

31010130
2020-10
101

HGD610



4
5
6
7

LC/RC

:



1
2
3

R S T

U V W



1
2



1
2

R S T

10

3
4



1
2

» I NÁ~ (æò È V I ð

\$AAî 7, ' £ ½

/

5M

500V

HGD610

HGD610

1- 1

1- 1 HGD610

		kW	A
	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
380 415V	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	*1	



2- 1

2- 1

HGD610

30

4

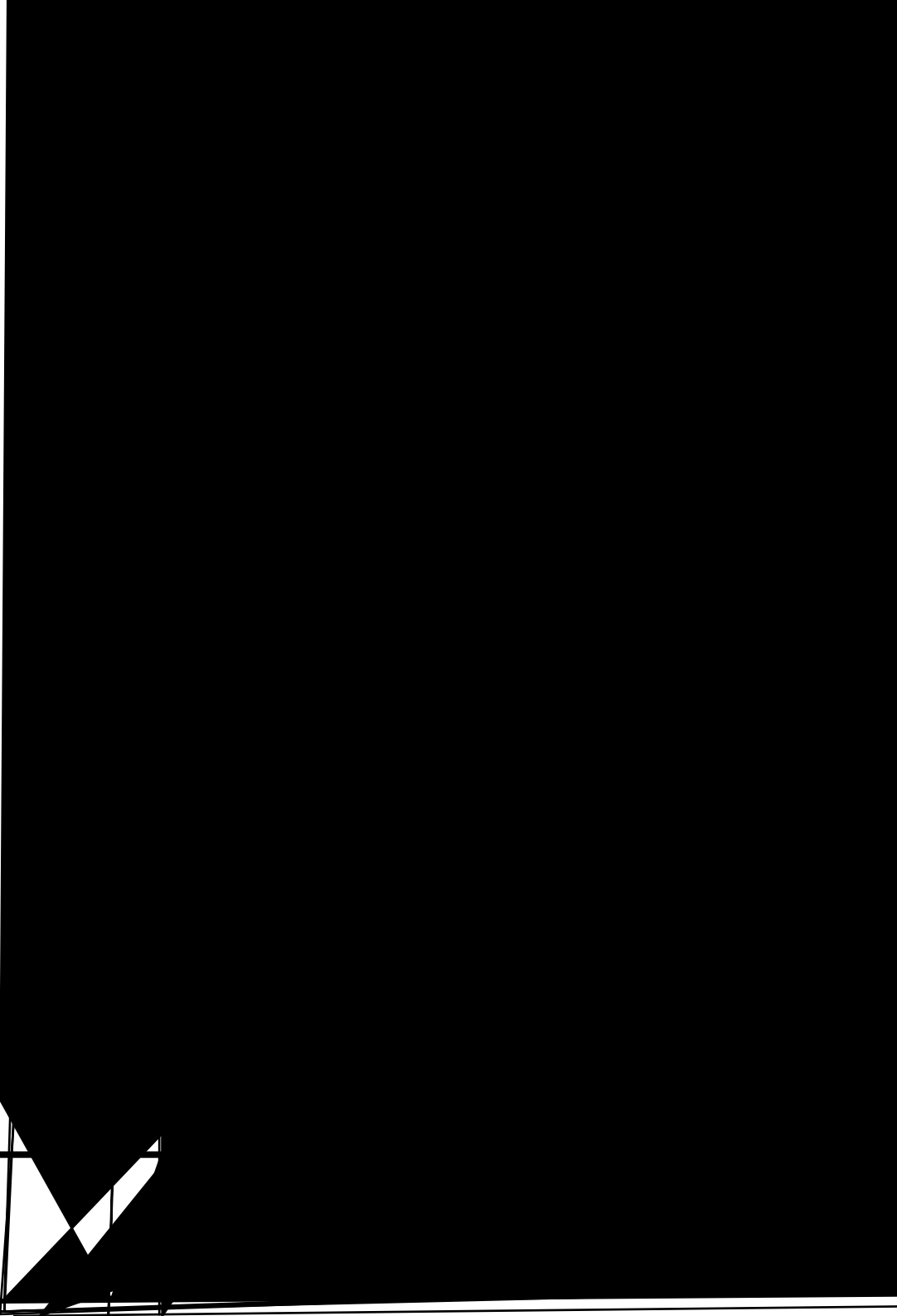
12

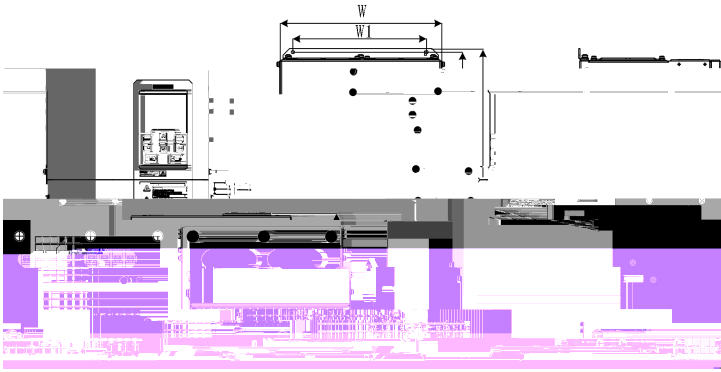
2-1

2-2

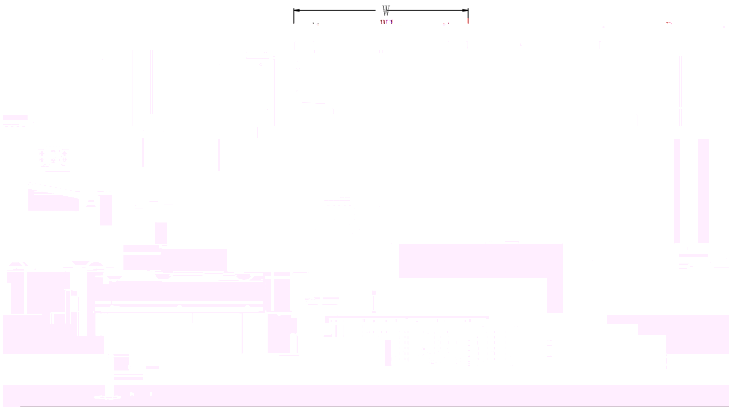
114.5± 0.1(L)*71± 0.1 (W)mm

1.2





c 22kW 75kW



d 90kW 400kW



e 450kW 560kW

2- 2 HGD610

	W	W1/W2	H	H1	H2	D	D1	D2	d	
HGD610-0R7-3B										
