

**mitsubishi**

미쓰비시 **범용** AC서보

**MELSERVO-J2-Super 시리즈**

**범용 인터페이스**

**MR-J2S-□A**

**서보앰프**



**기술자료집**

( ● )





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「 」 「 」

 **위험** , 가  
 **주의** , 가

,  가 .

 ( 「 」 )  
 가 .  
 ( (earth) )  
 가 .

「 」

가 .

1.

⚠ 위험	
OFF 10	(charge)
가	가
가	가
OFF	가

2.

⚠ 주의	
L1 · L2 · L3	(MC)
가	(MC)가
가	가

3.

⚠ 주의	
(+ · -)	가
( ) 가	가

4.

(1)

⚠ 주의			
<p style="font-size: 2em;">가</p> <p style="font-size: 2em;">가</p> <p style="font-size: 2em;">가</p>			
		0 ~ +55 ( )	0 ~ +40 ( )
		-20 ~ +65 ( )	-15 ~ +70 ( )
		90%RH ( 가 )	80%RH ( 가 )
			90%RH ( 가 )
( ), 가 . 가 . 가			
1000m			
( )	5.9m <sup>3</sup>	HC - KFS HC - MFS HC - UFS13~73	X · Y : 49m <sup>3</sup>
		HC - SFS81 HC - SFS52~152 HC - SFS53~153 HC - RFS HC - UFS72 · 152	X · Y : 24.5m <sup>3</sup>
		HC - SFS121 · 201 HC - SFS202 · 352 HC - SFS203 · 353 HC - UFS202~502	X : 24.5m <sup>3</sup> Y : 49m <sup>3</sup>
		HC - SFS301 HC - SFS502 · 702	X : 24.5m <sup>3</sup> Y : 29.4m <sup>3</sup>
		HA - LFS11K2~22K2	X : 11.7m <sup>3</sup> Y : 29.4m <sup>3</sup>
( )			

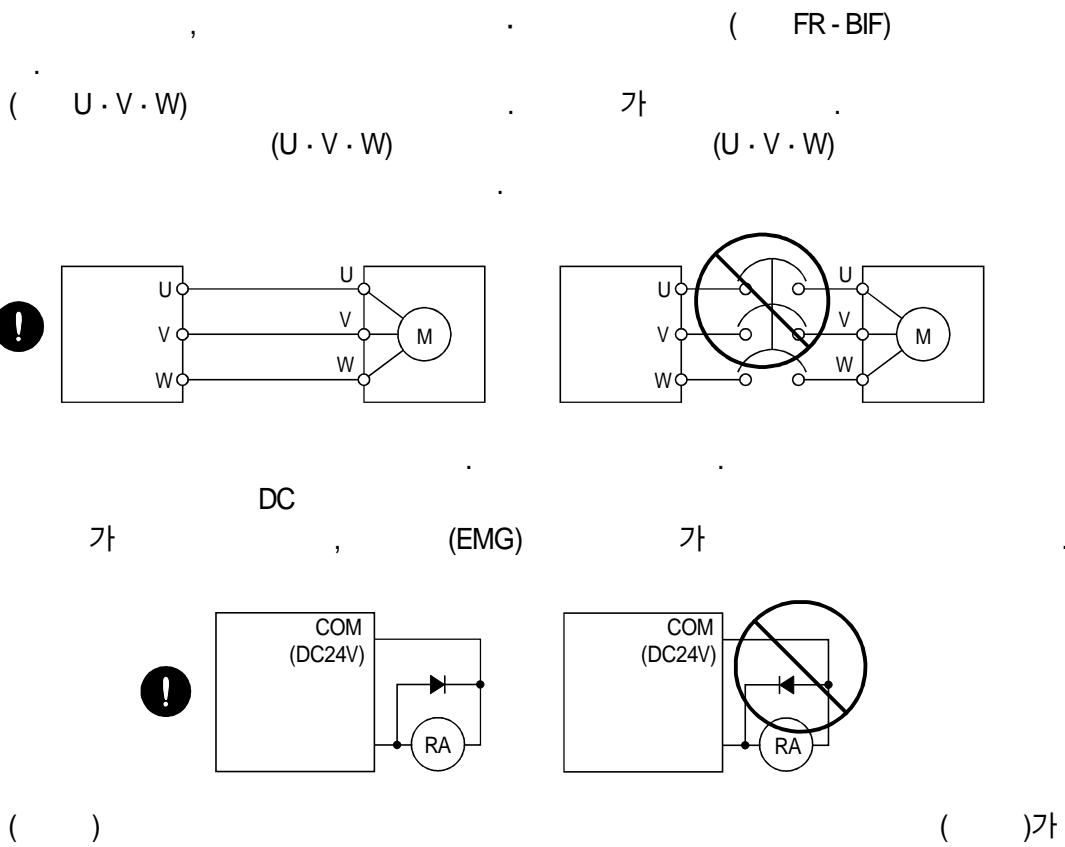


⚠ 주의

가  
,  
가

(2)

⚠ 주의



(3)

⚠ 주의



(7)



가



2



가  
( )

1. ( : )

(1)

가

(2)

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가

2. ( : )

(1)

1

(2)

(同)

(3)

가  
가

(4)

[ ]

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2004 1

가 「

가 」 .

가 , 가

가

, 가  
FR - BEL)

(FR - BAL



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, , , , ,  
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 EEP - ROM

가 10 EEP - ROM EEP - ROM 10 가

. EEP - ROM  
. EEP - ROM  
. EEP - ROM

# EC

## 1. EC

EC, EU가  
(1995 1 ) · EMC (1996 ) · EC 가  
CE (CE )  
CE 가

(1) EMC  
EMC 가  
EMC EMC, EMC  
가 EMC EMC 가  
(IB( )67303)  
3 가 TUV, EMC 가  
EMC

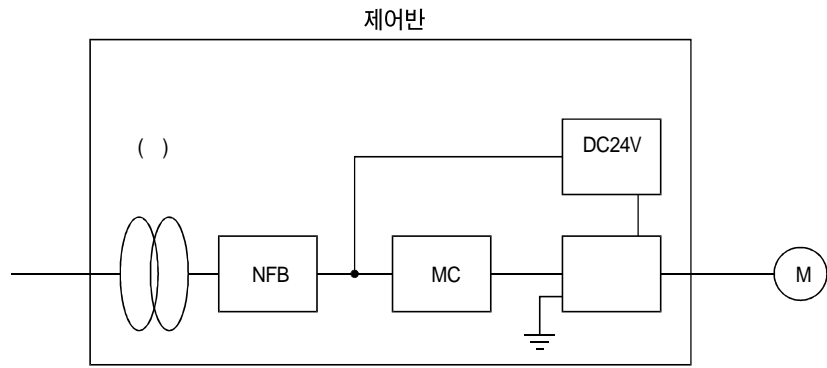
(2)  
3 가 TUV,

(3)  
가

## 2.

(1)  
: MR - J2S - 10A ~ MR - J2S - 22KA  
MR - J2S - 10A1 ~ MR - J2S - 40A1  
: HC - KFS  
HC - MFS  
HC - SFS  
HC - RFS  
HC - UFS  
HA - LFS  
HC - LFS

(2)



(3)

IEC664      2      가      (IP54)

(4)

(a)      IEC664      IEC      EN

(b)      ,      DC24V

(5)

(a)      (PE)      (⊖ 가 )

(b)      (PE)

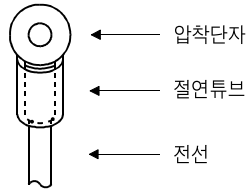


(c)      (PE)

(6)

(a)

가



(b)

EN  
EN

(13.1.5 )

(7)

(a)

13.2.2

EN/IEC

(b) 13.2.1

EN60204 - 1 5 C

:40

: PVC( )

(c)

EMC

(8) EMC

EMC

( )

가

EMC

,EMC

가

(IB( )67303)

UL/C - UL

(1)

- : MR - J2S - 10A ~ MR - J2S - 22KA
- MR - J2S - 10A1 ~ MR - J2S - 40A1
- : HC - KFS
- HC - MFS
- HC - SFS
- HC - RFS
- HC - UFS
- HA - LFS
- HC - LFS

(2)

10.16[cm](4[in])      100CFM(2.8m<sup>3</sup>/min)

(3)

가 5000A

UL

(4)

OFF 15

	[min]
MR - J2S - 10A(1) · 20A(1)	1
MR - J2S - 40A(1) · 60A	2
MR - J2S - 70A ~ 350A	3
MR - J2S - 500A · 700A	5
MR - J2S - 11KA	4
MR - J2S - 15KA	6
MR - J2S - 22KA	8

(5)

UL/C - UL

(6)

“ UL/C - UL

(7)

National Electrical Code

Canada Electrical Code



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MR - J2S - A

,  
MR - J3 - A

MELSERVO - J2 - Supr (AC )	IB( )0300001
MELSERVO	SH( )3180
EMC 가	IB( )67303

1	1-1 ~ 1-24
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1.1	.....	1- 1
1.2	.....	1- 2
1.3	.....	1- 5
1.4	.....	1- 6
1.5	.....	1- 8
1.6	.....	1- 9
1.7	.....	1-10
1.7.1	.....	1-10
1.7.2	.....	1-15
1.8	.....	1-19

2	2-1 ~ 2-4
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2.1	.....	2- 1
2.2	.....	2- 2
2.3	.....	2- 3
2.4	.....	2- 3

3	3-1 ~ 3-68
---	------------

3.1	.....	3- 2
3.1.1	.....	3- 2
3.1.2	.....	3- 6
3.1.3	.....	3- 8
3.2	.....	3-10
3.3	.....	3-11
3.3.1	.....	3-11
3.3.2 (     )	.....	3-14
3.4 (     )	.....	3-23
3.4.1	.....	3-23
3.4.2	.....	3-28
3.4.3	.....	3-30
3.4.4 /	.....	3-33
3.4.5 /	.....	3-35
3.4.6 /	.....	3-37
3.5	.....	3-38
3.6	.....	3-39
3.6.1	.....	3-39
3.6.2	.....	3-40
3.7	.....	3-45
3.7.1	.....	3-45
3.7.2	.....	3-47
3.7.3	.....	3-48
3.8	.....	3-50
3.8.1	.....	3-50

3.8.2	.....	3-51
3.8.3	.....	3-52
3.9	.....	3-54
3.10	.....	3-58
3.11	(TE2) .....	3-59
3.11.1	2006 1 .....	3-59
3.11.2	2005 12 .....	3-61
3.12	3M .....	3-62
3.13	MR - J2S - 11KA~MR - J2S - 22KA .....	3-63
3.13.1	.....	3-63
3.13.2	.....	3-64
3.13.3	.....	3-65

<b>4</b>	<b>4-1 ~ 4-8</b>
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4.1	.....	4- 1
4.2	.....	4- 2
4.2.1	.....	4- 2
4.2.2	.....	4- 2
4.2.3	.....	4- 5
4.2.4	.....	4- 7
4.3	- .....	4- 8

