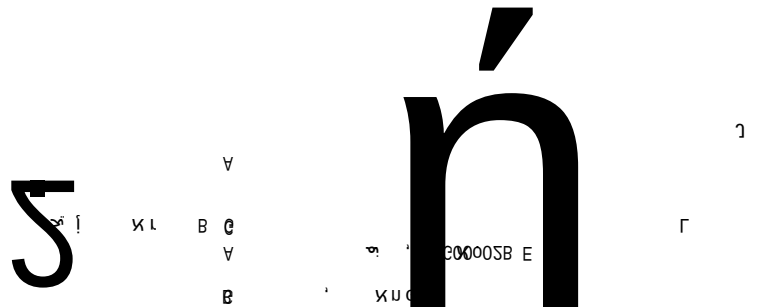
F 1
1

F01.34=1		
F01.34=11		
F01.34=2		
F01.34=12		

-
-
- F00.02=0
-

/	
1	F01.00 F01.01 F01.02 F01.03 F01.04 F01.05 F01.06
2	F14.00 F14.06
	F01.24 F01.25 F01.27 AB

- ű



HGD610

M.K ,

, M.K

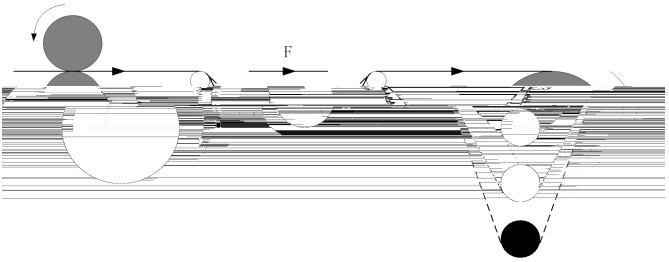
F00.01=0 VVF

PG

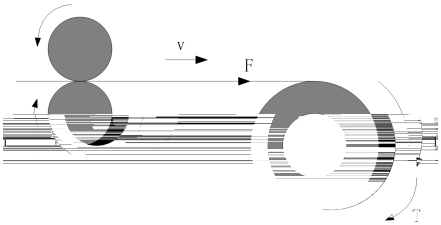
HGD610

F23.00

5-1 5-8



5-1



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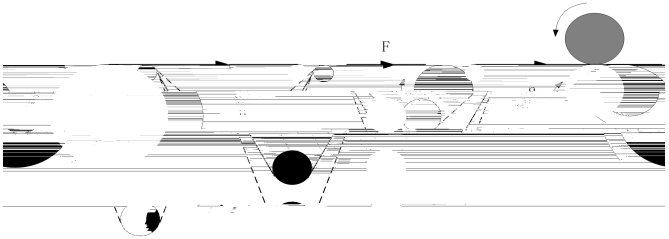

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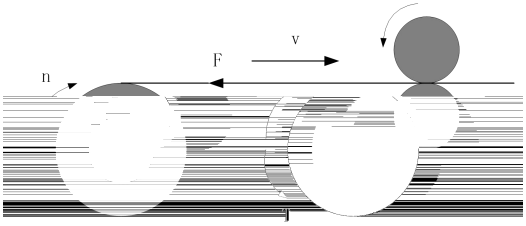

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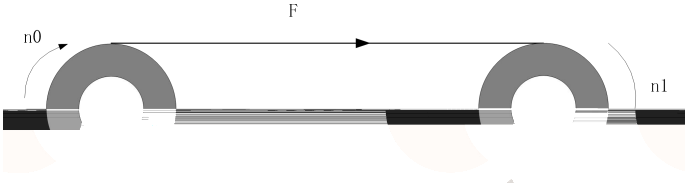

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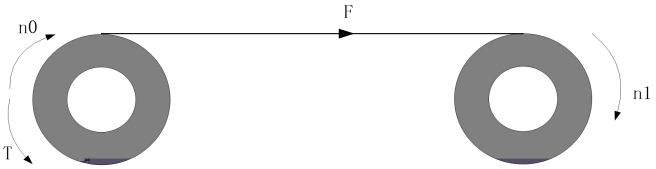

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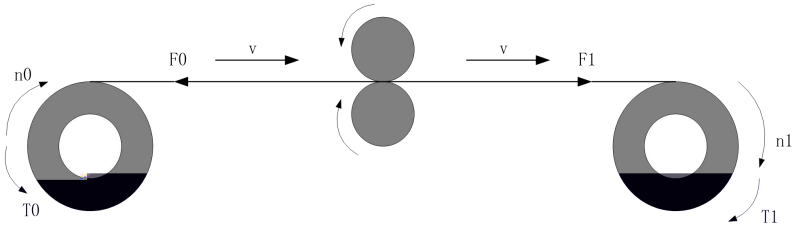

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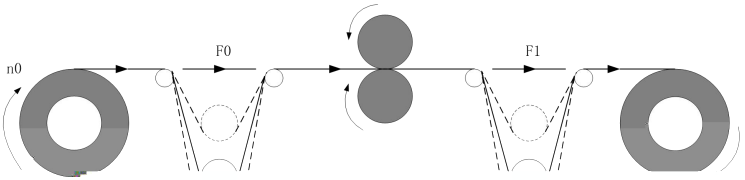


