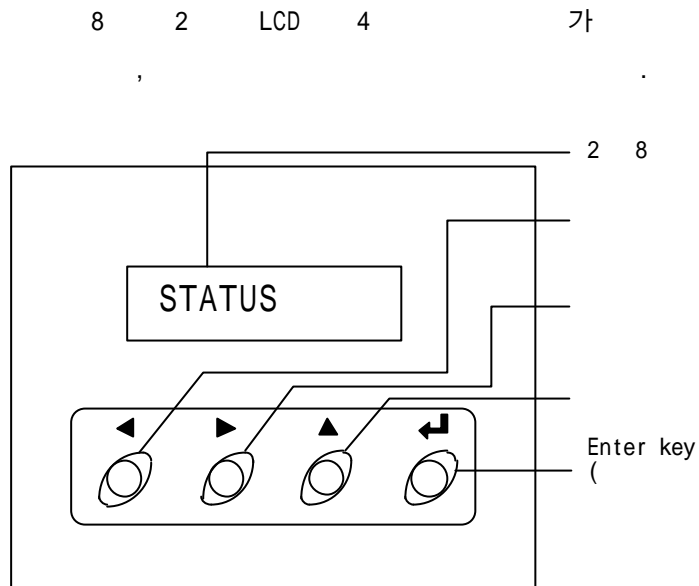


5

5.1 LCD



(◀ ▶)

ENTER (↵)

(RPM)

, STATUS

RPM

가

1) (◀ ▶) STATUS 가

2) ENTER (↵) STATUS

3) (◀ ▶) RPM 가

4) ENTER (↵) RPM DISPLAY

(◀ ▶) EXIT

ENTER (↵)

STATUS

가

()

ENTER (↵)

DISPLAY

0

(▲)

가

가 1

가

가 9

(▲)

0

(◀ ▶)

(▲)

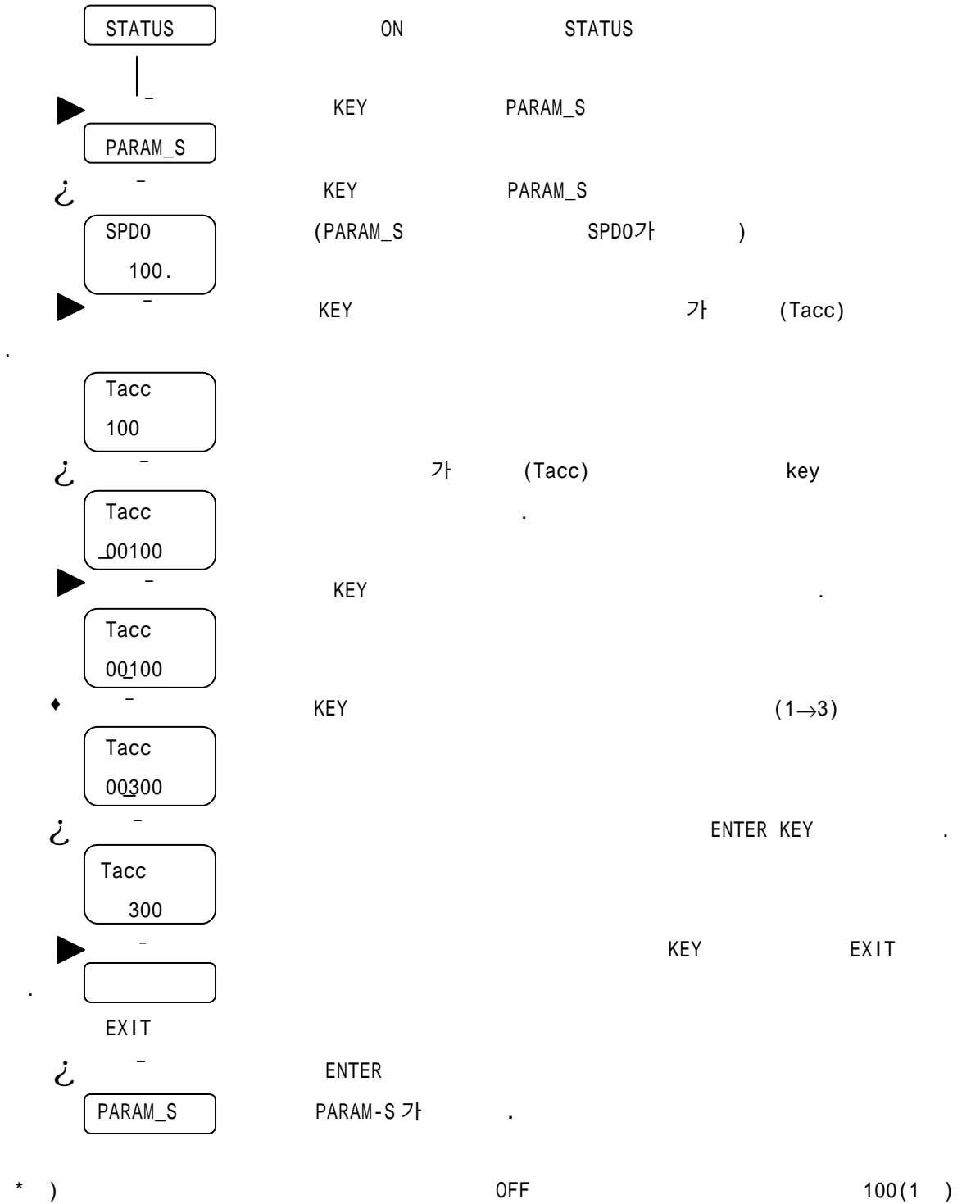
ENTER (↵)