<b>5</b>	<b>5-1 ~ 5-36</b>
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5.1	.....	5- 1
5.1.1	.....	5- 1
5.1.2	.....	5- 2
5.2	.....	5-27
5.2.1	.....	5-27
5.2.2	.....	5-31
5.2.3	.....	5-34
5.2.4	.....	5-34
5.2.5	.....	5-35

<b>6</b>	<b>6-1 ~ 6-18</b>
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6.1	.....	6- 1
6.2	.....	6- 2
6.2.1	.....	6- 2
6.2.2	.....	6- 3
6.2.3	.....	6- 4
6.3	.....	6- 5
6.4	.....	6- 7
6.5	.....	6- 9
6.6	.....	6-10
6.7	(DO) .....	6-13
6.8	.....	6-14
6.8.1	.....	6-14
6.8.2	JOG .....	6-15

6.8.3	.....	6-16
6.8.4	.....	6-17

7	7-1 ~ 7-12
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7.1	.....	7-1
7.1.1	.....	7-1
7.1.2	MR Configurator( - ) .....	7-2
7.2	.....	7-3
7.2.1	.....	7-3
7.2.2	.....	7-4
7.2.3	.....	7-5
7.2.4	.....	7-6
7.3	1( ).....	7-7
7.3.1	1 .....	7-7
7.3.2	1 .....	7-7
7.4	.....	7-10
7.5	MELSERVO-J2 .....	7-11
7.5.1	.....	7-11
7.5.2	.....	7-12

8	8-1 ~ 8-12
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8.1	.....	8-1
8.2	.....	8-1
8.3	.....	8-4
8.4	.....	8-6
8.5	.....	8-6
8.5.1	.....	8-6
8.5.2	.....	8-7
8.5.3	.....	8-8
8.5.4	.....	8-10

9	9-1 ~ 9-2
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10	10-1 ~ 10-14
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10.1	.....	10-1
10.1.1	.....	10-1
10.1.2	.....	10-3
10.1.3	.....	10-4
10.2	가 .....	10-4
10.2.1	.....	10-5
10.2.2	.....	10-6
10.2.3	.....	10-13

11		11-1 ~ 11-10
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11.1		11- 1
11.2		11- 8

12		12-1 ~ 12-8
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12.1		12- 1
12.2		12- 2
12.3		12- 5
12.4		12- 7
12.5		12- 8

13		13-1 ~ 13-66
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13.1		13- 1
13.1.1		13- 1
13.1.2		13-12
13.1.3		13-20
13.1.4		13-23
13.1.5		13-26
13.1.6	(MR - TB20)	13-34
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13.1.8	(MR - BAT · A6BAT)	13-38
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13.1.10		13-41
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13.2		13-48
13.2.1		13-48
13.2.2		13-51
13.2.3		13-52
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13.2.5		13-54
13.2.6		13-54
13.2.7		13-55
13.2.8		13-60
13.2.9	EMC	13-63
13.2.10		13-65

14		14-1 ~ 14-32
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14.1		14- 1
14.1.1	RS - 422	14- 1
14.1.2	RS - 232C	14- 2
14.2		14- 3
14.2.1		14- 3
14.2.2		14- 3
14.3		14- 5
14.4		14- 7
14.5		14- 8

14.6	.....	14-8
14.7	.....	14-9
14.8	.....	14-9
14.9	.....	14-10
14.10	.....	14-10
14.11	No. ....	14-11
14.11.1	.....	14-11
14.11.2	.....	14-13
14.12	.....	14-15
14.12.1	가 .....	14-15
14.12.2	.....	14-17
14.12.3	.....	14-18
14.12.4	(DI0) .....	14-20
14.12.5	(DI0) .....	14-22
14.12.6	ON/OFF( ) .....	14-23
14.12.7	.....	14-24
14.12.8	ON/OFF( (DO) ) .....	14-27
14.12.9	.....	14-28
14.12.10	.....	14-29
14.12.11	.....	14-30

15	15-1 ~ 15-68
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15.1	.....	15-1
15.1.1	.....	15-1
15.1.2	.....	15-2
15.2	.....	15-3
15.3	.....	15-4
15.4	.....	15-5
15.5	.....	15-6
15.6	.....	15-7
15.7	.....	15-8
15.7.1	.....	15-8
15.7.2	.....	15-9
15.7.3	.....	15-20
15.7.4	.....	15-22
15.7.5	.....	15-23
15.8	.....	15-24
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15.9	.....	15-65
15.10	.....	15-66
15.10.1	.....	15-66
15.10.2	.....	15-68

1	.....	- 1
2	.....	- 2
3	.....	- 3
4	.....	- 4
5	( ) .....	- 5
6	RoHS .....	- 6

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MELSERVO

1
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2
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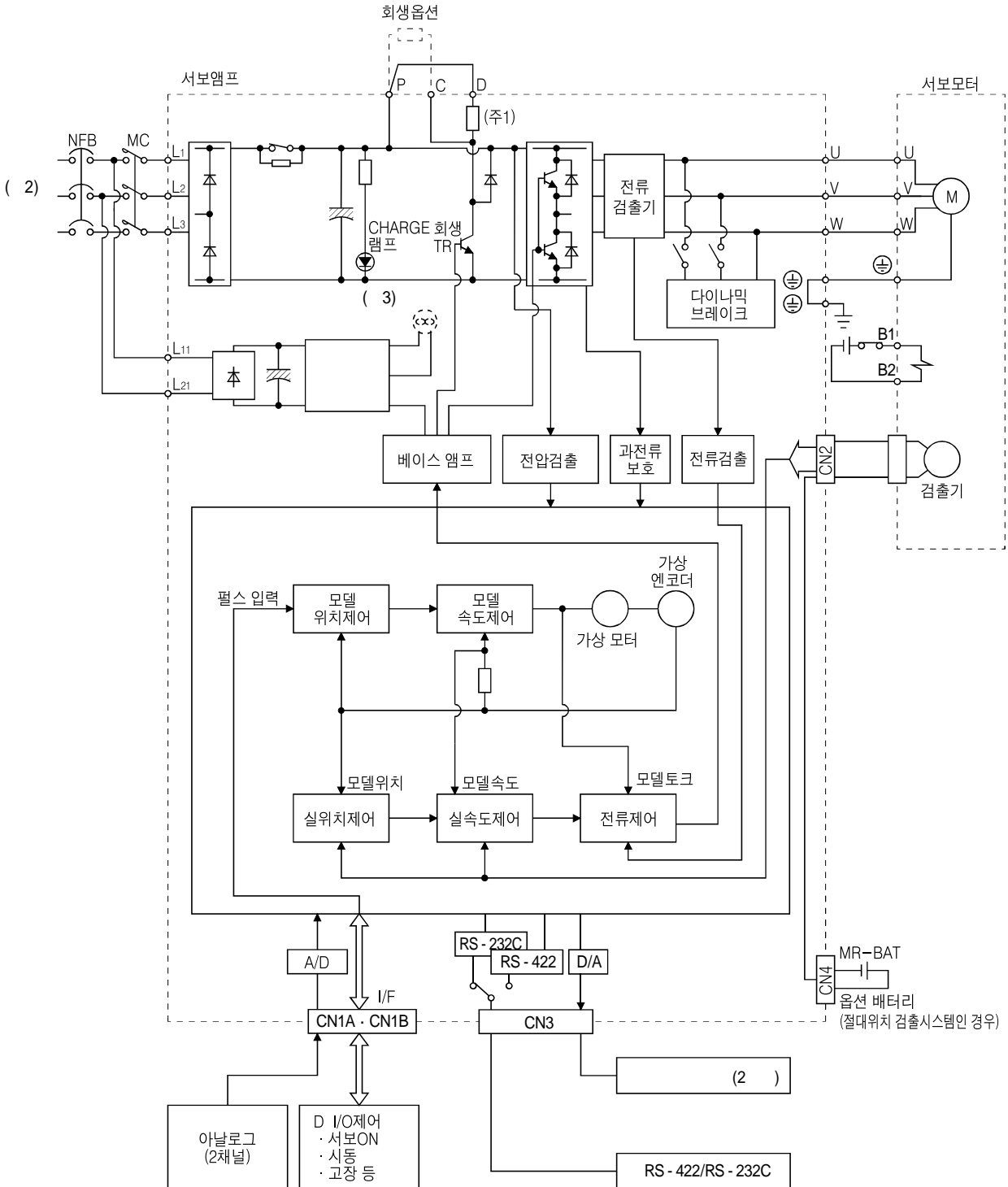
1

1. 1

	AC MELSERVO - J2 - Super AC	MELSERVO - J2
RS - 232C	RS - 422	-
MELSERVO - J2 - Super 가가 가	MELSERVO - J2 가	131072pulse/rev
(1) 500kpps /rev (Smoothing) 가 (Clamping circuit)		131072pulse 2 가
(2)	(DC0~ ±10V) 가 (offset)	( 7 )
(3)	(DC0~ ±8V) 가	( )