5-8

F23.00 = 0

HGD610 F13 F13.00

= 1

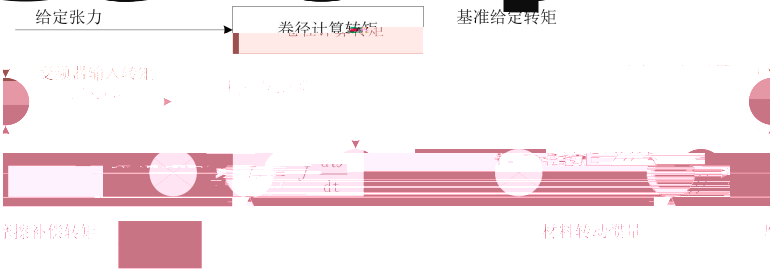
F23.00 = 1

F23.00=1 HGD610 F13.00 /

0

3 F24 PID

5-10



5-10

5%　　FVC

SVC

:

1　　F13.01 = 0　　F13.02　F13.02

2　　F23.01　　F23.02　　F23.03

F23.04

3　　:F23.05

4　　F23.06　F23.08

F23.06　F23.20

F23.08　　:　　100.0%　　2R　　,T_D

,i　　.R　　,F0　　.

$$T_D = \frac{F_0}{i} \cdot R$$

5　　F23.21　F23.31.

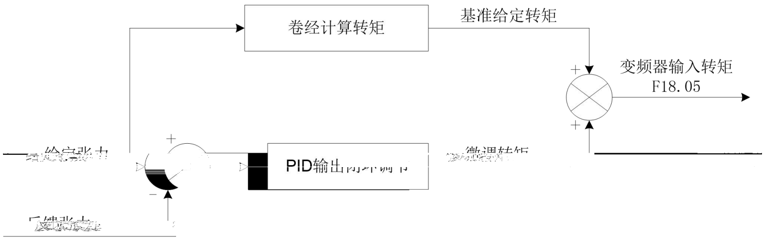
,　　F23.71　　,　　F23.72

m"　　א

5.5.4 F23.00 = 3

F23.00=3 HGD610 F13.00 /

1 5-11



5-11

FVC

1 F13.01 = 0 F13.023.01F13.02

2 Aĝ F23.01

3 Ǝ ɩɩɩ

Ĵ

EĴ ÅÄI€b

2AÑ1ÅC

1 F23.00=4 F13.00=1

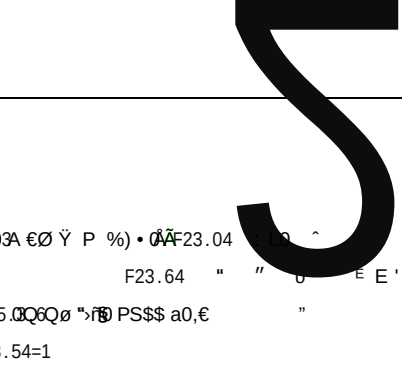
2 F23.01

3 F23.02 F

4 F23.05 F23.64 "

AÑ..B3 ”

5 F23.54=1



6

6.1

HGD610 6-1

6- 1 HGD610

SC	/EMC	1. 2. 3. 4. 5. 6.	1. 2. 3. 4.
HOC		1. 2. V/F V/F 3. 4.	1. 2. V/F 3. 4. 5. 6. 7.
SOC		5. 6. 7.	
HOU		1.	1. 2. 3. / 4.
SOU		2. 3. 4.	
SIU		1. 2. 3. 4.	1. 2. 3.
IIP		1. 2.	1. 2. 3. 4.
OIP		1. U V W	1. 2. 3.
OI		1. 2. V/F V/F 3. 4.	1. 2. V/F 3. 4.
OH		1. 2. 3.	1. 2. 3.
E11		1.	1.
E12		1. 2. 3.	1. 2. 3. 4.

		4. 5.	5.
E13		1. 2. V/F V/F 3.	1. 2. V/F 3.
E14		1.	1.
E15		1. 2.	1. STOP/RESET 2. 0x41
E16		1. 2.	1. F10.03 0.0 2. F10.03 3.
E17			1. 2.
E18		1. 2. 3. 4. 5.	1. 2. 3. 4.
E19			1.
E20		1. 2. 3.	1. 2. 3.
E21	PID	1. PID F09.24 F09.25	1. 2. 3.
E22		1. PG 2.PG 3.PG F01.24 4. 5.	1. PG 2. PG 3. PG F01.24 4. 5.
E23		1. 2.	1. STOP/RESET 2.
E24		1. STOP/RESET 2. FRS=ON 3. 4. 5.	1. STOP/RESET 2. 3. 4. 5.
E25		1. PG 2. F01.25 3. AB F01.27 4.	1. PG V/F 2. 3. AB 4.

E26		1. 2. 3.	1 2 3 F07.22 F07.23
E27			
E28			
E29		1. SPI	1. 2.
E33	CANopen	1.	1.
E34	DeviceNET	1. DeviceNET DC24V	1.
E35	DeviceNET BUS-OFF	1. DeviceNET CAN_H CAN_L	1.
E36	DeviceNET MACID	1.	1.
E37	DeviceNET IO	2. IO	1.
E38	DeviceNET IO	1. IO	1.
E39	Profibus-DP	1.	1.
E40	Profibus-DP	1.	1.
E41	Profibus-DP IO	DP DP	
E43			1. . m " ∃ ;