"OK?"

ENTER (↵)

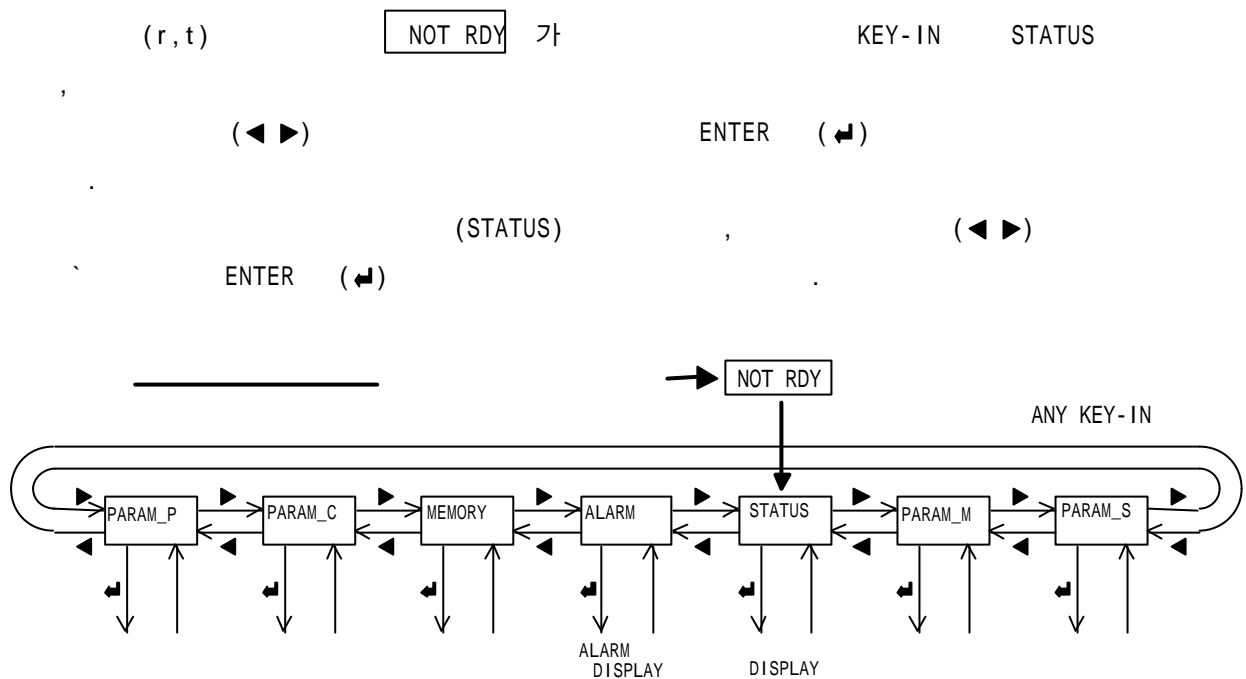
ENTER (↵)

○ PARAM_S 가 (Tacc) 100(1) → 300(3) key



SAVE KEY "WRITING...." MEMORY

5.2



5.3

5.3.1

4

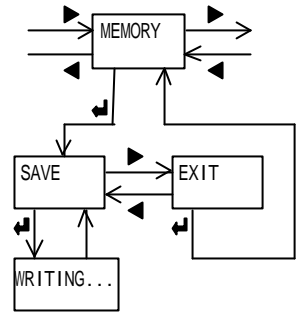
- (1) , (PARAM_M)
- (2)
- (PARAM_S)
- (3)
- (PARAM_P)
- (4) (PARAM_C)
- , (MEMORY)가 .

(!)