1. 2

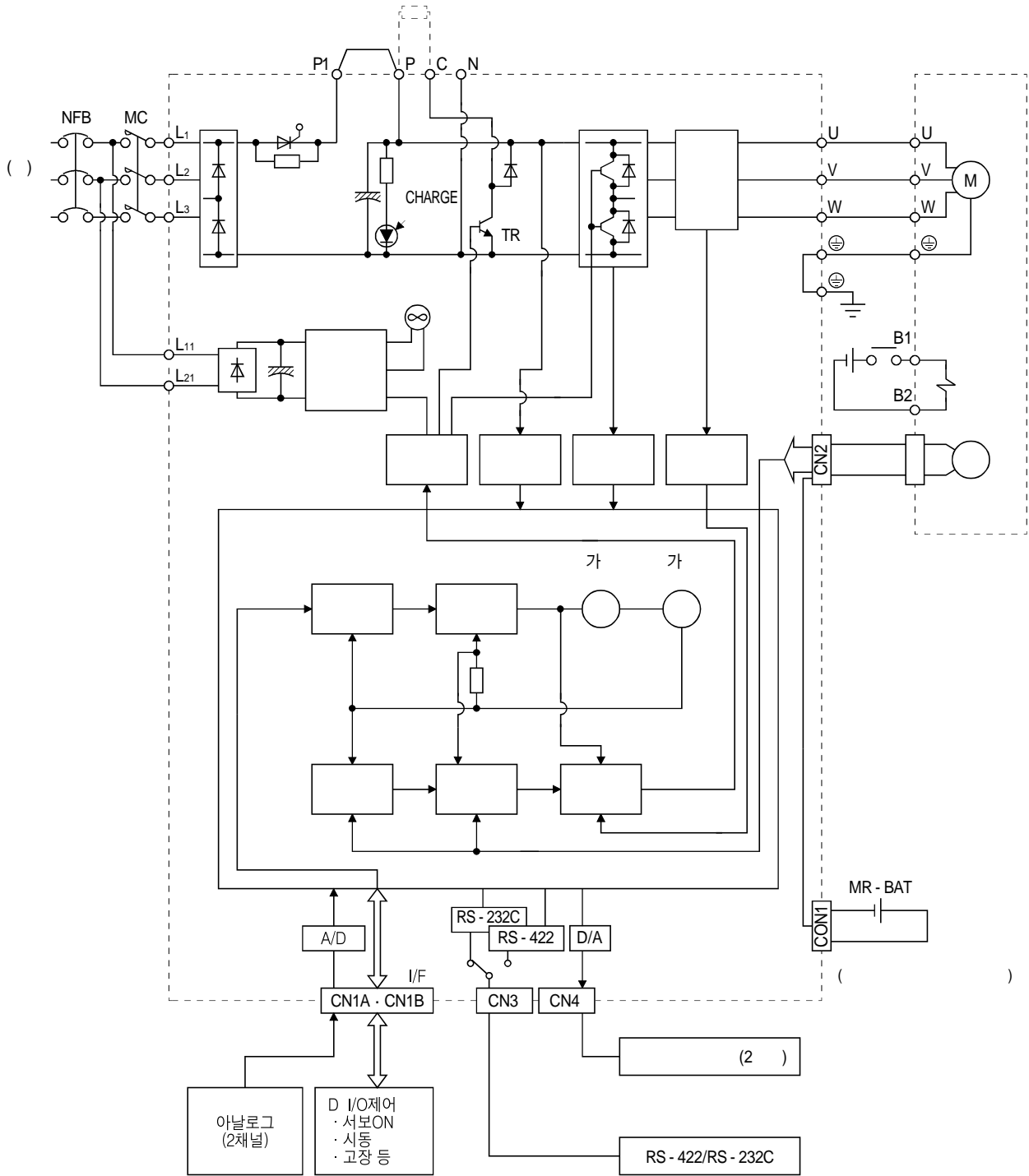
(1) MR-J2S-350A



- ( ) 1. MR-J2S-10A(1)
- 2. AC230V, L1, L2, L3, , 1.3
- AC100~120V, L3
- 3. MR-J2S-200A



(3) MR-J2S-11KA



( )

,13

1. 3

MR-J2S-		10A	20A	40A	60A	70A	100A	200A	350A	500A	700A	11KA	15KA	22KA	10A1	20A1	40A1	
				AC200~230V, 50/60Hz AC230V, 50/60Hz					AC200~230V, 50/60Hz					AC100~120V, 50/60Hz				
		AC200~230V : AC170~253V AC230V : AC207~253V					AC170~253V					AC85~127V						
		± 5%																
		12.2																
		12.5																
		PWM																
		( )																
		500kpps( ) · 200kpps( )																
		A/B A: 1~65535 · 131072 B: 1~65535 1/50 < A/B < 500																
		0~ ± 10000pulse( )																
		( ) ± 2.5																
		(DC0 ~ +10V/ )																
		1 : 2000, 1 : 5000																
		DC0 ~ ± 10V/																
		± 0.01% ( 0~100%)																
		0%( ± 10%)																
		± 0.2% ( 25 ± 10 )																
		(DC0 ~ +10V/ )																
		DC0 ~ ± 8V/ ( 10~12kΩ)																
		(DC0 ~ ± 10V/ )																
		, (IP00) , (IP00) , (IP00)																
		0 ~ +55 ( )																
		-20 ~ +65 ( )																
		90%RH ( 가 )																
		( ) · 가																
		가 · 가																
		1000m																
		5.9m <sup>3</sup>																
		[kg]	0.7	0.7	1.1	1.1	1.7	1.7	2.0	2.0	4.9	15	16	16	20	0.7	0.7	1.1

( ) ± 2.5  
± 10

B0

B0

1. 4

		( )	
		P	3.1.1 / 3.4.1/ 4.2.2
		S	3.1.2 / 3.4.2/ 4.2.3
		T	3.1.3 / 3.4.3/ 4.2.4
/		P/S	3.4.4
/		S/T	3.4.5
/		T/P	3.4.6
	131072 pulse/rev	P · S · T	
	가	P	15
		P · S	8.5
	가	P · S · T	8.3
	가 가	P · S · T	8.4
	MR Configurator( - ) PC	P	
	PC	P	
	PC가 가	P	
	, ±1	P	No.20
	1/50~500	P	No.3 · 4 · 69~71
	가 가	P · S	7
	MELSERVO - J2	P	No.7
S 가	가	S · T	No.13
		P · S · T	13.1.1
	MR - J2S - 500A~MR - J2S - 22KA	P · S · T	13.1.2
	MR - J2S - 500A~MR - J2S - 22KA	P · S · T	13.1.3
		P · S · T	No.16
	ON	S	No.20
	4	P	No.21
	ON	P · S · T	No.43~48

		( )	
		P · S	3.4.1 (5) No.28
		T	3.4.3 (5) / No.8~10 · 72~75
	5 7 LED	P · S · T	6.2
	ON/OFF	P · S · T	6.6
(DO)	가 ON/OFF	P · S · T	6.7
VC	(VC) (VLA) 0V	S · T	6.3
	JOG · · · · · D0	P · S · T	6.8
		P · S · T	No.17
MR Configurator ( - )	PC	P · S · T	13.1.9
	No. 3bit	P · S · T	10.2.1

( ) P: , S: , T:  
P/S: / , S/T: / , T/P: /



1. 5

(1)

<b>MITSUBISHI</b>		AC SERVO
MODEL	MR-J2S-60A	
POWER	: 600W	
INPUT	: 3.2A 3PH+1PH200-230V 50Hz 3PH+1PH200-230V 60Hz 5.5A 1PH230V 50/60Hz	
OUTPUT	: 170V 0-360Hz 3.6A	
SERIAL	: TC3XXAAAAG52	

MITSUBISHI ELECTRIC CORPORATION  
MADE IN JAPAN

PASSED

- ← 행명 용량
- ← 적용 전원
- ← 정격출력 전류
- ← 제조번호

(2)

MR - J2S - □A□□

시리즈명

-PX	가
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11kW~22kW

전원

	AC200~230V
( 2 )	AC230V
( 1 ) 1	AC100~120V

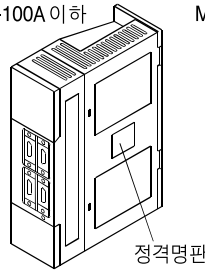
( ) 1. AC230V 750W  
2. AC100~120V 400W

범용 인터페이스

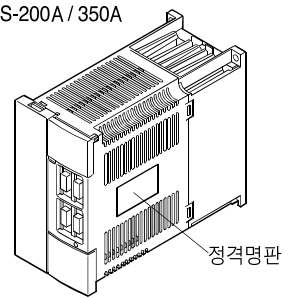
정격 출력

	[kW]		[kW]
10	0.1	350	3.5
20	0.2	500	5
40	0.4	700	7
60	0.6	11K	11
70	0.75	15K	15
100	1	22K	22
200	2		

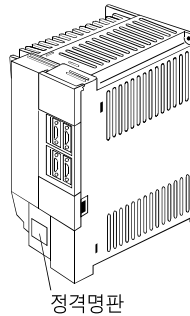
MR-J2S-100A 이하



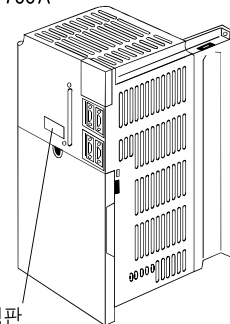
MR-J2S-200A / 350A



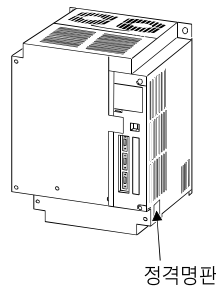
MR-J2S-500A



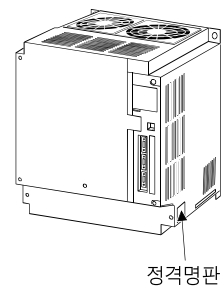
MR-J2S-700A



MR-J2S-11KA · 15KA



MR-J2S-22KA



1. 6

	HC-KFS	HC-MFS	HC-SFS			HC-RFS	HC-UFS	
			( 1) 1000r/min	2000r/min	( 1) 3000r/min		2000r/min	3000r/min
MR-J2S-10A(1)	053·13	053·13						13
MR-J2S-20A(1)	23	23						23
MR-J2S-40A(1)	43	43						43
MR-J2S-60A				52	53			
MR-J2S-70A	( 1)73	73					72	73
MR-J2S-100A			81	102	103			
MR-J2S-200A			121·201	152·202	153·203	103·153	152	
MR-J2S-350A			301	352	353	( 1)203	( 1)202	
MR-J2S-500A				( 1)502		( 1)353·503	( 1)352·502	
MR-J2S-700A				( 1)702				

	HC-LFS			( 1) HC-LFS
	1000r/min	2000r/min	3000r/min	
MR-J2S-60A				52
MR-J2S-100A				102
MR-J2S-200A				152
MR-J2S-350A				202
MR-J2S-500A			( 1)502	302
MR-J2S-700A	( 2)601	( 2)701M	( 1)702	
MR-J2S-11KA	801·12K1	11K1M	11K2	
MR-J2S-15KA	15K1	15K1M	15K2	
MR-J2S-22KA	20K1·25K1	22K1M	22K2	

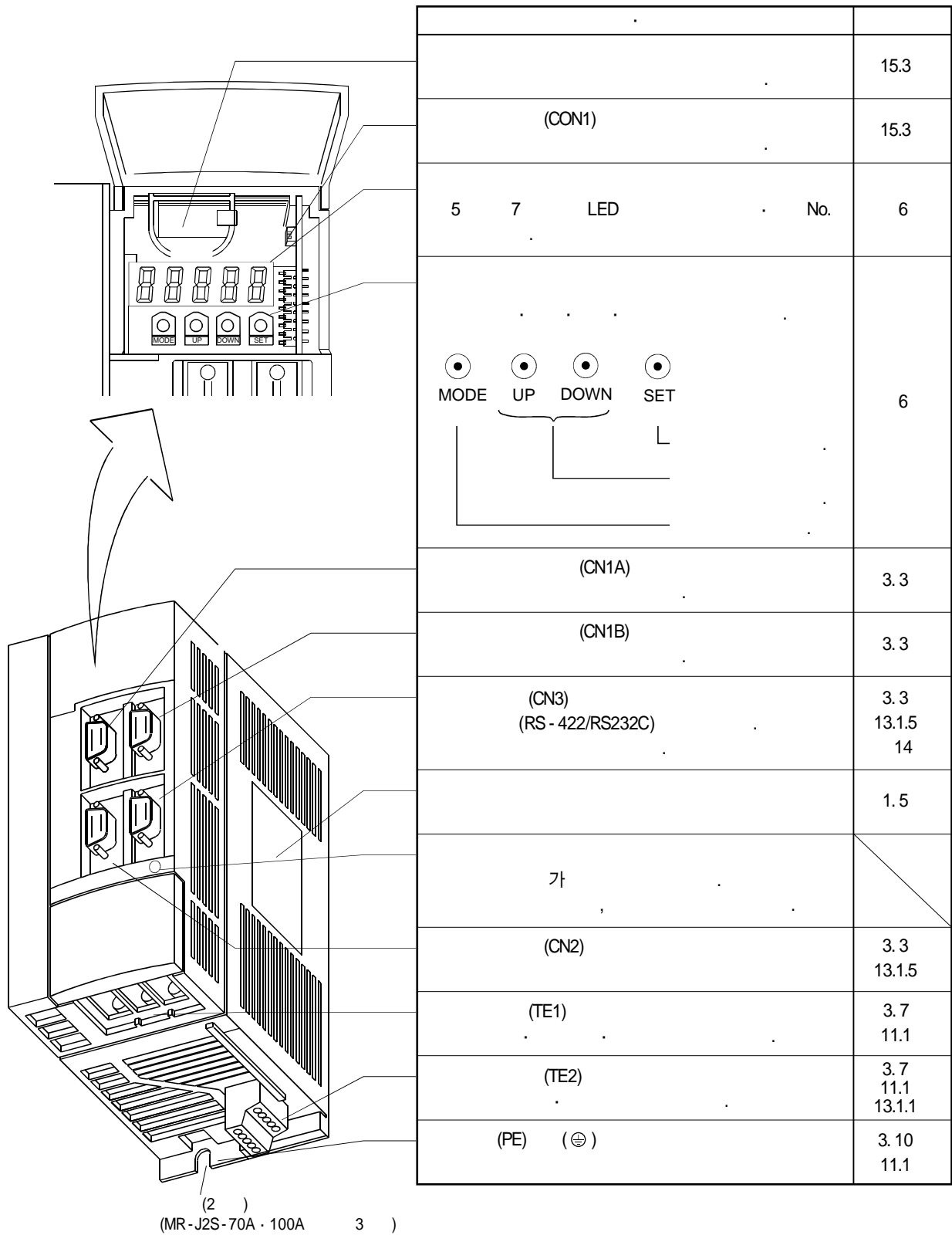
1.  
2.