6.2

6.1

6.2.1

- UP DOWN

F12.02 1 2 F12.02 0

6.2.2

- RUN
  - F00.02
  - FRS COM FRS COM
  - 0
- RUN F/R=ON
  - F00.02
  - FRS=ON FRS=OFF
  - 0
- F00.21 1

6.2.3

6.2.4

- F15.32

-
  - F07.07

    F07.07
  -

7

-
-
-
-

-
-
-
-

LED 10 7-1

7- 1

PCB		4 6kg/cm²
	2	

7- 2

	2 3
	4 5

40 80% 12

-
-
-
-
-

8

Pb **P×** **D**

D— D

D 10% D 5%

D 10% 15% D 5% 20%

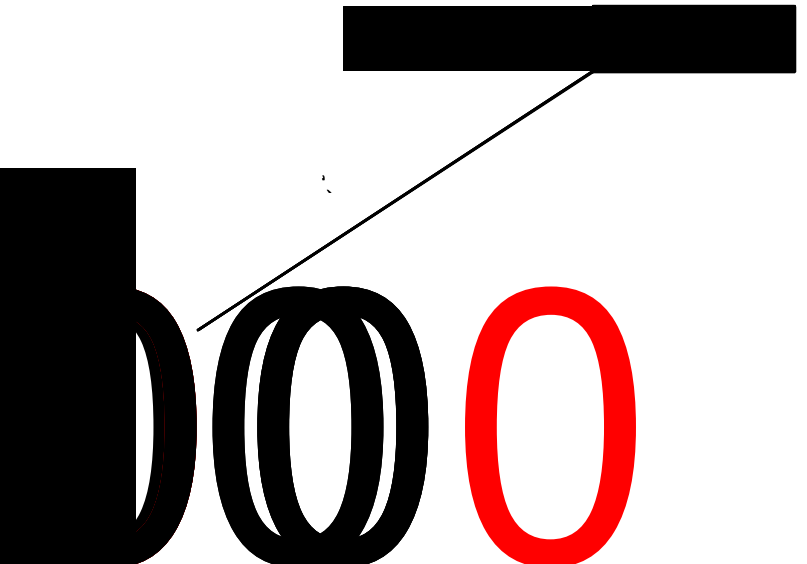
D 10% 20% D 50% 60%

100m D 50% 60%

HGD610

10% 20%

	kW Ω W



>400VDC,

	I_{av}(A)	I_{max}(A)	(mm^2)
BR100-045	45	75	10
BR100-160	75	150	16
BR100-315	120	300	25

2

8.3

I/O

EC-IO-A1	I/O	4 :X8 X11 1 Y3 F03.04 1 AI4 -10V +10V PT100/PT1000

EC-CM-C1	CANopen	125kbps 250kbps 500kbps 1Mbps
EC-CM-D1	DeviceNet	125kbps 250kbps 500kbps
EC-CM-P1	Profibus-DP	

PG

HGD610 PG PG

EC-PG-01	PG	
EC-PG-02	PG	
EC-PG-D1	PG	UVW
EC-PG-D3	PG	UVW
EC-PG-U1	UVW PG	UVW
EC-PG-R1	PG	

8.4

HGD610 ,

HGD600

HGD610 450 560kW

2000mm 2200mm

HGD600

8.5

9

HGD610 “ ” 6-1 20

F18 F19 3

F00		**F01**	1
F02		**F03**	
F04		**F05**	V/F
F06		**F07**	
F08	PLC	**F09**	PID
F10		**F11**	
F12		**F13**	
F14	2	**F15**	
F16		**F17**	I/O
F18		**F19**	
F23		**F24**	

0

• ×

F00					
F00.01	1	0 V/F VVF 1 SVC 2 FVC		0	
F00.02		0 LOC/REM 1 LOC/REM 2 LOC/REM		0	
F00.03		0 RUN F/R / 1 RUN F/R 2 RUN Xi F/R 3 RUN Xi F/R /		0	
F00.04	A	0 F00.07 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 X7 6		0	
F00.05	B	0 F00.07 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 X7 6 10 PID		0	

F00.06		0 A 1 B 2 3 A B 4 A 5 B		0	
F00.07		0.00 F00.16	Hz	50.00	●
F00.08		0 A+ B 1 A- B 2 3		0	
F00.09	B	0 1 A		0	
F00.10		0.0 300.0	%	100.0	●
F00.11		0.0 300.0	%	100.0	●
F00.12		0.0 300.0	%	100.0	●
F00.13		0 1 AI1* 2 AI2* 3 AI3* 4 AI4* 5 PULSE *		0	
F00.14	1	0.00 650.00 F15.13=0 0.0 6500.0 F15.13=1 0 65000 F15.13=2	s	15.00	●
F00.15	1	F00.14	s	15.00	●
F00.16		20.00 600.00	Hz	50.00	
F00.17		0 F00.18 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 X7 6		0	
F00.18		F00.19 F00.16	Hz	50.00	●
F00.19		0.00 F00.18	Hz	0.00	●
F00.20		0 1		0	●
F00.21		0 / 1		0	
F00.22		0.00 650.00	s	0.00	●
F00.23		1.0 16.0 4kW 1.0 10.0 5.5 7.5kW 1.0 8.0 11 45kW 1.0 4.0 55 90kW 1.0 3.0 110 560kW	kHz	2.0	●
F00.24		0 1		1	