SVONEN

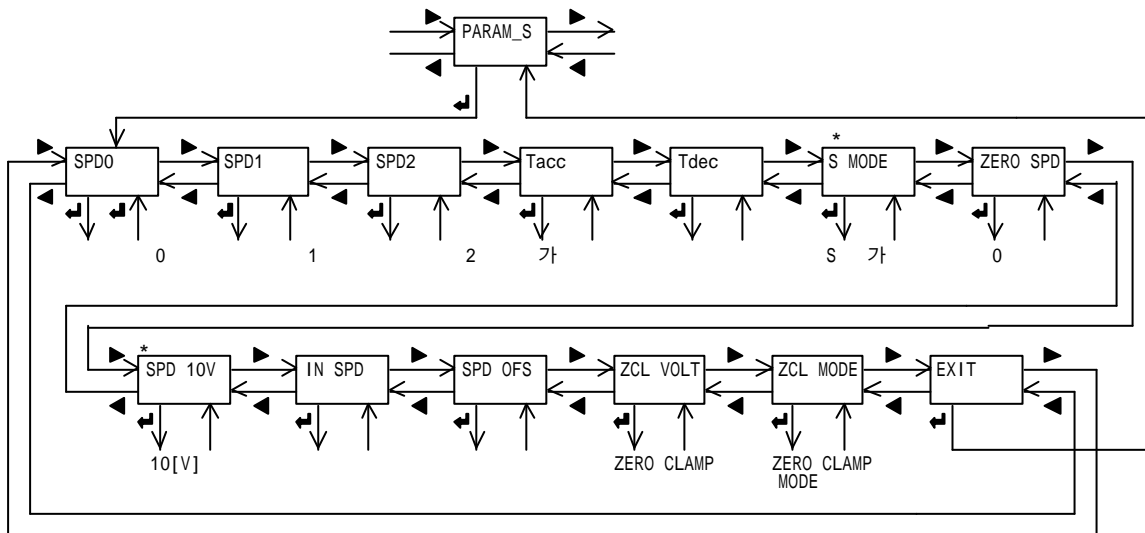
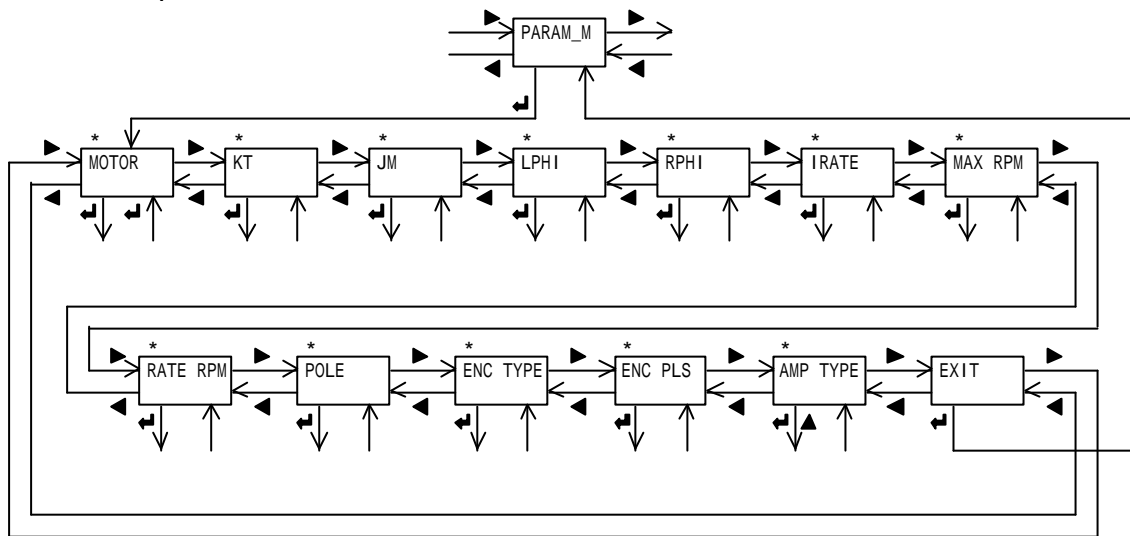
OFF