가 , 3

1. 7

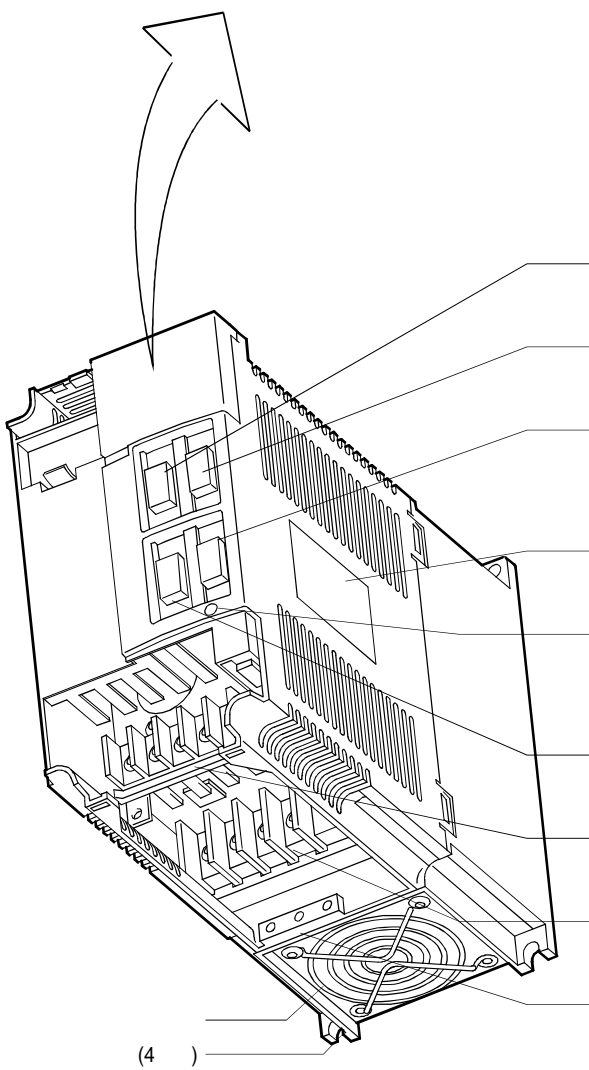
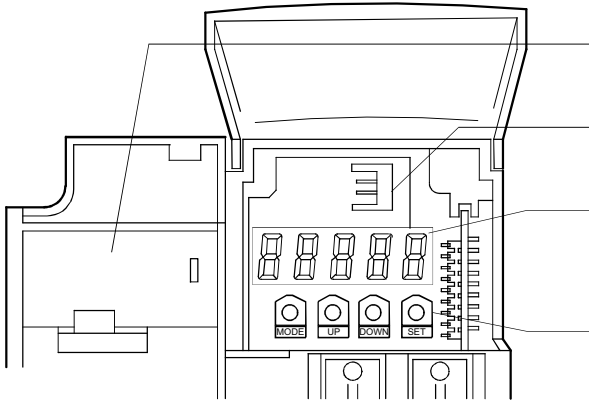
1.7.1

(1) MR-J2S-100A



(2) MR-J2S-200A · MR-J2S-350A

	1.7.2
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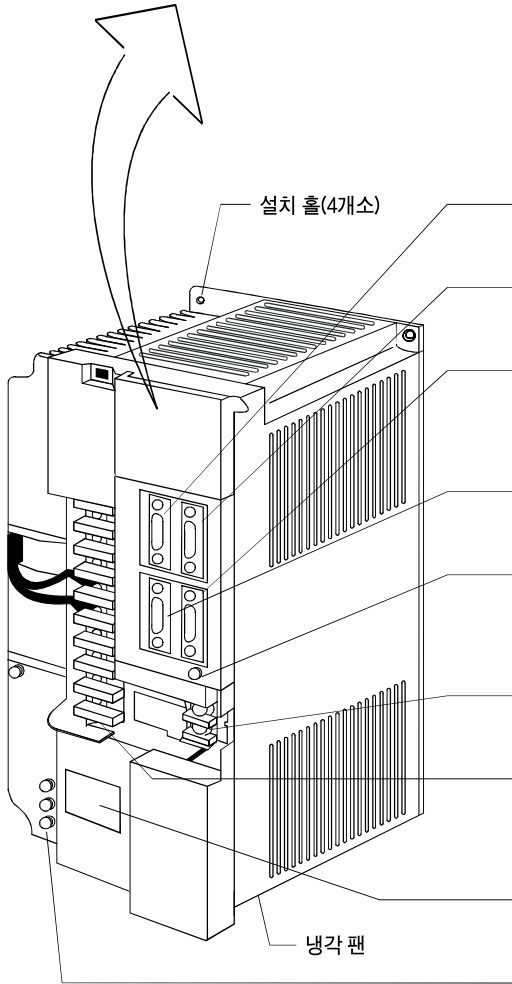
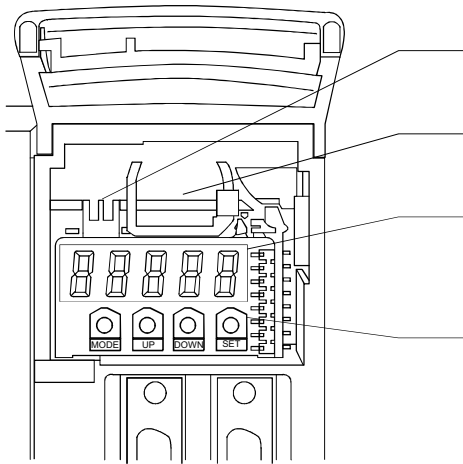


(4 )

				15.3
	(CON1)			15.3
5	7	LED	No.	6
				6
	(CN1A)			3.3
	(CN1B)			3.3
	(CN3) (RS-422/RS232C)			3.3 13.15 14
				1.5
	가			
	(CN2)			3.3 13.15
	(TE1)			3.7 11.1
	(TE2)			3.7 11.1 13.1.1
	(PE) (⊖)			3.10 11.1

(3) MR-J2S-500A

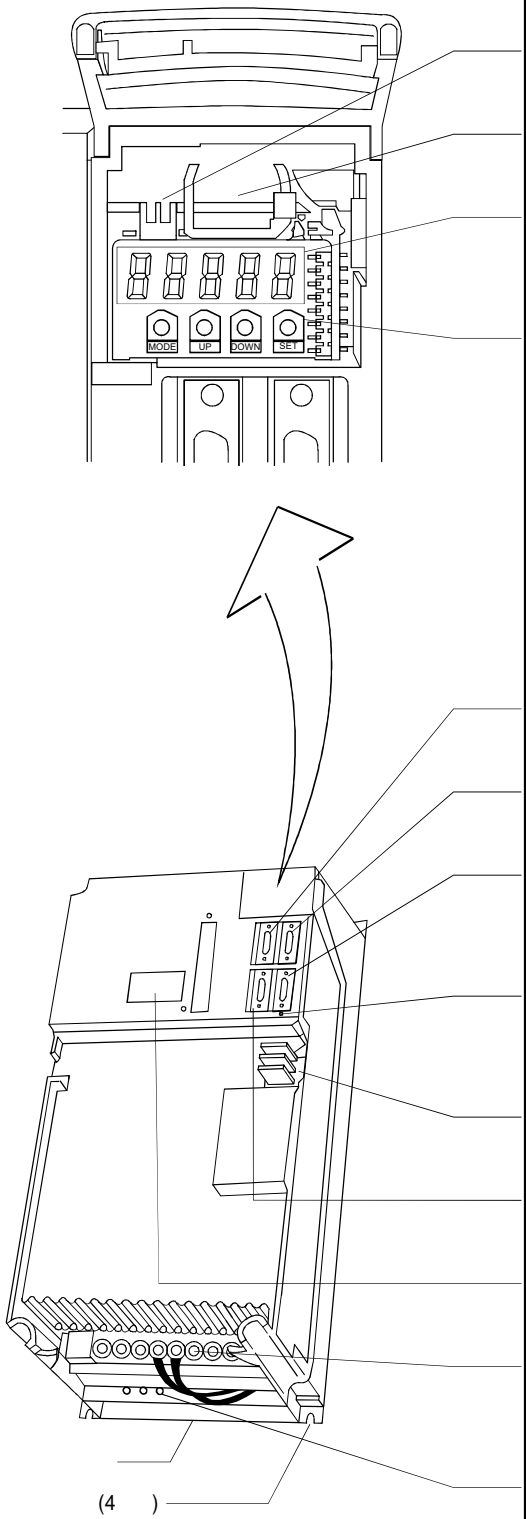
	1.7.2
--	-------



					15.3
	(CON1)				15.3
5	7	LED	No.		6
					6
	(CN1A)				3.3
	(CN1B)				3.3
	(CN3) (RS-422/RS232C)				3.3 13.1.5 14
	(CN2)				3.3 13.1.5
	가				
	(TE2)				3.7 11.1
	(TE1)				3.7 11.1 13.1.1
					1.5
	(PE) (⊖)				3.10 11.1