F00.25		0 1		0	
F00.26		20 200	Hz	40	●
F00.27		10 150	Hz	100	●
F00.28		0 1 1 2		0	
F00.29		0 65535		0	
F01	**1**				
F01.00		0 1 2		0	
F01.01		0.10 650.00	kW		
F01.02		50 2000	V		
F01.03		0.01 600.00 ≤ 75kW 0.1 6000.0 75kW	A		
F01.04		0.01 600.00	Hz		
F01.05		50 60000	rpm		
F01.06		0 Y 1 Δ			
F01.24		0 ABZ 1 UVW 2 UVW 4		0	
F01.25		1 65535		1024	
F01.26		0.0 359.9 °		0.0	
F01.27	AB	0 1		0	
F01.28	UVW	0 1		0	
F01.29	UVW	0.0 359.9 °		0.0	
F01.30		1 65535		1	
F01.32		0.0 10.0 0.0		0.0	
F01.33		0.000 0.100	s	0.002	
F01.34		0 1 2 3 11 12 13		0	
F02					
F02.00	X1	0 6-2 “ ”		1	
F02.01	X2			2	
F02.02	X3			11	
F02.03	X4			12	
F02.04	X5			13	
F02.05	X6			14	
F02.06	X7			10	
F02.07	AI1			0	
F02.08	AI2			0	
F02.09	AI3			0	

F02.15	1	D7	D6	D5	D4	D3	D2	D1	D0		*0000000	
		*	X7	X6	X5	X4	X3	X2	X1			
		0 /										
		1 /										
F02.16	2	D7	D6	D5	D4	D3	D2	D1	D0		00000000	
		X11	X10	X9	X8	AI4	AI3	AI2	AI1			
		0 /										
		1 /										
F02.17		0 100 0 n n ms									2	
F02.18	X1	0.000 30.000								s	0.000	●
F02.19	X1	0.000 30.000								s	0.000	●
F02.20	X2	0.000 30.000								s	0.000	●
F02.21	X2	0.000 30.000								s	0.000	●
F02.22	X3	0.000 30.000								s	0.000	●
F02.23	X3	0.000 30.000								s	0.000	●
F02.24	X4	0.000 30.000								s	0.000	●
F02.25	X4	0.000 30.000								s	0.000	●
F02.26		0.00 F02.28								kHz	0.00	●
F02.27		−100.0 +100.0								%	0.0	●
F02.28		1.00 100.00								kHz	50.00	●
F02.29		−100.0 +100.0								%	100.0	●
F02.30		0.00 10.00								s	0.10	●
F02.31		AI1 0 1 1V 0 3V 1, AI2 0 1 AI3 0 1 AI4 0 1									0000D	
F02.32		AI1 0 1 1 2 2 3 3 4 AI2 0 1 1 2 2 3 3 4 AI3 0 1 1 2 2 3 3 4 AI4 0 1 1 2 2 3 3 4									3210D	

F03.16	R2	0.000 30.000	s	0.000	●
F03.17	Y1	0.000 30.000	s	0.250	●
F03.18	Y2	0.000 30.000	s	0.250	●
F03.19	R1	0.000 30.000	s	0.250	●
F03.20	R2	0.000 30.000	s	0.250	●
F03.21	M1	0		0	
F03.22	M2	6-4		2	
F03.23	Y2	“ ”		11	
F03.24	Y2	1.00 100.00	kHz	50.00	●
F03.25	Y2	0.00 F03.24	kHz	0.00	●
F03.26	Y2	0.00 10.00	s	0.10	●
F03.27	M1	-100.0 100.0	%	0.0	●
F03.28	M1	-10.00 10.00		1.00	●
F03.29	M2	-100.0 100.0	%	0.0	●
F03.30	M2	-10.00 10.00		1.00	●
F03.31		D7 D6 D5 D4 D3 D2 D1 D0 * * * Y3 R2 R1 Y2 Y1 0 1		00000	●

0		41	PID
1	RUN	42	PID
2	F/R	44	PID /
3		45	
4	(FJOG)	46	
5	(RJOG)	47	
6	UP	48	
7	DOWN	50	
8	UP/DOWN	51	
9		52	AI1
10		53	AI2
11	1	54	AI3
17	1	55	
18	2	56	
19	1	57	
20	2	83	1
21		84	2
22		85	1
23		86	2
24		87	/ 1
25		88	/ 2
26		89	
27		90	
28	/	91	
29		92	
33		93	
34	≤ 250Hz	94	
35	35 ≤ 100kHz X7	95	
36		96	
39		97	
40	≤ 100kHz X7		