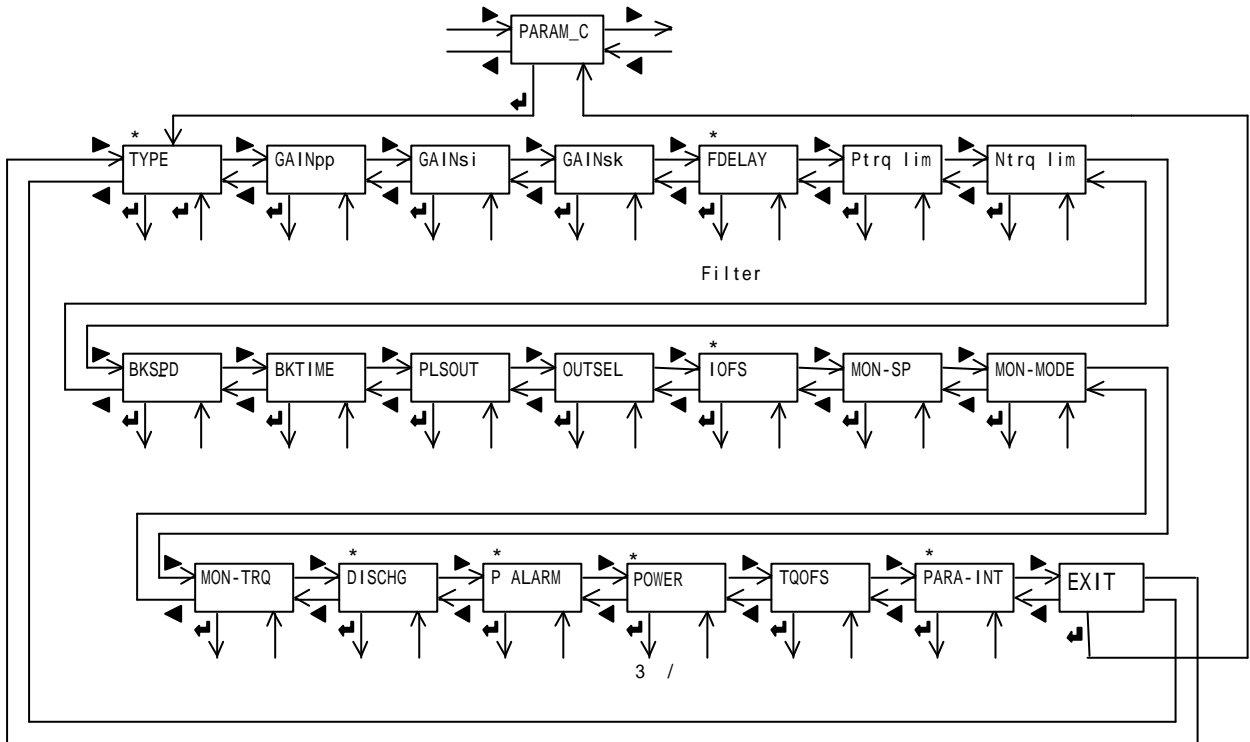
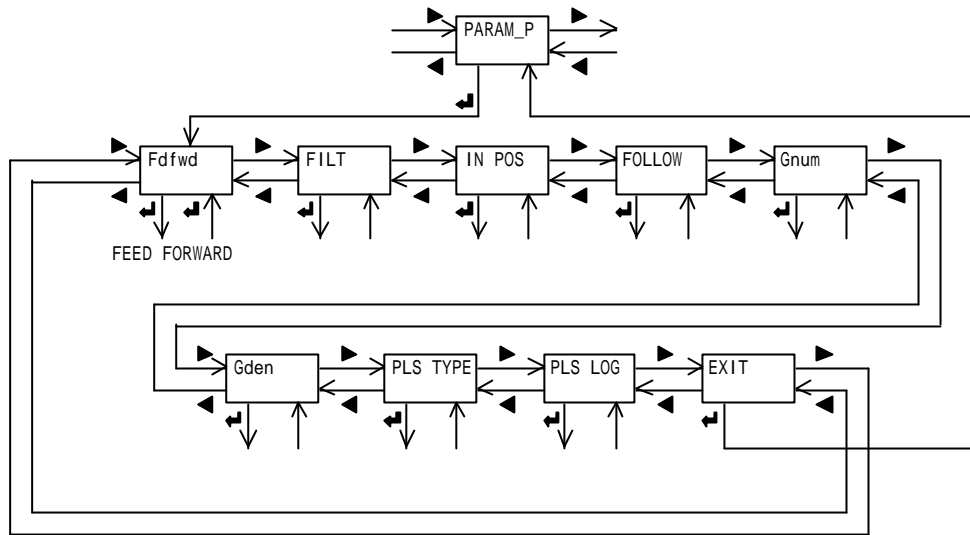
가



(MEMORY)

(SAVE)