(4) MR-J2S-700A

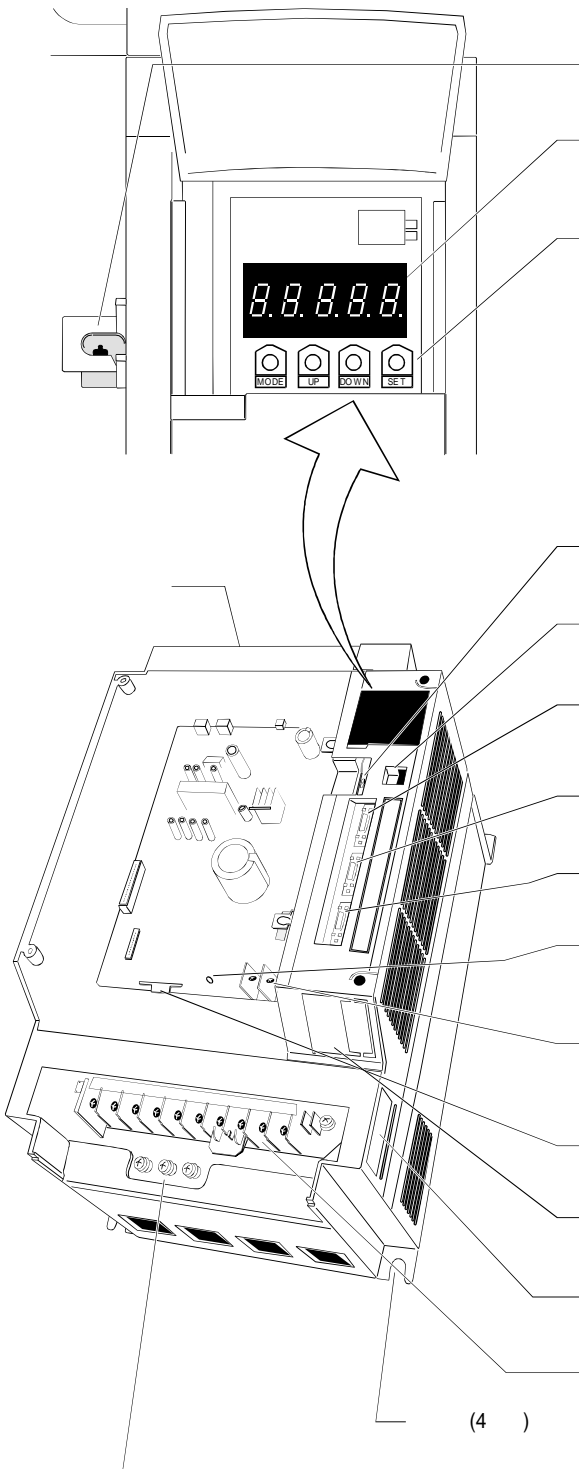
	1.7.2	
--	-------	--



		15.3
(CON1)		15.3
5	7	6
LED	No.	
MODE	UP	6
DOWN	SET	
(CN1A)		3.3
(CN1B)		3.3
(CN3)		3.3
(RS-422/RS232C)		13.15
		14
가		/
(TE2)		3.7
		11.1
(CN2)		3.3
		13.15
		1.5
(TE1)		3.7
		11.1
		13.1.1
(PE)	(⊖)	3.10
		11.1

(5) MR-J2S-11KA

	1.7.2
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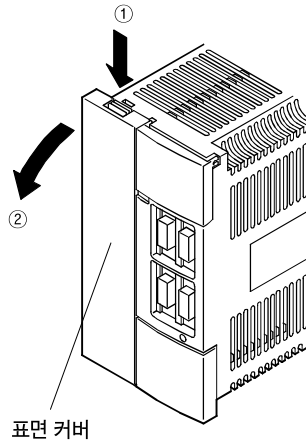
					15.3
5	7	LED	No.		6
					6
		(CON1)			15.3
		(CN4)	2		3.3 11.1
		(CN3) (RS232C)			3.3 13.1.5
		(CN1A)			3.3
		(CN1B)			3.3
		가			
		(TE2)			3.7 11.1 13.1.1
		(CN2)			3.3 13.1.5
		(CON2)			
					1.5
		(TE1)			3.7 11.1 13.1.1
		(PE) (⊖)			3.10 11.1

1.7.2

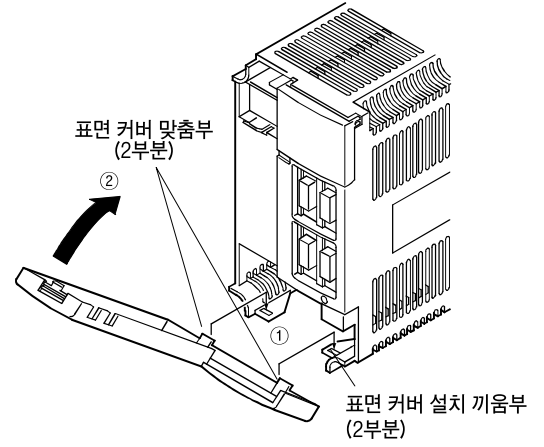
⚠ 주의 가 .

(1) MR-J2S-350A

표면 커버의 분리 방법



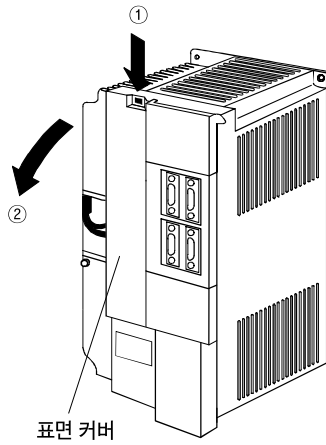
표면 커버의 취부 방법



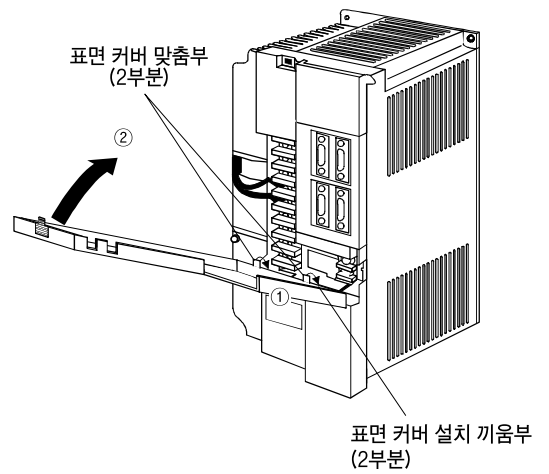
가 가

(2) MR-J2S-500A

표면 커버의 분리 방법



표면 커버의 취부 방법

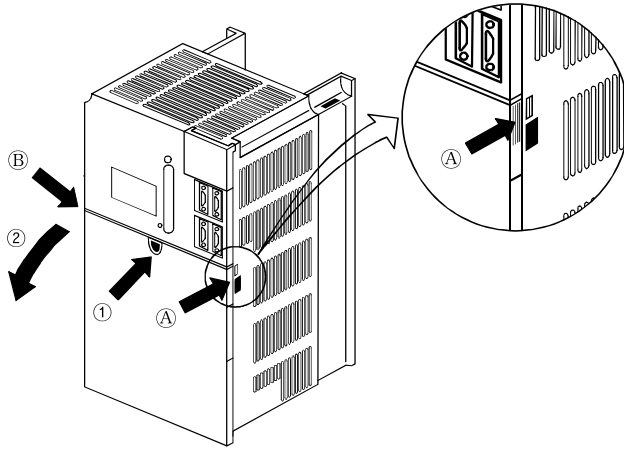


가 가



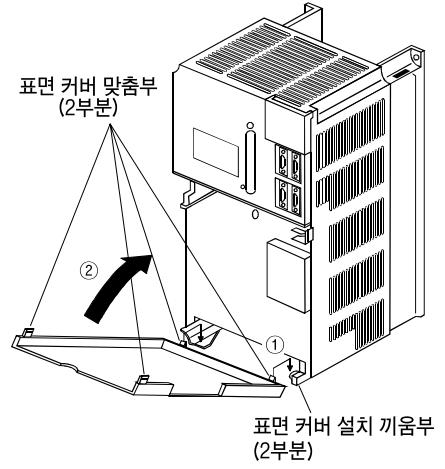
(3) MR-J2S-700A

표면 커버의 분리 방법



가

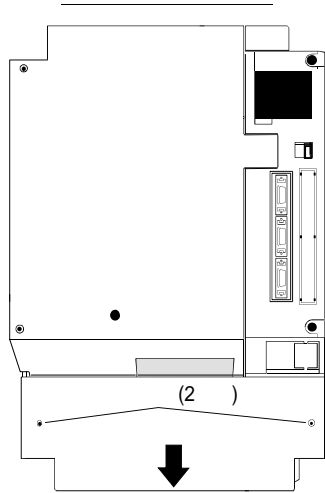
표면 커버의 취부 방법



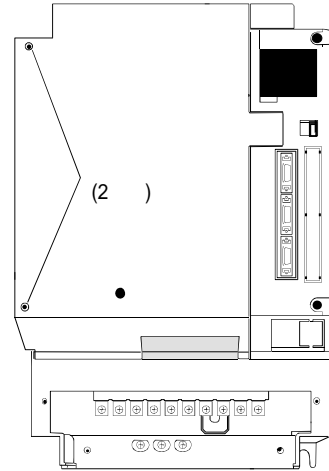
2

가 가

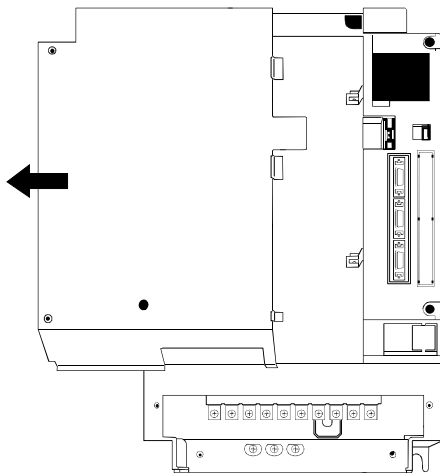
(4) MR-J2S-11KA



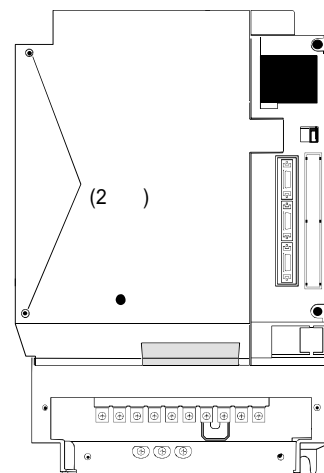
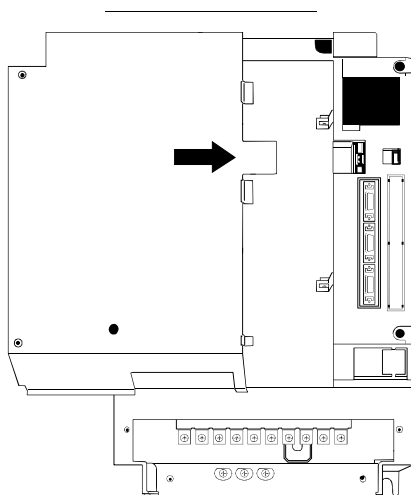
(2 )



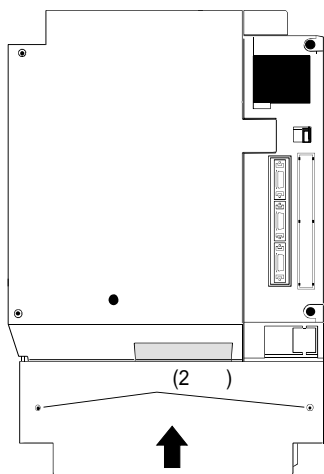
(2 )