0		16	
1	RUN	17	
3	FDT1	18	
4	FDT2	23	
5	REV	24	
6		25	
7		27	
8	READY	45	
9		46	
10		47	PLC
11			

0		9	AI2
1		10	AI3
2		11	AI4
3		12	100.00% 0.00%
4		30	
5		31	
6		32	
7		33	
8	AI1 °		

F04

F04.00 0 1

F04.20		0.00 F00.16	Hz	0.00	
F04.21		0.0 150.0 100.0=	%	100.0	
F04.22		0.00 30.00 0.00:	s	0.00	
F04.23		0.00 30.00	s	0.50	
F04.24		100 150 100		100	
F04.26	/	0 F04.00 1		0	
F04.27		0 1		0	
F04.30		0 1		0	●
F05		**V/F**			
F05.00	V/F	0 V/F 1 V/F 2 1.3 V/F 3 1.7 V/F 4 V/F 5 VF Ud=0 Uq=K*t= 6 VF Ud=0 Uq=K*t=F/Fe*2*		0	
F05.01	VF F1	0.00 F05.03	Hz	0.50	●
F05.02	VF V1	0.0 100.0 100.0=	%	1.0	●
F05.03	VF F2	F05.01 F05.05	Hz	2.00	●
F05.04	VF V2	0.0 100.0	%	4.0	●
F05.05	VF F3	F05.03	Hz	5.00	●
F05.06	VF V3	0.0 100.0	%	10.0	●
F05.10	V/F	0.00 200.00	%	100.00	●
F05.11	V/F	0.00 200.00	%	100.00	●
F05.12	V/F	0.00 10.00	s	1.00	●
F05.13		0 20000		400	●
F05.14		0.00 600.00	Hz	45.00	●
F05.15		0.00 10.00	Hz	0.00	●
F05.16		0.00 50.00	%	0.00	●
F05.17		1.00 60.00	s	5.00	●
F05.18		0.00 500.00	%	100.00	●
F05.19		0.00 10.00	s	0.50	●
F06					
F06.00	ASR_P1	0.00 100.00		15.00	●
F06.01	ASR_T1	0.000 30.000 0.000	s	0.050	●
F06.02	ASR_P2	0.00 100.00		10.00	●
F06.03	ASR_T2	0.000 30.000 0.000	s	0.100	●
F06.04	1	0.00 2	Hz	5.00	●
F06.05	2	1 F00.16	Hz	10.00	●
F06.06		0.000 1.000		0.500	●
F06.07		0.000 0.100	s	0.001	●
F06.08		10.00 200.00	%	100.00	●
F06.09		0 F06.10 F06.11 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 6 AI2 AI3 7 AI2 AI3		0	

F06.10		0.0 250.0	%	165.0	●
F06.11		0.0 250.0	%	165.0	●
F06.12	ACR-P1	0.00 10.00		0.50	●
F06.13	ACR-T1	0.00 300.00 , 0.00	ms	10.00	●
F06.14	ACR-P2	0.00 10.00		0.50	●
F06.15	ACR-T2	0.00 300.00 , 0.00	ms	10.00	●
F06.16		0.000 40.000		1.000	●
F06.17	SVC	0 1 2		2	
F06.18	SVC	50.0 400.0 100.0	%	100.0	
F06.19	SVC	50.0 150.0 100.0	%	100.0	
F06.20		0 100	%	0	●
F06.21		0 1 2		1	
F06.22		100.00 200.00	%	95.00	●
F06.23		0.0 150.0 100.0	%	100.0	●
F06.24		0.00 10.00		0.50	●
F06.25		0.00 300.00	ms	2.00	●
F06.26	MTPA	0 1		0	
F06.27		0 100 100	%	100	●
F06.28		0.00 100.00 100.00	%	10.00	●
F06.29		0.0 60.0 100.0	%	20.0	●
F06.30		0.00 10.00		0.50	●
F06.31		0.00 300.00	ms	10.00	●
F06.32		0.00 100.00 100.00	%	20.00	●
F06.33		0.0 30.0 100.0	%	8.0	●
F06.34		0.00 10.00		0.50	●
F06.35		0.00 300.00	ms	10.00	●
F06.36		0.00 1.00		0.75	
F06.38		0.0 30.0	°	0.0	●
F06.39		0.00 300.00	%	0.00	●
F06.40		0.000 30.000	s	0.100	●
F07					
F07.00		**E20 E22 E13 SLU SOU SOC ILP OLP** 0 1		*0000000	
F07.01		0.20 10.00		1.00	●
F07.02		50 100	%	80	●
F07.03		0 1 PT100 2 PT1000		0	●
F07.04		0 200		110	●

F07.05		0 200		90	●
F07.06		0 1 2 3		2	
F07.07		120.0 150.0 380V,100.0=537V	%	128.5 690V	
F07.08		60.0 100.0=		76.0	
F07.09		100.0	%	86.0	●
F07.10		0.00 100.00	s	5.00	●
F07.11		0 1 1 2 2 3 3		3	
F07.12		20.0 180.0(100.0=)	%	150.0	●
F07.13		0 1		0	
F07.14		0 20 0		0	
F07.15		0 1		0	
F07.16		0.01 30.00	s	0.50	●
F07.17		0.01 30.00	s	10.00	●
F07.18		**Ilp HOU HOC SIU SOU SOC** 0 1		**000000	
F07.19	1	**E21 E16 E15 E14 E13 E12 Olp Ilp** 0 1		00000000	
F07.20	2	**E28 E27 E25 E23** 0 1		*0000	
F07.21		0 1		0	●
F07.22		0.0 100.0	%	20.0	●
F07.23		0.0 60.0	s	1.0	●
F07.24		0 1		1	
F07.25		0.0 50.0 (F00.16	%	20.0	●
F07.26		0.0 60.0 0.0	s	1.0	●
F08		**PLC**			
F08.00	1	0.00 F00.16	Hz	0.00	●
F09					
F10					
F10.00	Modbus	1 247 0		1	
F10.01	Modbus	0 4800 1 9600 2 19200 3 38400 4 57600 5 115200		1	
F10.02	Modbus	0 1-8-N-1 1 +8 +1 1 1-8-E-1 1 +8 +1 +1 2 1-8-O-1 1 +8 +1 +1 3 1-8-N-2 1 +8 +2 4 1-8-E-2 1 +8 +1 +2 5 1-8-O-2 1 +8 +1 +2		0	
F10.03		0.0s 60.0s, 0.0	s	0.0	●
F10.04	Modbus	1 20	ms	2	●
F10.05		0 1		0	
F10.06		0 1		0	