HGD610-1R5-3B	130	115/ 120	228	220	219	153	108	75	5	(b)
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										
HGD610-015-3B	180	150	368	353	343	210	165	136	7	(b)
HGD610-018-3B										
HGD610-022-3/3B										
HGD610-030-3/3B	250	200	484	470	440	222	150	--	9	(c)
HGD610-037-3/3B										
HGD610-045-3/3B										
	315	220	560	546	513	250	180	--	9	

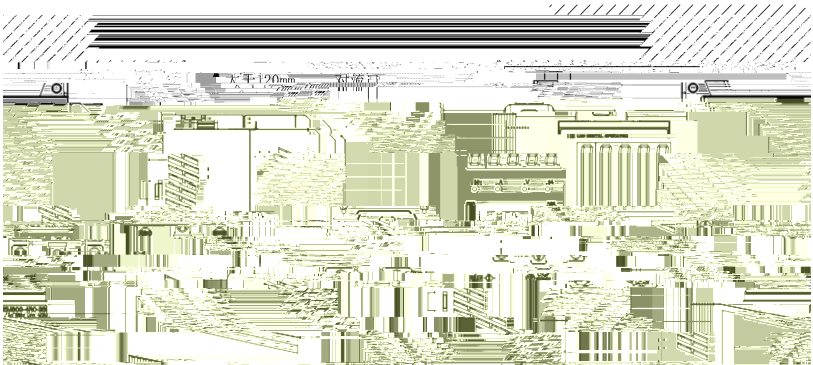
- 1
- 2 -10°C 40°C
- 3 90%RH
- 4
- 5
- 6
- 7
- 8
- 9

HGD610

()

2- 2

HGD610 450kW



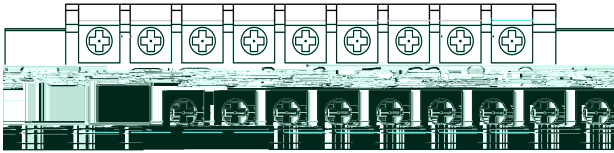


GD610

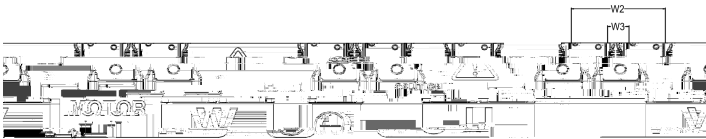
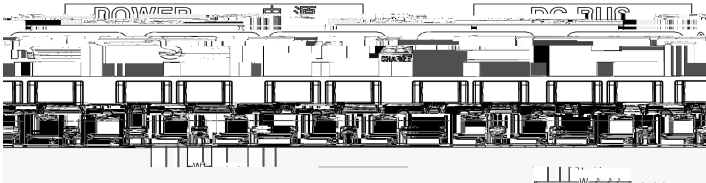
GD610