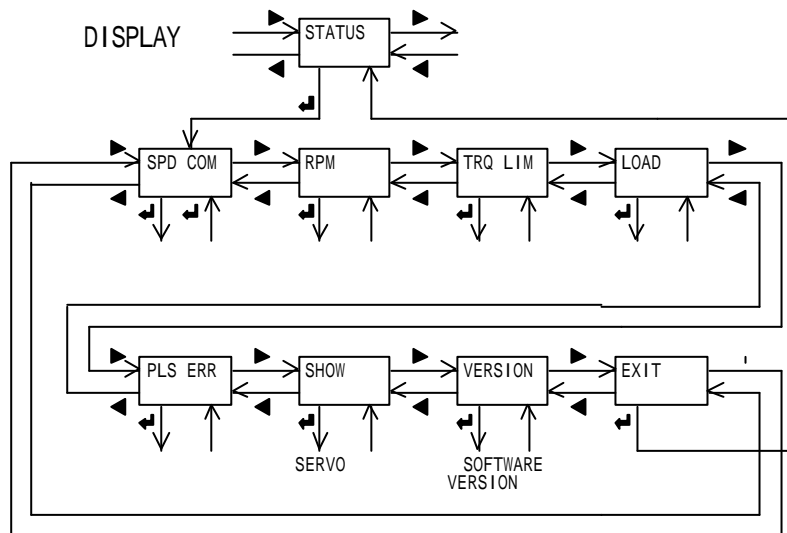
(!) *

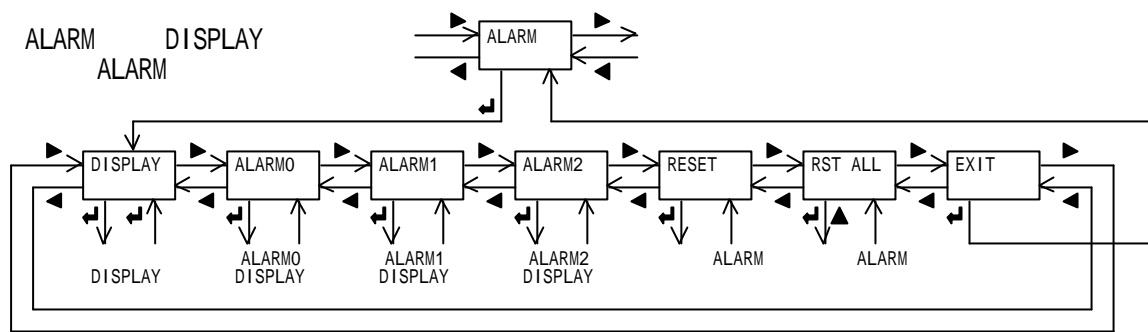
SVONEN OFF

가

5.3.2

- (1) 2 가 .
 (STATUS)
 (2) ALARM ALARM ALARM
 (ALARM)





5.4

5.4.1 (PARAM_M)

*MOTOR : : 0, 10 ~ 45

0

KT, JM, LPHI, RPHI, IRATE, MAX RPM,

RATE RPM, POLE

AC SERVO MOTOR	USAFED-05F	USAFED-09F	USAFED-13F	USAFED-20F	USAFED-30F	USAFED-44F
	10	11	12	13	14	15
AC SERVO MOTOR	FMA-TF05	FMA-TF09	FMA-TF13	FMA-TF20	FMA-TF30	FMA-TF44
	20	21	22	23	24	25
AC SERVO MOTOR	FMA-KF08	FMA-KF10	FMA-KF15	FMA-KF22	FMA-KF35	FMA-KF50
	30	31	32	33	34	35
AC SERVO MOTOR	FMA-LF03	FMA-LF06	FMA-LF09	FMA-LF12	FMA-LF20	FMA-LF30
	40	41	42	43	44	45

*#KT : : 1 ~ 32767

[kgf-cm/A] 100

[kgf-cm/A]

1 [N-m/A] → 10.2 [kgf-cm/A]

$1 \text{ [kg-cm}^2] \rightarrow 1.02 \text{ [gf-cm-sec}^2]$
 $1 \text{ [kg-m}^2] \rightarrow 1.02 * 10^4 \text{ [gf-cm-sec}^2]$

```
*ENC TYPE :                               : 0 ~ 1
```

	INCREMENTAL ENCODER (A LEAD)	INCREMENTAL ENCODER (B LEAD)
	0	1
Motor	LG TF, KF, LF Series	USAFED Series

(_____ : _____) ENTER(↵)
가 _____ .)

SERVO	FDA-3005	FDA-3010	FDA-3015	FDA-3020	FDA-3030	FDA-3045
	0	1	2	3	4	5

5.4.2 (PARAM_S)

SPD0 : 0 : 0 ~ 6500
0 [r/min] .

SPD1 : 1 : 0 ~ 6500
1 [r/min] .

SPD2 : 2 : 0 ~ 6500
2 [r/min] .

Tacc : 가 : 0 ~ 5000
가 [sec] 100
.

Tdec : : 0 ~ 5000
[sec] 100
.

*S MODE : S 가 : 0 ~ 1
0 가 , 1 S 가 .
 , 가 .

ZERO SPD : 0 : 0 ~ 6500
0 [r/min] .

*SPD 10V : 10[V] : 0 ~ 6500
10[V] [r/min] .

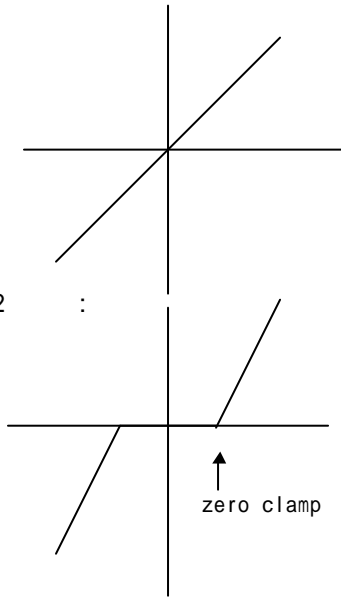
IN SPD : : 0 ~ 6500
IN SPD [r/min] .