(4) MR-J2S-11KA



(2 )



(2 )

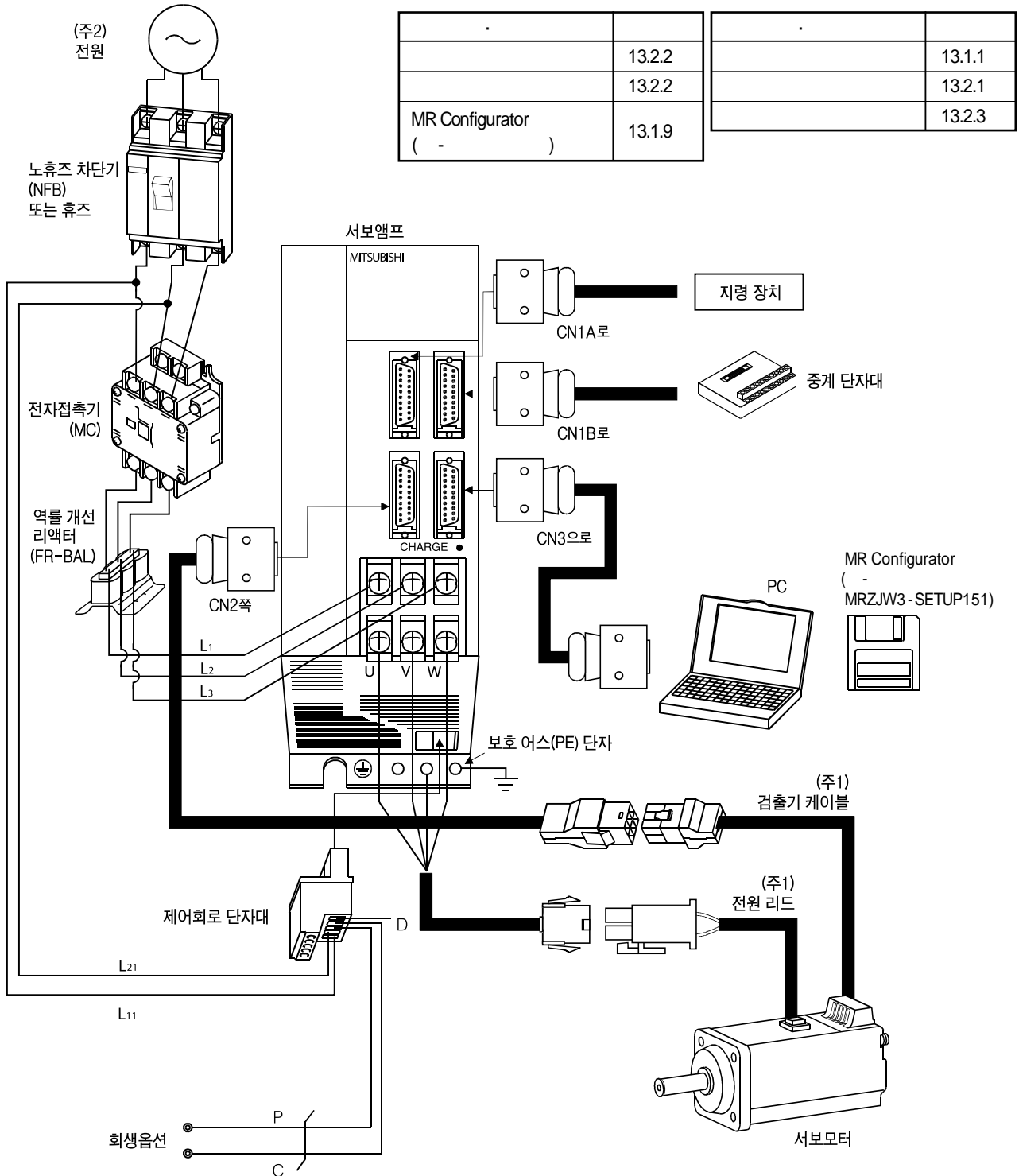
1. 8

<p>⚠ 위험</p>	<p>(PE) (⊖ 가 )</p>
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(1) MR-J2S-100A

(a) AC200~230V

AC230V



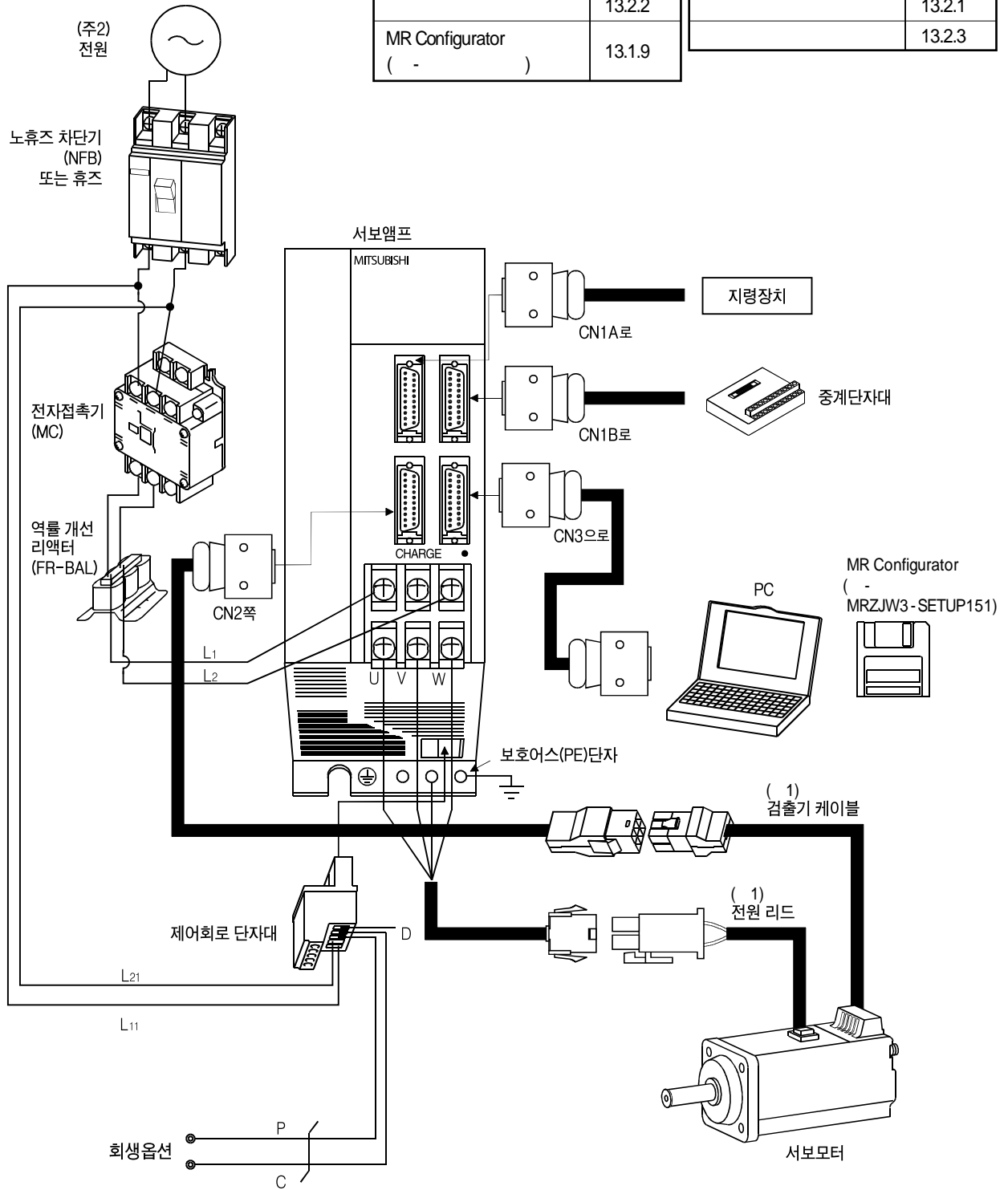
	13.2.2	
	13.2.2	13.1.1
MR Configurator ( - )	13.1.9	13.2.1
		13.2.3

- ( ) 1. HC - SFS · HC - RFS 가
- 2. AC230V MR - J2S - 70A , 1.3

L1, L2 , L3

(b) AC100~120V

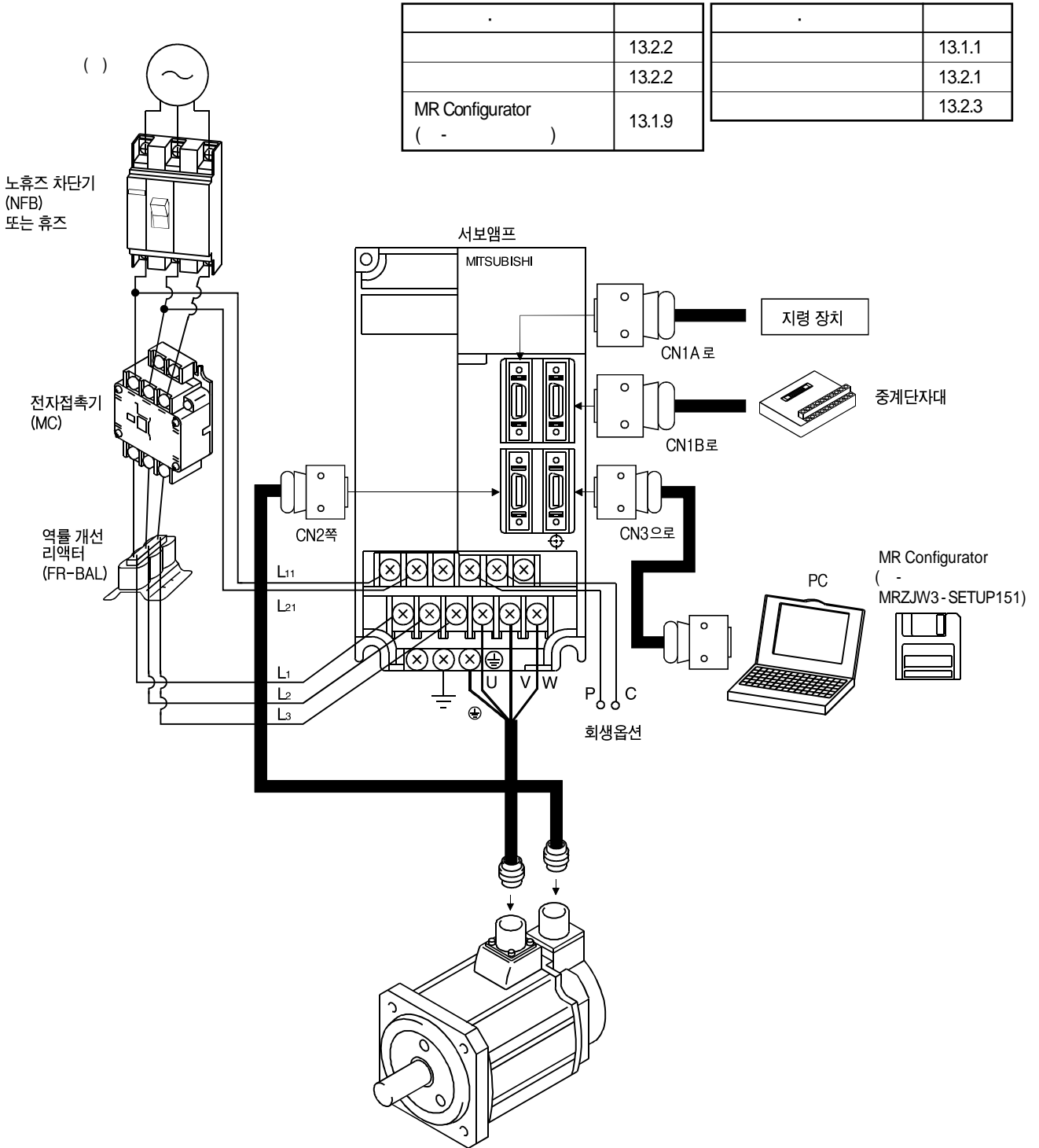
	13.2.2		13.1.1
	13.2.2		13.2.1
MR Configurator ( - )	13.1.9		13.2.3