0 5e

3- 2



a)



b) 90kW

3- 2

3- 1 90kW 400kW

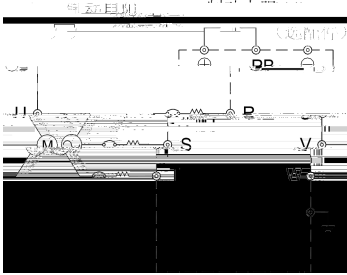
	W	V1	V2	V3
HGD610-090 132	33	-	-	-
HGD610-160 200	39	-	-	-
HGD610-220 280	88	22	88	22
HGD610-315 400	104	26	101	23

- 1 90kW
- 2 220kW

3- 2

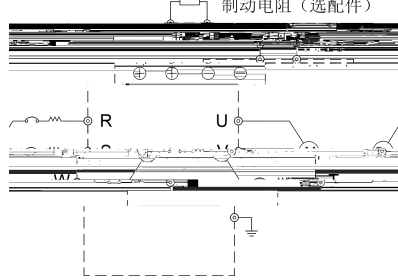
R S T	
U V W	
⊕ ⊖	
⊕ PB	⊕ PB
⊕	

HGD610-0R7-3B HGD610-075-3B



3-3

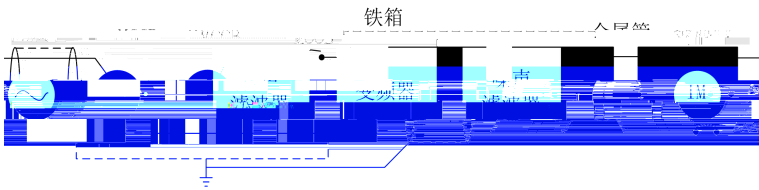
HGD610-022-3 HGD610-560-3



3-1

3-4

HGD600



3-4

HGD600

8

+ PB

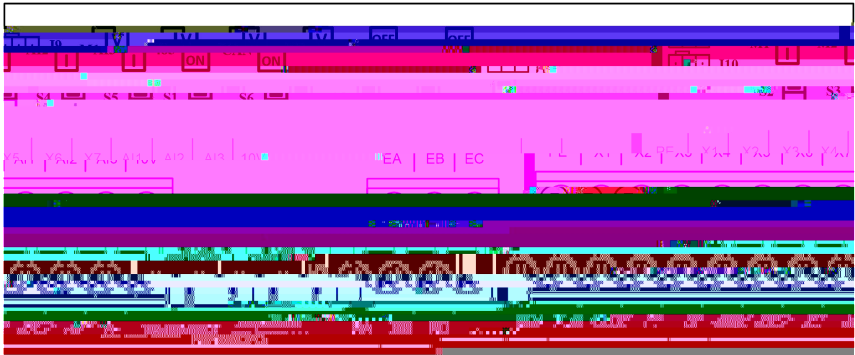
+ -

+ -

PB+ PB-

BR100

3-5



3-5

J9 J10

3- 3

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

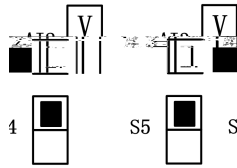
	M-GND	1	DC 0 10V/0 20mA	S2
	M2-GND	2	DC 0 10V/0 20mA	S3
	Y1-COM		DC48V 50mA	
	Y2-COM		DC48V 50mA	100kHz <5 k
	R1 EA-EB-EC		EA-EC: EB-EC:	
	R2 RA-RB-RC		RA-RC: RB-RC:	
	A+	RS- 485	485	
	A-		485	
	PE			

AI 1 AI 2 AI 3

AI 2 AI 3

S4 S5

3-6



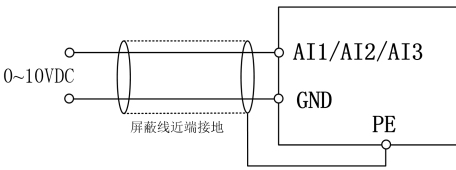
3- 6 S4 S5

AI 1 AI 2 AI 3

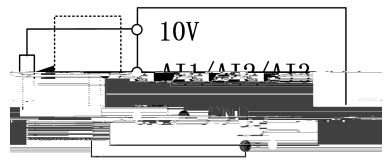
3-7-a

AI 1 AI 2 AI 3

3-7-b



a



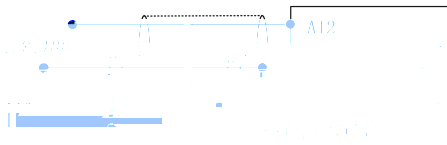
b

3-7 AI 1 AI 2 AI 3

AI 3

AI 3

S5



3-8 AI 2 AI 3

HGD610

PLC

X1 X7

PLC

(NPN)

(PNP)

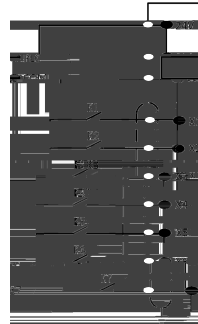
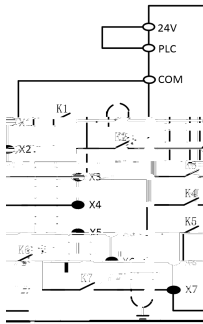
X1 X7