F10.07		0 1 2 3 4 PID 5		1	
F10.08		0.00 10.00		1.00	●
F10.09		0.000 30.000	s	0.200	●
F10.10		0 Modbus-RTU 1 Profibus-DP 2 CANopen 3 DeviceNet		0	
F10.11	Profibus-DP	1 125		1	
F10.12	CANopen	1 127		1	
F10.13	DeviceNet	0 63		1	
F10.14		0.0 200.0	ms	0.0	
F10.15		CANopen 0 125K 1 250K 2:500K 3:1M DeviceNet 0 125K 1 250K 2:500K		23	
F10.16	PROFIBUS	0 PPO1 1 PPO2 2 PPO3 3 PPO4 4 PPO5			×
F10.17	PZD2			655.35	
F10.18	PZD3			655.35	
F10.19	PZD4			655.35	
F10.20	PZD5			655.35	
F10.21	PZD6			655.35	
F10.22	PZD7			655.35	
F10.23	PZD8			655.35	
F10.24	PZD9			655.35	
F10.25	PZD10			655.35	
F10.26	PZD11			655.35	
F10.27	PZD12	99.99		655.35	
F10.28	PZD13	PZD xx.xx		655.35	
F10.29	PZD14	Fxx.xx F10.17 = 0.07		655.35	
F10.30	PZD15	PZD2 F00.07		655.35	
F10.31	PZD16			655.35	
F10.32	PZD2	70.00 79.99		655.35	
F10.33	PZD3	PZD xx.xx		655.35	
F10.34	PZD4	F10.07 = 70.01 PZD2 7001H		655.35	
F10.35	PZD5	A		655.35	
F10.36	PZD6			655.35	
F10.37	PZD7	655.35 PZD		655.35	
F10.38	PZD8			655.35	
F10.39	PZD9			655.35	
F10.40	PZD10			655.35	
F10.41	PZD11			655.35	
F10.42	PZD12			655.35	
F10.43	PZD13			655.35	
F10.44	PZD14			655.35	
F10.45	PZD15			655.35	
F10.46	PZD16			655.35	

F10.47		**Profibus-DP** 0 1 2 3 4 Modbus 5 **CANopen** 0 1 2 3 4 CANopen 5 Modbus 6 **DeviceNet** 0 1 MACID 2 3 4 IO 5 DeviceNet 6 Modbus 7		000	×
F10.48					×
F11					
F11.00	1	Uxx.xx Fxx.xx F11.00 U00.00 F00.00		U00.00	
F11.01	2			U00.01	
F11.02	3			U00.02	
F11.03	4			U00.03	
F11.04	5			U00.04	
F12					
F12.00	M.K	0 1 2 3 / 4 5		1	
F12.01	STOP	0 1		1	
F12.02		0 1 2		0	●
F12.03		0 1 2		0	
F12.09		0.01 600.00		30.00	●
F12.10	UP/DOWN	0.00 0.01 500.00	Hz/s	5.00	
F12.11	UP/DOWN	0 1 2 UP/DOWN		1	
F12.12	UP/DOWN	0 1		0	
F12.13		0 1		0	●

F12.14		0 1		0	
F12.19		0.40 650.00	kW		×
F12.20		60 690	V		×
F12.21		0.1 1500.0	A		×
F12.31	LCD	0 1		0	●
F12.33	1 LED 5	0.00 99.99		18.00	●
F12.34	2 LED 1	0.00 99.99		18.01	●
F12.35	3 LED 2	0.00 99.99		18.06	●
F12.36	4 LED 3	0.00 99.99		18.08	●
F12.37	5 LED 4	0.00 99.99		18.09	●
F12.38	LCD 1	0.00 99.99		18.00	●
F12.39	LCD 2	0.00 99.99		18.06	●
F12.40	LCD 3	0.00 99.99		18.09	●
F12.41	UP/DOWN	0 1		0	
F12.44	UP/DOWN	0.0 50.0	Hz	0.0	●
F13					
F13.00	/	0 1		0	
F13.01		0 F13.02 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 X7 6 1-6 F13.02		0	
F13.02		-200.0 200.0 100.0=	%	100.0	●
F13.06		0.00 120.00	s	0.00	●
F13.08		0 F13.09 1 AI1 2 AI2 3 AI3 4 AI4( ) 5 X7 6		0	
F13.09		0.00 F00.16	Hz	50.00	●
F13.10		0.00 F00.16	Hz	0.00	●
F13.11		0.0 100.0	%	0.0	●
F13.12		0.00 50.00	Hz	1.00	●
F13.13		0.0 100.0	%	0.0	●
F13.18		0 100	%	100	
F13.19		0 1		0	

F14 F15		2			
F15.00		0.00 F00.16 0.00 650.00 F15.13=0		Hz	5.00 ●
F15.01		0.0 6500.0 F15.13=1 0 65000 F15.13=2		s	5.00 ●
F15.02		F15.01		s	5.00 ●
F15.03	2	F15.01		s	15.00 ●
F15.04	2	F15.01		s	15.00 ●
F15.05	3	F15.01		s	15.00 ●
F15.06	3	F15.01		s	15.00 ●
F15.07	4	F15.01		s	15.00 ●
F15.08	4	F15.01		s	15.00 ●
F15.09		0 F00.16	1: 50.00Hz		0