SPD OFS : : -2047 ~ 2047
A/D LSB(Least Significant
Bit) .

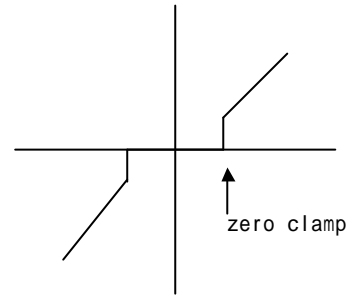
ZCL VOLT : ZERO CLAMP mv 0 ~ 1000mv .
mv A/D converter 5mv .

ZCL MODE : ZERO CLAMP MODE

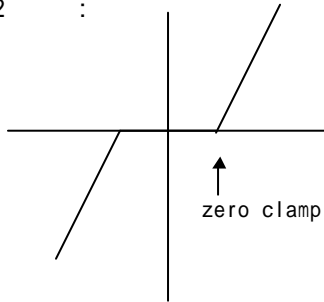
● 0 : ZERO CLAMP



● 1 :

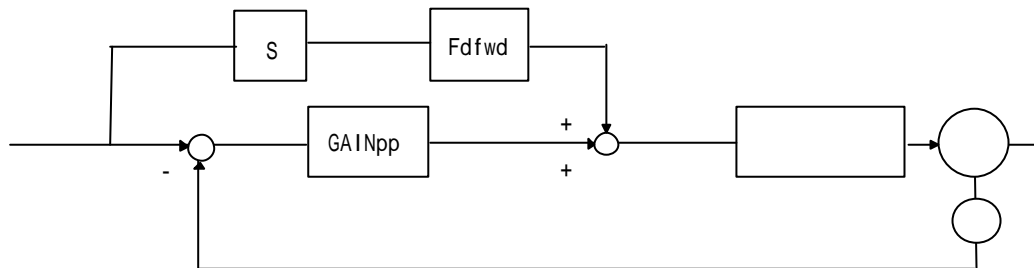


● 2 :



5.4.3 (PARAM_P)

Fdfwd : Feed Forward : 0 ~ 100
Feed Forward [%]

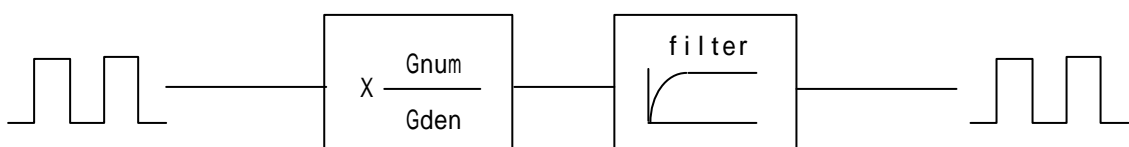


FILT : : 0 ~ 10000
[msec]

1

0

가



IN POS : : 0 ~ 6500
 IN POS 4

FOLLOW : : 0 ~ 32767
 4

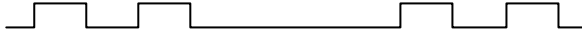

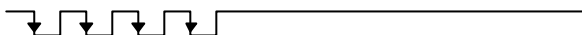
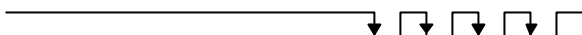

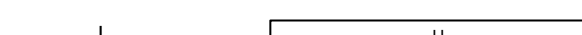

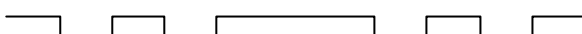


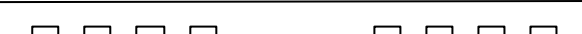
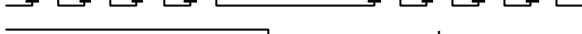
Gnum : : 0 ~ 1000
 ()

Gden : : 0 ~ 1000
 ()
 () ☐ Gnum/Gden 가 0.05 ~ 20
☐ 4

PLS TYPE : : 0 ~ 2

	LEAD PULSE (F), LAG PULSE (R)	PULSE (F), PULSE (R)	PULSE (F), (R)
	0	1	2
()	F 가 LEAD , EDGE R 가 LEAD , EDGE	F FALLING EDGE R FALLING EDGE	R 가 0 , F FALLING EDGE R 가 1 , F FALLING EDGE

PLS LOG : : 0 ~ 1
 0 : (Negative Logic)
 1 : (Positive Logic)

	PULSE TYPE		
	0	PF  PR 	A +B
	1	PF  PR 	
	2	PF  PR 	+
	0	PF  PR 	A +B
	1	PF  PR 	
	2	PF  PR 	+

5.4.4
(PARAM_C)