A NPN

+24Vdc

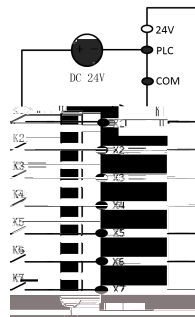
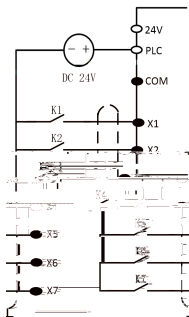
B PNP

+24Vdc



C NPN

D PNP



3-9

24V PLC
















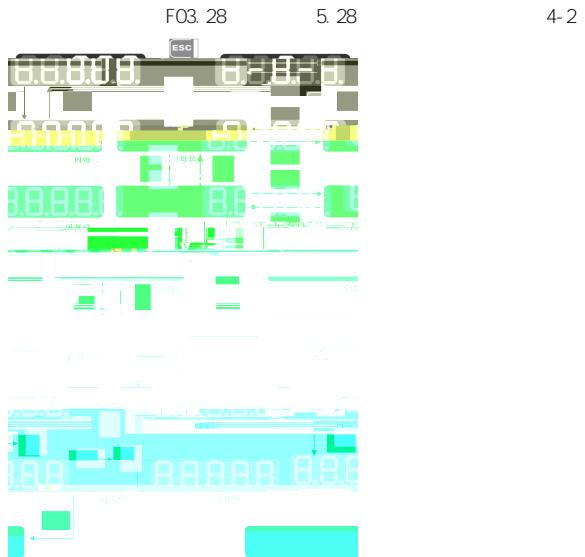
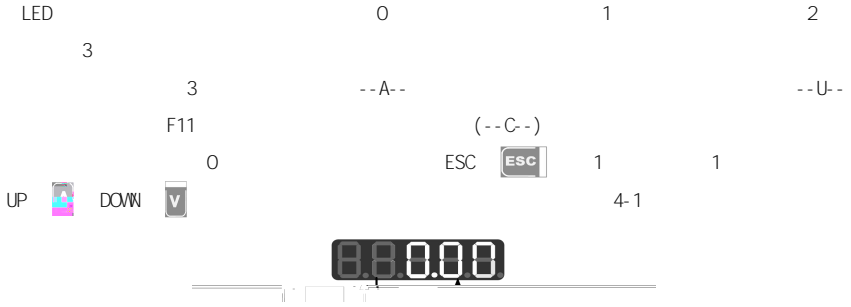
LED



4- 1 LED

LED

/		
		
		
		F12 00
		
		
	/	
		
		
		
		
		F00. 02
		
		



4-2 F03. 28-5. 28

ENTER





F12.33 F12.37

5

0

F12.03 1

ENTER

" UP"

0

F12.03 2

" DN"

0

1

" No DN"

ECS

2

CPUA

" go oN"

ENTER

ESC

3

MK

MK

F12.00

/

RUN

STOP/RESET

F12.00 5 MK

F01.34

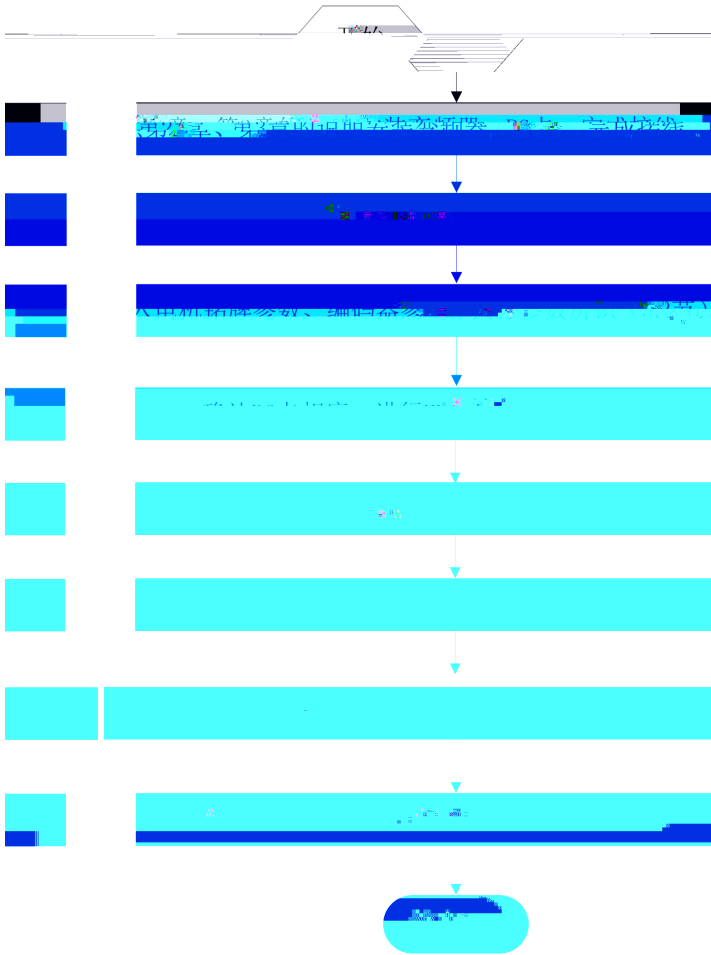
RUN

" TUNE"