F17.						0	
		D7 D6 D5 D4 D3 D2 D1 D0					
F17.08	/	VX8 VX7 VX6 VX5 VX4 VX3 VX2 VX1				00000000	
		0 /					
		1 /					
		D7 D6 D5 D4 D3 D2 D1 D0					
F17.09	VX1 VX8	VX8 VX7 VX6 VX5 VX4 VX3 VX2 VX1				00000000	
		0 VXn VYn					
		1 F17.10					
		D7 D6 D5 D4 D3 D2 D1 D0					
F17.10	VX1 VX8	VX8 VX7 VX6 VX5 VX4 VX3 VX2 VX1				00000000	●
		0 1					
F17.11	VX1	0.000 30.000			s	0.000	●
F17.12	VX1	0.000 30.000			s	0.000	●
F17.13	VX2	0.000 30.000			s	0.000	●
F17.14	VX2	0.000 30.000			s	0.000	●
F17.15	VX3	0.000 30.000			s	0.000	●
F17.16	VX3	0.000 30.000			s	0.000	●
F17.17	VX4	0.000 30.000			s	0.000	●
F17.18	VX4	0.000 30.000			s	0.000	●
F17.19	VY1					0	
F17.20	VY2					0	
F17.21	VY3					0	
F17.22	VY4					0	
F17.23	VY5	F03				0	
F17.24	VY6					0	
F17.25	VY7					0	
F17.26	VY8					0	
		D7 D6 D5 D4 D3 D2 D1 D0					
F17.27	/	VY8 VY7 VY6 VY5 VY4 VY3 VY2 VY1				00000000	
		0 /					
		1 /					
		D7 D6 D5 D4 D3 D2 D1 D0					
F17.28		VY8 VY7 VY6 VY5 VY4 VY3 VY2 VY1				00000000	
		0 X1 X7					
		1					
F17.29	VY1	0.000 30.000			s	0.000	●
F17.30	VY1	0.000 30.000			s	0.000	●
F17.31	VY2	0.000 30.000			s	0.000	●
F17.32	VY2	0.000 30.000			s	0.000	●
F17.33	VY3	0.000 30.000			s	0.000	●
F17.34	VY3	0.000 30.000			s	0.000	●
F17.35	VY4						

F18										
F18.00			0.00					Hz	0.00	×
F18.01			0.00		F00.16			Hz	0.00	×
F18.02	PG		0.00					Hz	0.00	×
F18.03			0.00					Hz	0.00	×
F18.04			-200.0 200.0					%	0.0	×
F18.05			-200.0 200.0					%	0.0	×
F18.06			0.00 650.00 0.0 6500.0				≤ 75kW >75kW	A	0.00	×
F18.07			0.0 300.0	100.0=				%	0.0	×
F18.08			0.0 690.0					V	0.0	×
F18.09			0 1200					V	0	×
F18.14			0 65535					rpm	0	×
F18.15	UP/DOWN		0.00 2*		F00.16			Hz	0.00	×
F18.16	PID		0.0 200.00					%	0.0	×
F18.17	PID		0.0 200.00					%	0.0	×
F18.18		MWh	0 65535					MWh	0	×
F18.19		kWh	0.0 999.9					kWh	0.0	×
F18.20			0.00 650.00					kW	0.00	×
F18.21			-1.000 1.000						0.000	×
F18.22		1	X5 0/1	X4 0/1	X3 0/1	X2 0/1	X1 0/1		00000	×
F18.23		2	AI3 0/1	AI2 0/1	AI1 0/1	X7 0/1	X6 0/1		00000	×
F18.24		3	AI4 0/1	X11 0/1	X10 0/1	X9 0/1	X8 0/1		00000	×
F18.25			Y3 0/1	R2 0/1	R1 0/1	Y2 0/1	Y1 0/1		00000	×
F18.26	AI1		0.0 100.0					%	0.0	×
F18.27	AI2		0.0 100.0					%	0.0	×
F18.28	AI3		0.0 100.0					%	0.0	×
F18.29	AI4		-100.0 100.0					%	0.0	×
F18.30			-100.0 100.0					%	0.0	×
F18.31		kHz	0.00 100.00					kHz	0.00	×
F18.32		Hz	0 65535					Hz	0	×
F18.34			0 65535					m	0	×
F18.36			0.0 359.9 °						0.0	×
F18.37			0 4095						0	×
F18.38			0 200						0	×
F18.43			0 65535						0	×
F19										
F19.00			0		9-1				0	×
F19.01			0.00							

F19.07			Hz	0.00	×
F19.08			A	0.00	×
F19.09			V	0	×
F19.10		F19.04		0	×
F19.11			h	0	×
F19.12		F19.00		0	
F19.13			Hz	0.00	
F19.14			A	0.00	
F19.15			V	0	
F19.16		F19.04		0	
F19.17			h	0	

F23					
F23.00		0 1 2 3 4		0	
F23.01		0 1		0	
F23.02		0.00 F_{max}	Hz	50.00	●
F23.03		0.00 F_{max}	Hz	1.00	●
F23.04		0 1 AI1* 2 AI2* 3 AI3* 4 0 1 AI1* 2 AI2* 3 AI3*		00	
F23.05		0.01 300.00		1.00	
F23.06		0 1 AI1 2 AI2 3 AI3 4 HDI 5 701CH		0	
F23.07		0 60000	N	0	●
F23.08		0 60000	N	0	
F23.09		0 1 AI1 2 AI2 3 AI3 4 PULSE		0	
F23.10		0 1		0	
F23.11		0 1		0	
F23.12		0.00 100.00	%	0	
F23.13		0 100% 1		0	
F23.14		0 10000	mm	1	m
F23.15	1	D_0 2 D $_1$ K=K_0=F23.09 D_1<D23$_2$ K=K_1= 1	mm	9998	●
F23.16	1	0.00 100.00	%	0.00	●
F23.17	2	1 3 D_2<D $_3$ K=K_2= 2	mm	9999	●
F23.18	2	0.00 100.00	%	0.00	●
F23.19	3	2 10000 D_3<D K=K_2= 3	mm	10000	●