( ) 1. HC-SFS · HC-RFS  
2. , 1.3

가

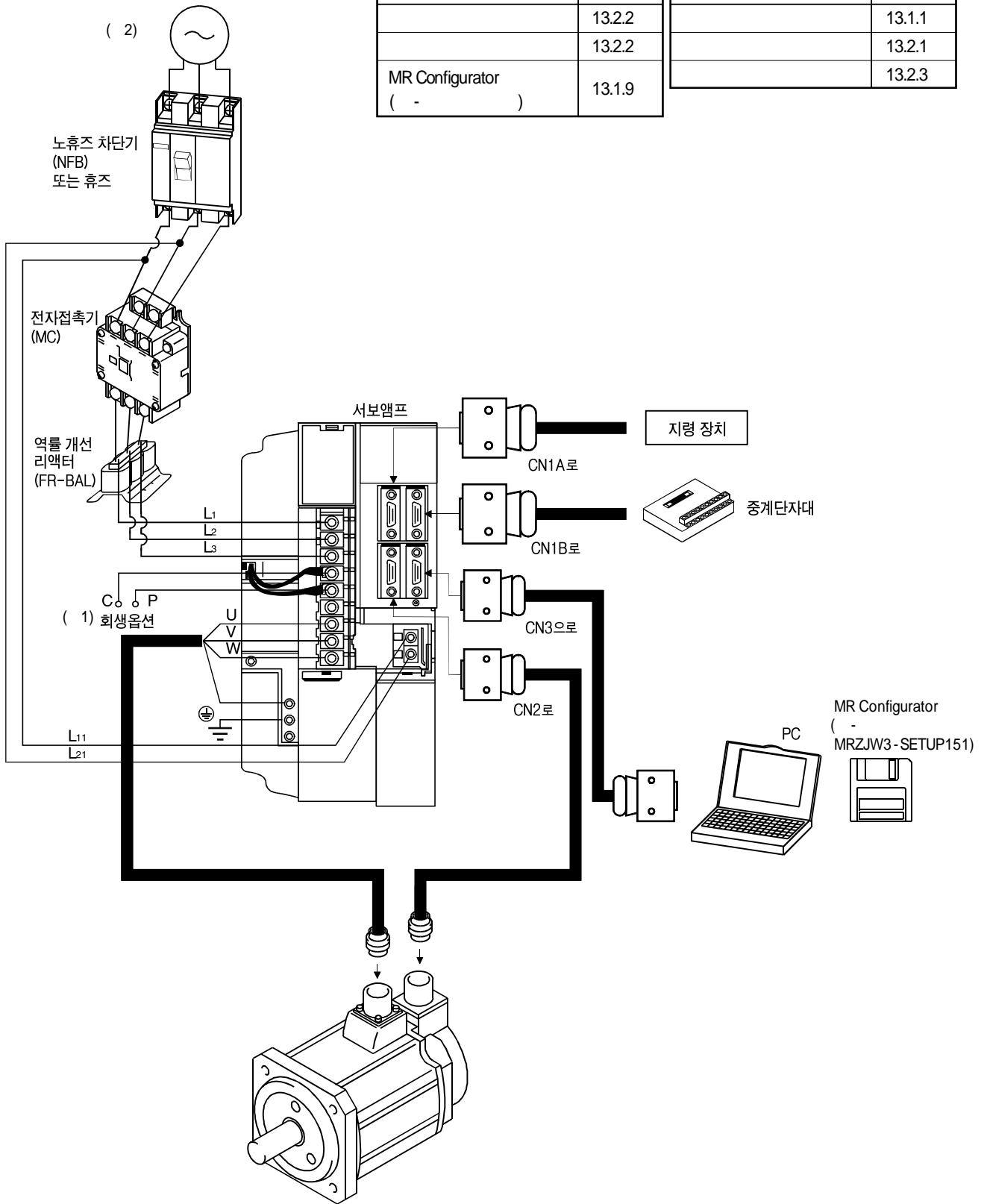
(2) MR-J2S-200A · MR-J2S-350A



( ) , 1.3

(3) MR-J2S-500A

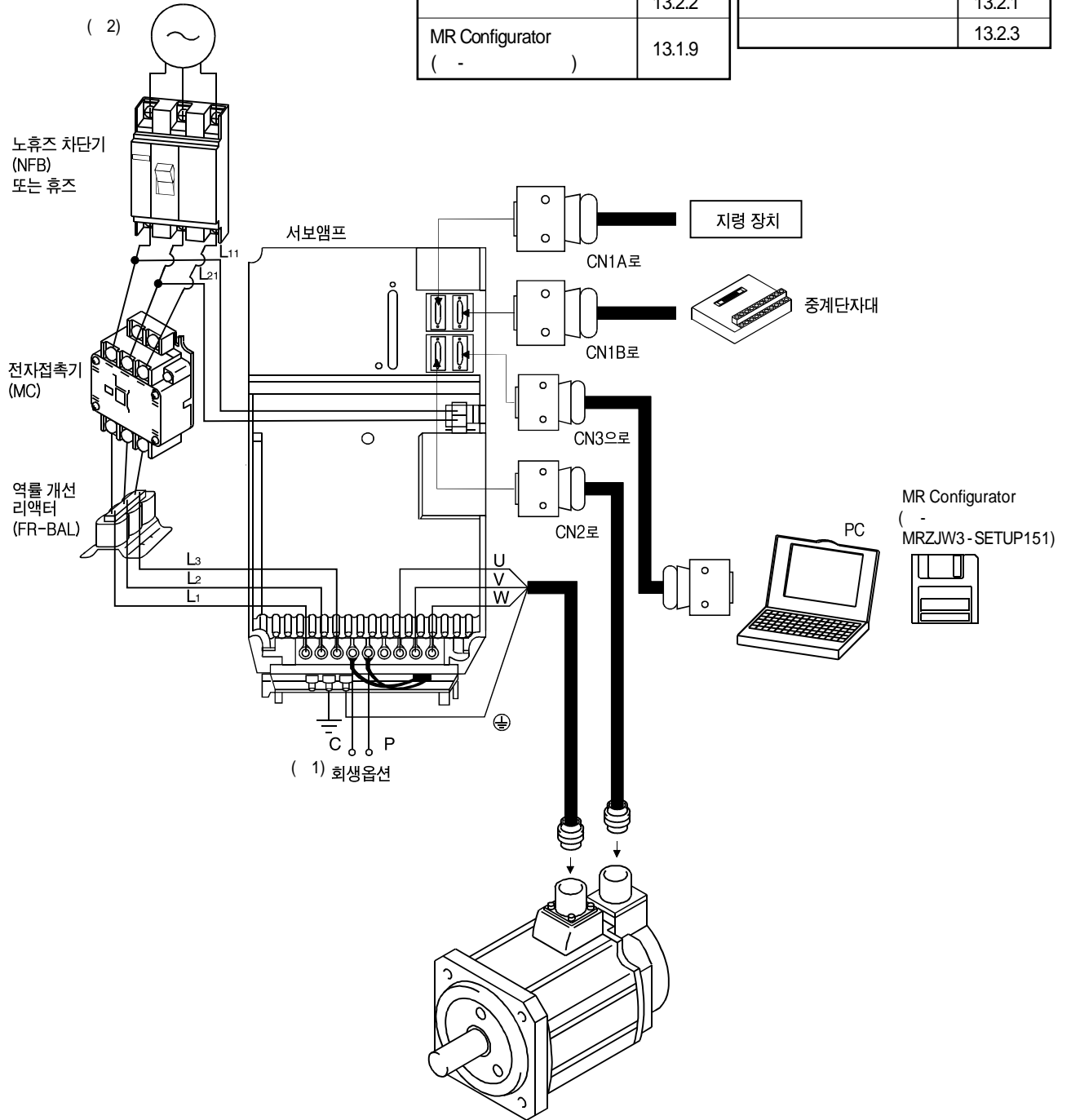
	13.2.2		13.1.1
	13.2.2		13.2.1
MR Configurator ( - )	13.1.9		13.2.3