F01.34

0

HGD610



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

MK

MK

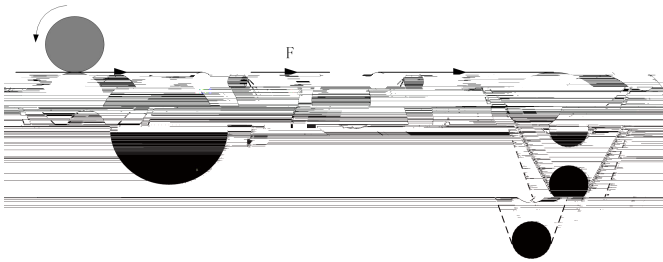
F00. 01=0 WF

PG

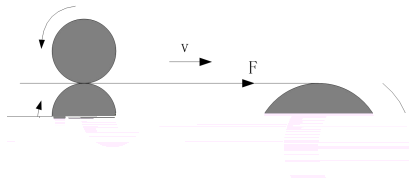
HGD610

F23. 00

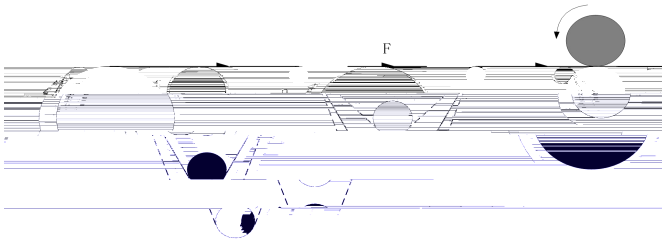
5-1 5-8



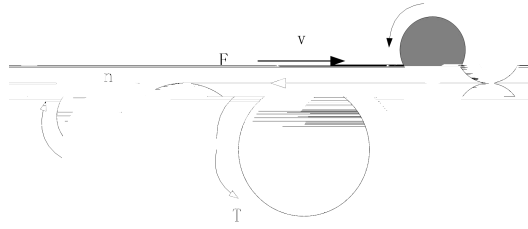
5-1



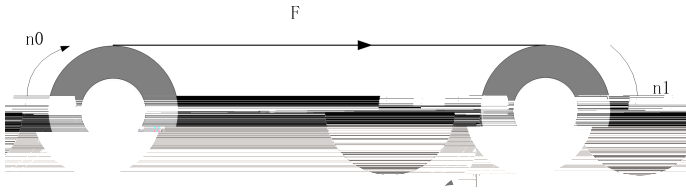
5-2



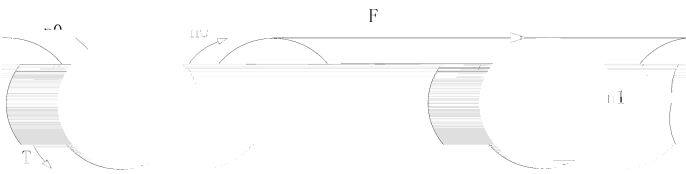
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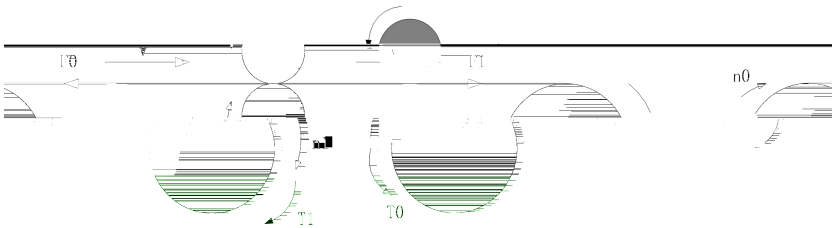
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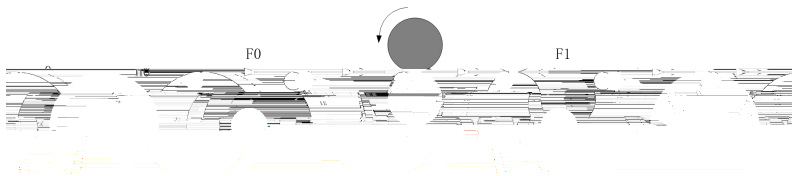
5-5



5-6



5-7



5-8

F23.00 = 0

HGD610

F13

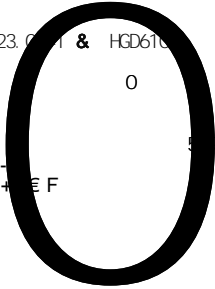
F13.00

= 1

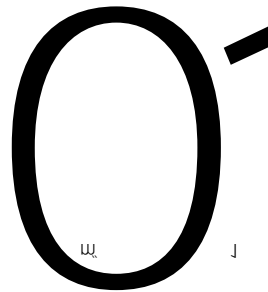
F23.00 = 1

F23.00 & HGD610

01 F13.00 /



БПД .0 ь б 0V' • @



3 F24 PID

.....