*TYPE :
: 0 ~ 1

	0	1

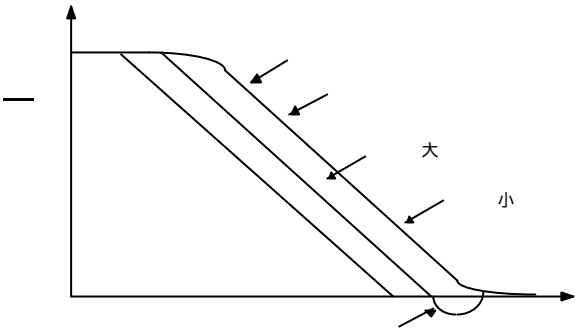
GAINpp :
gain
gain
: 1 ~ 100
[sec⁻¹]

30
가
,

,
가
가
. GAINsk
,
가

GAINpp (
)

J_L / J_M	0	0 ~ 5	5
	50	50 ~ 20	10



< > gain

gain

(pulse) = gain

GAINsi : gain : 1 ~ 100

가

GAINsk 가 가 , 가

가

가 .. 가

GAINsi ()

J_L / J_M	0	1	3	5 ~
	20	20	30	40

GAINsk : gain : 1 ~ 100

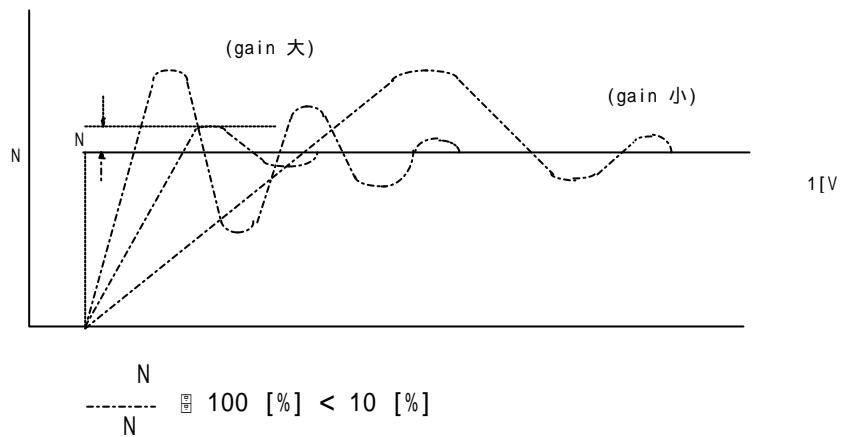
(J_L / J_M)가

GAIN

, 가 10 % . 1[V]

GAINsk ()

J_L / J_M	0	1	1 ~ 5	5
	10	20	20 ~ 30	30



*FDELAY : 1 : 0 ~ 3

- 0 :
- 1 : 0.5 ms
- 2 : 1.5 ms
- 3 : 3.5 ms

Ptrq lim : (3) : 0 ~ 100 [%]

Ntrq lim : (3) : 0 ~ 100 [%]

BKSPD : BRAKE : 1 ~ 100
 SVONEN OFF , BRAKE가 ()
 [r/min]

BKTIME: BRAKE : 1 ~ 10000
 SVONEN OFF ,SVONEN OFF
 BRAKE가 () 10 [msec]

PLSOUT : : 1 ~ 16

OUTSEL : 0 : 0 ~ 2
 0 0 , RDY

OUTSEL = 0 , 0 , 1 ,
 2 , RDY

*IOFS : ()

5 OFF

LCD

MON-SPD : (+5V) [r/min] : 50 ~ 6500
 MON-MODE가 0 : 가 0[r/min] 0[V], MON-SPD 5[V]
 MON-MODE가 1 : 가 0[r/min] 2.5[V], MON-SPD
 5[V],
 MON-SPD 0[V]
 MON-MODE : : 0 ~ 1
 0 : 0 ~ 5[V]
 1 : 2.5[V] 2.5 ~ 5[V],
 2.5 ~ 0[V]
 MON-TRQ : (+5V) : 0 ~ 100%
 %
 *DISCHG : : 0 ~ 1
 1 ,
 0
 *P ALARM : : 0 ~ 1
 0 : off PWR Fail Alarm
 1 : off NOT RDY, Reset PWR Fail
 Alarm
 *POWER : 3 / : 0 ~ 1
 (PARAMETER FDA3005P 3010P 가 .)
 0 : 3 AC 200 ~ 230V
 1 : AC 200 ~ 230V(!) AC P ALARM 1

 *TQOFS : : ± 30 [%]
 가
 *PARA INI : ()
 가
 (!) * SVONEN OFF 가

5.5

5.5.1 DISPLAY (STATUS)

SPD COM :

[r/min]

RPM : [r/min] .

TRQ LIM : (3) [%] .

LOAD : (3) [%] .