F23.20	3	0.00 100.00	%	0.00	●
F23.21		0.00 100.00	%	0	●
F23.22		0.00 100.00	%	0	●
F23.23		0.00 100.00	%	0	●
F23.24		0.00 50.00	Hz	1.00	●
F23.25		0.00 50.00	Hz	5.00	●
F23.27		0 1		0	
F23.28		0 300.00	Kg.m²	0	●
F23.29		0 300.00	Kg.m²	0	●
F23.30		0 60000	Kg/m³	1	●
F23.31		0 10000	mm	100	●
F23.32	0	10.00 70.00	%	20	
F23.33	1	10.00 70.00	%	40	
F23.34		0 1		0	
F23.35		0 1		0	
F23.36		0 1 PG 2 3 4 AI1 5 AI2 6 AI3 7 8:		0	
F23.37		1 10000	mm	1200	
F23.38	0	1 10000	mm	80	
F23.39	1	1 10000	mm	100	
F23.40	2	1 10000	mm	120	
F23.41	3	1 10000	mm	150	
F23.42	0	1 10000	mm	1200	
F23.43	1	1 10000	mm	1000	
F23.44	2	1 10000	mm	800	
F23.45	3	1 10000	mm	600	
F23.46		0 1		0	
F23.47	/ 0	0.001 65.535	mm	0.100	
F23.48	/ 1	0.001 65.535	mm	0.100	
F23.49	/ 2	0.001 65.535	mm	0.100	
F23.50	/ 3	0.001 65.535	mm	0.100	
F23.51	DI	1 10000		1	
F23.52		1 10000		1	X
F23.53		0.1 6500.0	m/min	15.0	
F23.54		0 1		1	
F23.55		0.00 0.01 9.00 0.01 9.00mm/		0.00	
F23.56		0 1 2		0	
F23.57		0.00 100.00	s	1.00	
F23.58		0.00 100.00	s	3.00	●
F23.59		1 10000	mm	XXXX	X
F23.60		1 10000	mm	1000	
F23.61		1 10000	mm	200	
F23.62		0 1		0	
F23.63		0 0 1 AI1 2 AI2 3 AI3 4 PULSE		1	

		5 701DH 6			
F23.64		0.0 3000.0	m/min	300.0	
F23.65		0.0 3000.0	m/min	XXXX	X
F23.66		50.00 200.00	%	105	
F23.67		50.00 200.00	%	95	
F23.68		0.00 10.00	s	1.00	
F23.69		0.00 200.00	%	XXXX	X
F23.70		0.00 200.00	%	XXXX	X
F23.71		0.000 5.000	s	0.010	●
F23.72		-99.99 99.99	m/s²	XXXX	X
F23.73		0 60000	N	XXXX	X
F23.74		0 60000	N	XXXX	
F23.75		0 1		1	
F23.76		0.000 10.000	s	0.100	●
F23.77		0.00 300.00	s	15.00	●
F23.78		0.00 300.00	s	15.00	●
F23.79		0.001 65.535	mm	XXXX	X
F23.80		0 1		0	●
F23.81		0.00 600.00	Hz	1.00	●
F23.82		0 10000	m	0	
F23.83		0 1		0	
F24					
F24.00		0 1 2 AI1 3 AI2 4 AI3 5 HDI		0	
F24.01		0.00 10.00	V	5.00	●
F24.02	/	0.00 60.00	S	8.00	●
F24.03	/	0.00 60.00	S	1.00	●
F24.04	/	0 / 1 0.00V /		0	
F24.05	/	0 AI1 1 AI2 2 AI3 3 HDI 4 200.0% 5 200.0% 6 PID 7005H		0	
F24.06	PID	0 1		0	
F24.07	PID	0 1		0	
F24.08	PID	0.00 100.00	%	20.00	●
F24.09	PID	0 PID 1 2 3 4		0	
F24.10	1	0.00 100.00		20.00	●
F24.11	1	0.00 30.00	s	2.00	●
F24.12	1	0.000 30.000	ms	0.000	●
F24.13	2	0.00 100.00		20.00	●
F24.14	2	0.00 30.00	s	2.00	●
F24.15	2	0.000 30.000	ms	0.000	●

F24.16	PID1	0.00 100.00	%	20.00	●
F24.17	PID2	0.00 100.00	%	80.00	●
F24.18		0 1		0	
F24.19		0.0	m/min	100.0	●
F24.20		0.01 30.00	s	2.00	●
F24.21		0 1		0	
F24.22	PID	0.01 30.00	s	5.00	●
F24.23	PID	0.00 10.00	V	0.50	●
F24.24	PID	0.00 10.00	V	9.50	●
F24.25	PID	0.01 30.00	s	0.10	●
F24.26	PID	0.00 100.00	%	5.00	●
F24.27	PID	0.00 100.00	%	0.00	●
F24.28	PID	0.00 100.00	%	5.00	●
F24.29	PID	0.000 30.000	s	0.000	●
F24.30		E43 0 1 2 E21 0 1 2		00	
F24.31	PID	0.00 100.00%(0.00%:)	%	0.00	●
F24.32	PID	0.00 200.00	%	100.00	
F24.33	PID	-100.0 100.0	%	XXXX	X
F24.34	PID	1~1000	ms	1	●