5. 5. 4 F23.00 = 3

1	F23. 00=4	F13. 00=1			
2		F23. 01			
3	F23. 02		F23. 03		F23. 04
4	F23. 05		F23. 63		F23. 64
	"		5. 3. 6	"	"
5	F23. 54		: F23. 54=1		

		4		5
		5		
		1.		
E13		2 V/F	V/F	1.
				2 V/F
		3		3
E14		1.		1.
		1.		1. STOP/RESET
E15		2		2
				Ox41
		1.		1.
E16				F10.03 0.0Ä
		2		F10.03
				2
				3
				1.
E17				2
		1.		1.
		2		
E18		3		2
		4	3	3
		5		4
E19				1.
		1.		1.
E20		2		2
		3		3
				SS
		1. PI D	F09.24	1.
E21	PI D		F09.25	2
				3.
		1.	PG	1. PG
		2 PG		2 a a
E22		3 PG	F01.24	
		4		
		5		

					1
E26		1.			2
		2.			3
		3.			
					F07. 22
					F07. 23
E27					
E28					
E29		1.	SPI		1.
					2.
E33	CANopen	1.			1.
E34	Devi ceNET	1.		Devi ceNET	1.
			DC24V		
E35	Devi ceNET BUS-OFF	1.	Devi ceNET	CAN_H	CAN_L
					1.
E36	Devi ceNET MAC ID	1.			1.
E37	Devi ceNET I/O	2.			1.
			I/O		
E38	Devi ceNET I/O	1.	I/O		1.
E39	Profi bus-DP	1.			1.
E40	Profi bus-DP	1.			1.
E41	Profi bus-DP I/O		DP		DP
E43					1.



6.2

6.1

6.2.1

UP DOWN

F12.02 1 2

F12.02 0

6.2.2

RUN

FOO.02

FRS COM

FRS COM

0

RUN F/R=ON

FOO.02

FRS=ON

FRS=OFF

0

FOO.21 1

6.2.3

6.2.4

F15.32

LED 10

7-1

7- 1

PCB		4 6kg/cm ²
	2	

7- 2

	2 3
	4 5

40

80%

12

8.1

	Pb	Px	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	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-I/O-A1	I/O	4 : X8 X11 1 Y3 F03 04 1 AI 4 -10V +10V PT100/PT1000	

EC-CMC1	CANopen	125kbps	250kbps	500kbps	1Mbps
EC-CMD1	DeviceNet	125kbps	250kbps	500kbps	
EC-CMP1	Profibus-DP				

PG

HGD610	PG	PG
EC-PG-01	PG	
EC-PG-02	PG	
EC-PG-D1	PG	UWW
EC-PG-D3	PG	UWW
EC-PG-U1	UWW PG	UWW
EC-PG-R1	PG	

9

HGD610

"

"

6-1 20

F18

F19

3

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

0

x

FOO								
FOO.01	1	0	V/F	WF			0	
		1		SVC				
		2		FVC				
FOO.02		0		LOC/REM			0	
		1		LOC/REM				
		2		LOC/REM				
FOO.03		0	RUN	F/R	/		0	
		1	RUN	F/R				
		2	RUN	Xi	F/R			
		3	RUN	Xi	F/R	/		
FOO.04	A	0		FOO.07			0	
		1	AI 1	2 AI 2	3 AI 3			
		4	AI 4()	5	X7			
		-"						
FOO.05	B	0		FOO.07			0	
		1	AI 1	2 AI 2	3 AI 3			
		4	AI 4()	5	X7			
		-"		10				

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 AI 1* 2 AI 2* 3 AI 3* 4 AI 4* 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 AI 1 2 AI 2 3 AI 3 4 AI 4() 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	

HGD610

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		0
	2				
F01.01	0.10	650.00			kW
F01.02	50	2000			V
F01.03	0.01	600.00		75kW	A
	0.1	6000.0		75kW	
F01.04	0.01	600.00			Hz
F01.05	50	60000			rpm
F01.06	0	Y 1			
F01.24	0	ABZ	1	UWV	0
	2	UWV	4		