PLS ERR : 4 .

SHOW : SERVO .

SV	PG
1	1

* SV : SVONEN
1=ON 0=OFF
* PG :
1=ON 0=OFF

VERSION: SERVO MAIN SOFTWARE VERSION NUMBER .

5.5.2 ALARM (ALARM)

DISPLAY : ALARM
ALARM
ALARM PARA ERR, PWR FAIL, EMG ALARM
가 3 ALARM
ALARM ALARM0(가 ALARM),
ALARM1, ALARM2 .

NOT RDY	ON	3 OFF
NORMAL		
PARA ERR		EEPROM
OS		,
OL		

LINE		,
FOL ERR	()	가 , ,
CMD FRQ	()	
OV		3 ,
IPM ERR	IPM ALARM	, , SMPS
BATT ERR	()	
PWR FAIL		SERVO ON ,
EMG		ESTOP

ALARM0, ALARM1, ALARM2 : 3 ALARM
 ALARM0가 가 ALARM , ALARM1 ALARM2가
 ALARM .

RESET : ALARM RESET
 ALARM RESET .
 CN1 ALMRST .

RST ALL : ALARM RESET
 ALARM (ALARM0, ALARM1, ALARM2) ALARM ALARM
 RESET .

○

(PARAM_M)

MOTOR		0, 10 ~ 32	
* KT	[kgf-cm/A] 100	1 ~ 32767	
* JM	[gf-cm-sec ²] 100	1 ~ 32767	
* LPHI	[mH] 100	1 ~ 32767	
* RPHI	[Ω] 1000	1 ~ 32767	
* IRATE	[A] 1000	1 ~ 32767	
* MAX RPM	[r/min]	0 ~ 6500	
* POLE	POLE	2,4,6,8,10,12,14,16	
* ENC TYPE		0 ~ 1	
* ENC PLS	[pulse/rev]	1000 ~ 10000	
* AMP TYPE		0 ~ 20	

○

(PARAM_S)

SPD0	0 [r/min]	0 ~ 6500	100
SPD1	1 [r/min]	0 ~ 6500	500
SPD2	2 [r/min]	0 ~ 6500	1500
Tacc	가 (sec) 100	0 ~ 5000	0
Tdec	(sec) 100	0 ~ 5000	0
* S MODE	S 가 (0 : , 1 : S 가)	0 ~ 1	0
ZERO SPD	0 [r/min]	0 ~ 6500	10
* SPD 10V	10[V] [r/min]	0 ~ 6500	3000
IN SPD	[r/min]	0 ~ 6500	10
SPD OFS		-2047 ~ 2047	0
ZCL VOLT	ZERO CLAMP mv	0 ~ 1000	0
ZCL MODE	ZERO CLAMP MODE	0,1,2	0

○ (PARAM_P)

Fdfwd	Feed Forward [%]	0 ~ 100	0
FILT	[msec]	0 ~ 10000	0
IN POS	[pulse]	0 ~ 6500	100
FOLLOW	[pulse]	0 ~ 32767	10000
* Gnum		0 ~ 1000	1
* Gden		0 ~ 1000	1
* PLS TYPE		0 ~ 2	1
* PLS LOG		0 ~ 1	0

○ (PARAM_C)

* TYPE	(0 : , 1 :)	0 ~ 1	0
GAINpp	gain [sec ⁻¹]	1 ~ 100	30
GAINsi	gain	1 ~ 100	20
GAINsk	gain	1 ~ 100	10
* FDELAY	Filter	0 ~ 3	0
Ptrq lim	(3 = 100 [%])	0 ~ 100	100
Ntrq lim	(3 = 100 [%])	0 ~ 100	100
BKSPD	BRAKE [r/min]	1 ~ 100	100
BKTIME	BRAKE [msec]	1 ~ 10000	50
PLSOUT		1 ~ 16	1
OUTSEL	0	0 ~ 2	0
* IOFS			
MON-SPD	(+5V) (r/min)	50 ~ 6500	3000
MON-MODE		0 ~ 1	0
MON-TRQ	(+5V) %	0 ~ 100	100
* DISCHG		0 ~ 1	0
* P ALARM		0 ~ 1	1
* POWER	3 /	0 ~ 1	0
TQOFS		0 ~ 30	0
* PARA- INI			

○ DISPLAY (STATUS)

SPDCOM	[r/min]		
RPM	[r/min]		
TRQ LIM	[%]		
LOAD	[%] (3 = 100 [%])		
PLS ERR			
SHOW	SERVO		
VERSION	MAIN SOFTWARE VERSION NUMBER		

○ ALARM (ALARM)

DISPLAY	ALARM		
ALARM0,1,2	3 ALARM		
RESET	ALARM RESET		
RST ALL	ALARM RESET		

(!) * SVONEN OFF
가 .

5.6

FLOW

5.6.1

FLOW

/