		D7	D6	D5	D4	D3	D2	D1	D0	
F02 15	1	*	X7	X6	X5	X4	X3	X2	X1	*0000000
		0			/					
		1			/					
		D7	D6	D5	D4	D3	D2	D1	D0	
F02 16	2	X11	X10	X9	X8	AI 4	AI 3	AI 2	AI 1	00000000
		0			/					
		1			/					
F02 17		0	100	0	n	n	ns			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		-								

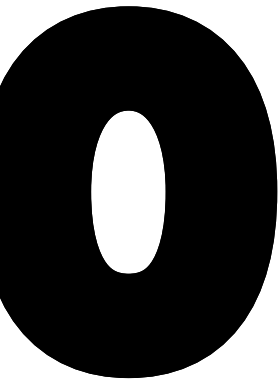


EOS 50

Λ

Λ

1/5
1/5
1/5



HGD610

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	M	0										0	
F03.22	M̅	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	M	-100.0	100.0							%	0.0		
F03.28	M	-10.00	10.00								1.00		
F03.29	M̅	-100.0	100.0							%	0.0		
F03.30	M̅	-10.00	10.00								1.00		
F03.31		D7	D6	D5	D4	D3	D2	D1	D0		00000		
		*	*	*	Y3	R2	R1	Y2	Y1				
		0				1							

0		41	PI D
1	RUN	42	PI D
2	F/R	44	PI D /
3		45	
4	(FJOG)	46	
5	(RJOG)	47	
6	UP	48	
7	DOWN	50	
8	UP/DOWN	51	
9		52	AI 1
10		53	AI 2
11	1	54	AI 3
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	AI 2
1		10	AI 3
2		11	AI 4
3		12	100.00% 0.00%
4		30	
5		31	
6		32	
7		33	
8	AI 0 0 0		

F04

F04.00 0 1

0



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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		0	
F04.27		0	1		0	
F04.30		0	1		0	
F05						
V/F						
F05.00	V/F	0	V/F 1 V/F		0	
		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*			
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	s	0.050	
F06.02	ASR_P2	0.00	100.00		10.00	
F06.03	ASR_T2	0.000	30.000	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		0	
		1	AI 1 2 AI 2 3 AI 3			
		4	AI 4()			
		5				
		6	AI 2 AI 3			
		7	AI 2 AI 3			

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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

VC - PJ

0 00 00

0 0

EO PJJ



Profibus-DP

- 0
- 1
- 2
- 3
- 4
- 5

Modbus

CANopen

- 0
- 1
- 2
- 3
- 4
- 5
- 6

CANopen

Modbus

Devicenet

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7

MAC ID

IO

Devicenet

Modbus

F10.47

000 x

F10.48

x

F11

F11.00	1				U00.00
F11.01	2	Uxx.xx		Fxx.xx	U00.01
F11.02	3	F11.00		U00.00	U00.02
F11.03	4		F00.00		U00.03
F11.04	5				U00.04

F12

F12.00	MK J%724-	0	1	2	
		3	4		1
		5			
F12.01	STOP	0			1
		1			

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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	LED	1 5	0.00 99.99		18.00	
F12 34	LED	2 1	0.00 99.99		18.01	
F12 35	LED	3 2	0.00 99.99		18.06	
F12 36	LED	4 3	0.00 99.99		18.08	
F12 37	LED	5 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 1 AI 1 2 AI 2 3 AI 3 4 AI 4() 5 6 1-6	F13.02 X7 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 AI 1 2 AI 2 3 AI 3 4 AI 4() 5 6	 X7		0	
F13.09		0.00	FOO.16	Hz	50.00	
F13.10		0.00	FOO.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 **2**
F15

F15.00		0.00	F00.16	Hz	5.00
		0.00	650.00 F15.13=0		
F15.01		0.0	6500.0 F15.13=1	s	5.00
		0	65000 F15.13=2		
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

F17.07 VX8

0

F17.08

D7 D6 D5 D4 D3 D2 D1 D0

VX8 VX7 VX6 VX5 VX4 VX3 VX2 VX1

00000000

0 /
1 /

F17.09 VX1 VX8

D7 D6 D5 D4 D3 D2 D1 D0

VX8 VX7 VX6 VX5 VX4 VX3 VX2 VX1

00000000

0 VXn Wn

1 F17.10

F17.10 VX1 VX8

D7 D6 D5 D4 D3 D2 D1 D0

VX8 VX7 VX6

00000000

AI A

E11



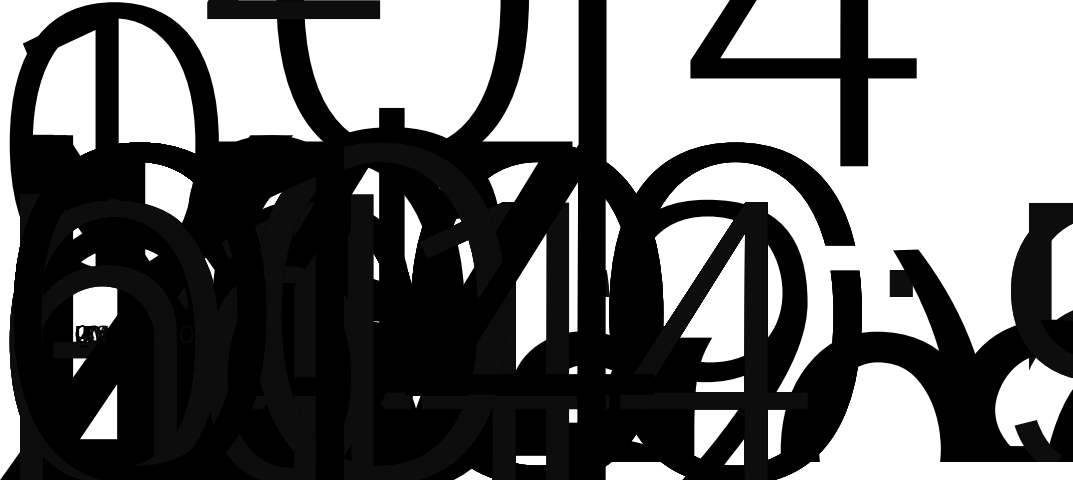
F18												
F18.00			0.00							Hz	0.00	×
F18.01			0.00						F00.16	Hz	0.00	×
F18.02	PG		0.00							Hz	0.00	×
F18.03			0.00							Hz	0.00	×
F18.04			-200.0	200.0						%	0.0	×
F18.05			-200.0	200.0						%	0.0	×
F18.06			0.00	650.00						A	0.00	×
			0.0	6500.0					75kW >75kW			
F18.07			0.0	300.0	100.0	0=				%	0.0	×
F18.08			0.0	690.0						V	0.0	×
F18.09			0	1200						V	0	×
F18.14			0	65535						r pm	0	×
F18.15	UP/DOWN		0.00	2*					F00.16	Hz	0.00	×
F18.16	PI D		0.0	200.00						%	0.0	×
F18.17	PI D		0.0	200.00						%	0.0	×
F18.18		NWh	0	65535						NWh	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	X4	X3	X2	X1				00000	×
			0/1	0/1	0/1	0/1	0/1					
F18.23		2	AI 3	AI 2	AI 1	X7	X6				00000	×
			0/1	0/1	0/1	0/1	0/1					
F18.24		3	AI 4	X11	X10	X9	X8				00000	×
			0/1	0/1	0/1	0/1	0/1					
F18.25			Y3	R2	R1	Y2	Y1				00000	×
			0/1	0/1	0/1	0/1	0/1					
F18.26	AI 1		0.0	100.0						%	0.0	×
F18.27	AI 2		0.0	100.0						%	0.0	×
F18.28	AI 3		0.0	100.0						%	0.0	×
F18.29	AI 4		-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								0	×
F19.01			0.00	0.5	3				9-1			

F19.07		Hz	0.00	×
F19.08		A	0.00	×
F19.09		V	0	×
F19.10	F19.04		0	×
F19.11		h	0	×

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HGD610

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. m ²	0
F23. 29		0	300.00		Kg. m ²	0
F23. 30		0	60000		Kg/m ³	1
F23. 31		0	10000	5	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
		0				
		1	PG			
		2				
F23. 36		3				0
		4	Al 1	5 Al 2	6 Al 3	
		7				
		8				
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
F23. 53		0.1	6500.0		m ² /m ³	15.0
F23. 54		0				1
		0				
F23. 55		0.00				0.00
		0.01	9.00	0.01	9.00mm ²	
F23. 56		0				0
		1				2
F23. 57		0.00	100.00		s	1.00
F23. 58		0.00	100.00		s	3.00
F23. 59		2000000			2 mm	

5 701DH 6

F23. 64	0.	3000. 0	m/mi n	300. 0	
F23. 65	0.	3000. 0	m/mi n	XXXX	X
F23. 66	50.	200. 00	%	105	
F23. 67	50. 0	200. 00	%	95	
F23. 68	0. 00	200	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	½
F23. 72	-99. 99	99. 99	m/s ²	XXXX	X
F23. 73	0	60000	N	XXXX	X
F23. 74	0	60000	N	XXXX	
F23. 75	0	2			6

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F24. 16	PI D1	0.00	100.00		%	20.00
F24. 17	PI D2	0.00	100.00		%	80.00
F24. 18		0		1		0
F24. 19		0.0			m ² /m ³ n	100.0
F24. 20		0.01	30.00		s	2.00
F24. 21		0		1		0
F24. 22	PI D	0.01	30.00		s	5.00
F24. 23	PI D	0.00	10.00		V	0.50
F24. 24	PI D	0.00	10.00		V	9.50
F24. 25	PI D	0.01	30.00		s	0.10
F24.20	PI D 24. 26 m ³					