( ) 1.  
2. , 1.3

(4) MR-J2S-700A

	13.2.2		13.1.1
	13.2.2		13.2.1
MR Configurator ( - )	13.1.9		13.2.3

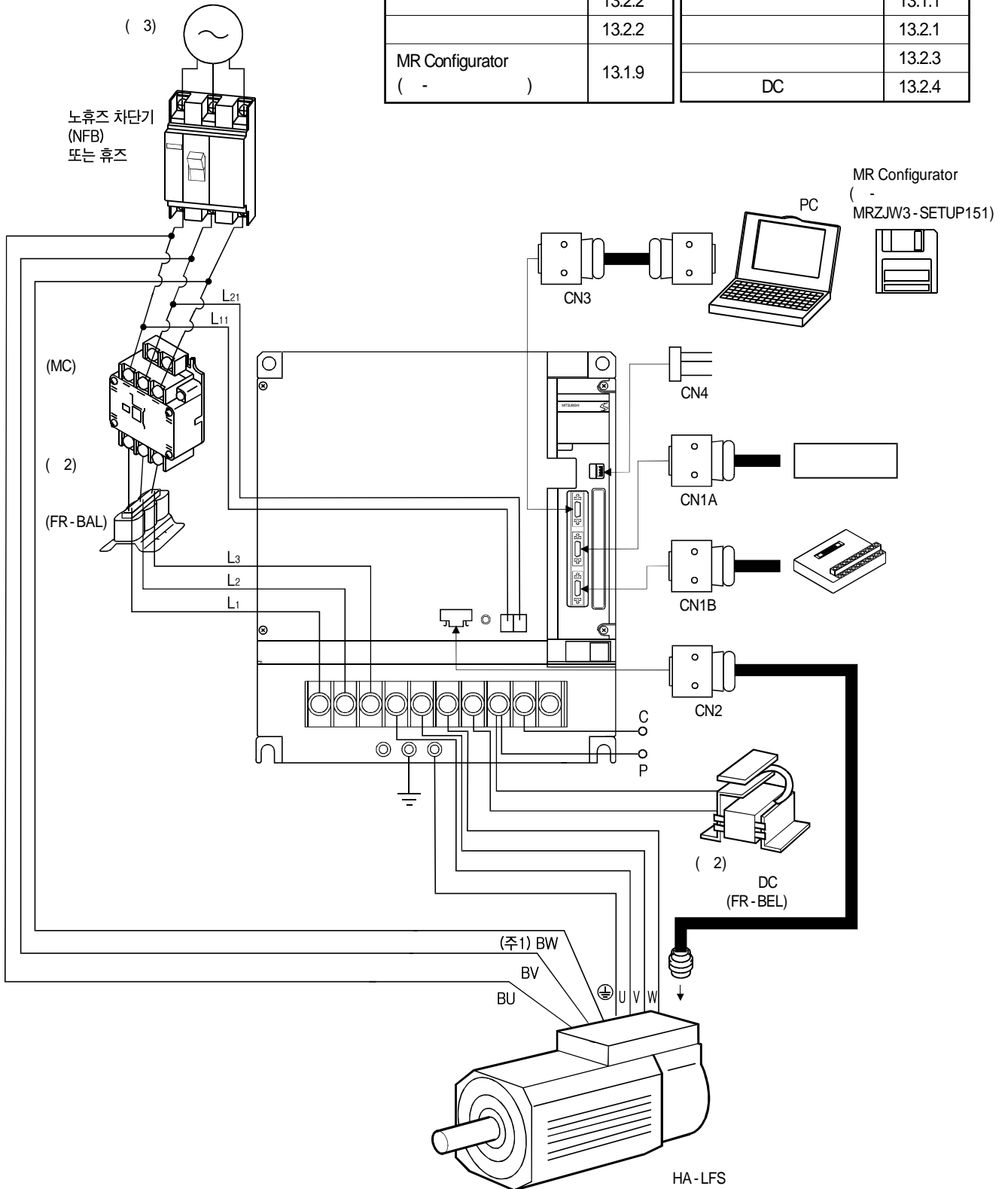


( ) 1.  
2. , 1.3



(5) MR-J2S-11KA

	13.2.2		13.1.1
	13.2.2		13.2.1
MR Configurator ( - )	13.1.9		13.2.3
		DC	13.2.4



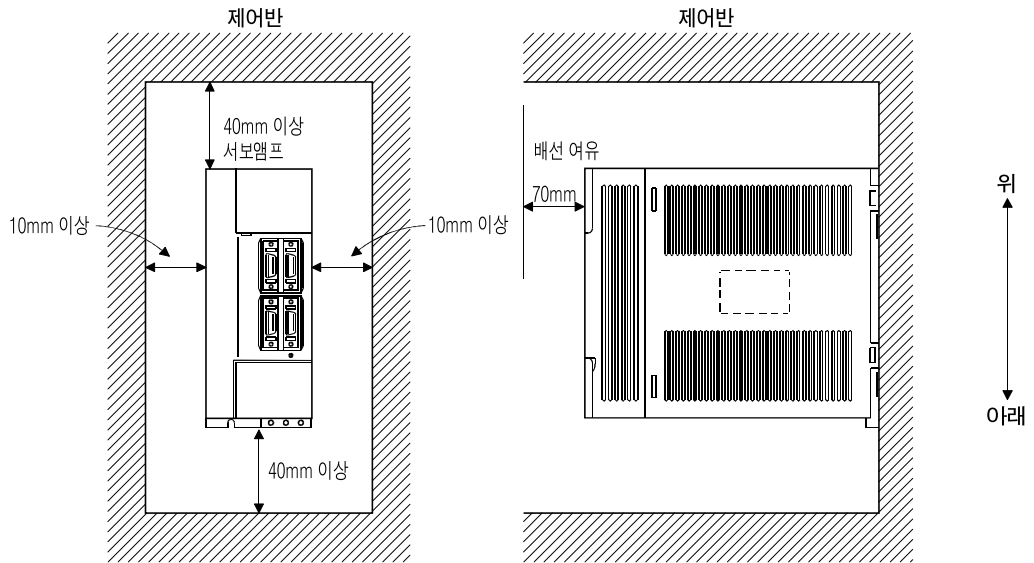
- ( ) 1. HA - LFA11K2 , BW
- 2. FR - BAL FR - BEL
- 3. , 1.3



2. 2

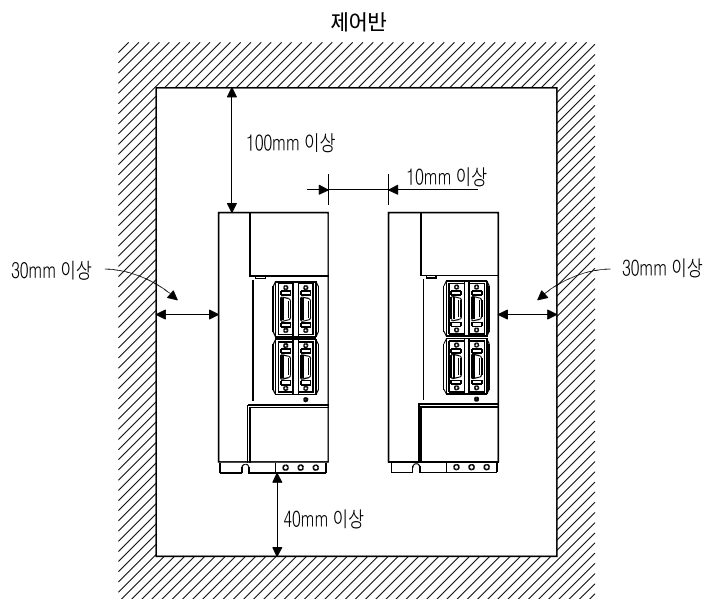
⚠ 주의

(1) 1



(2) 2

가



(3)

2. 3

- (1) 가 가 가 .
- (2) 가 . . 가
- (3) 가 가 ( 가 ,  
가 가 ) , 가 ,

2. 4

- (1) 가가 , .
- (2) 가 가 , 가가 가
- (3) 가 , 가 , 가 .
- (4) 가 ,가 .  
12.4 .



3

가 , OFF , 15  
 가 , P-N  
 가 ,

⚠ 위험

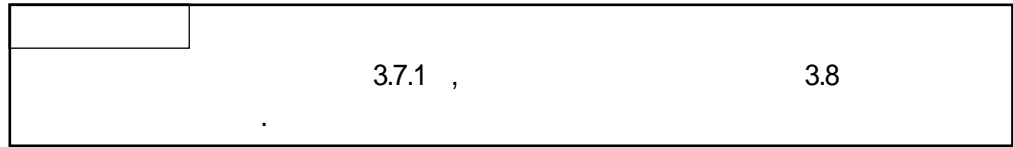
가  
 (+, -)  
 DC  
 가 , (EMG) 가

⚠ 주의

( FR - BIF)  
 가 가

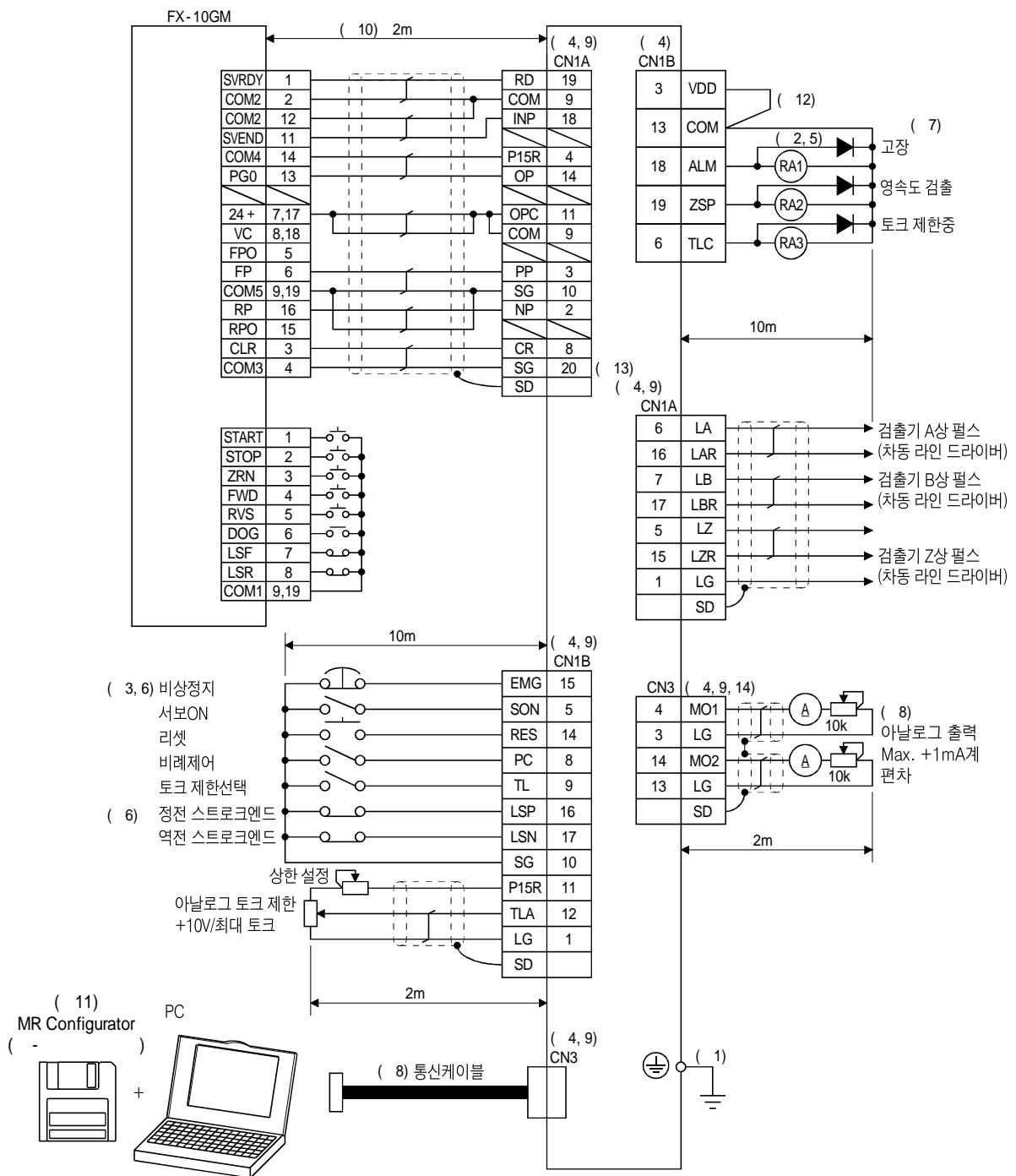
CN1A · CN1B · CN2	CN3

3.1

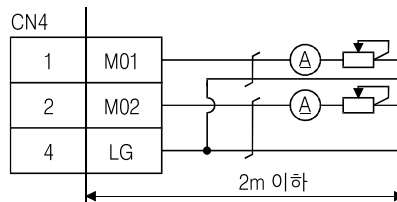


3.1.1

(1) FX-10GM

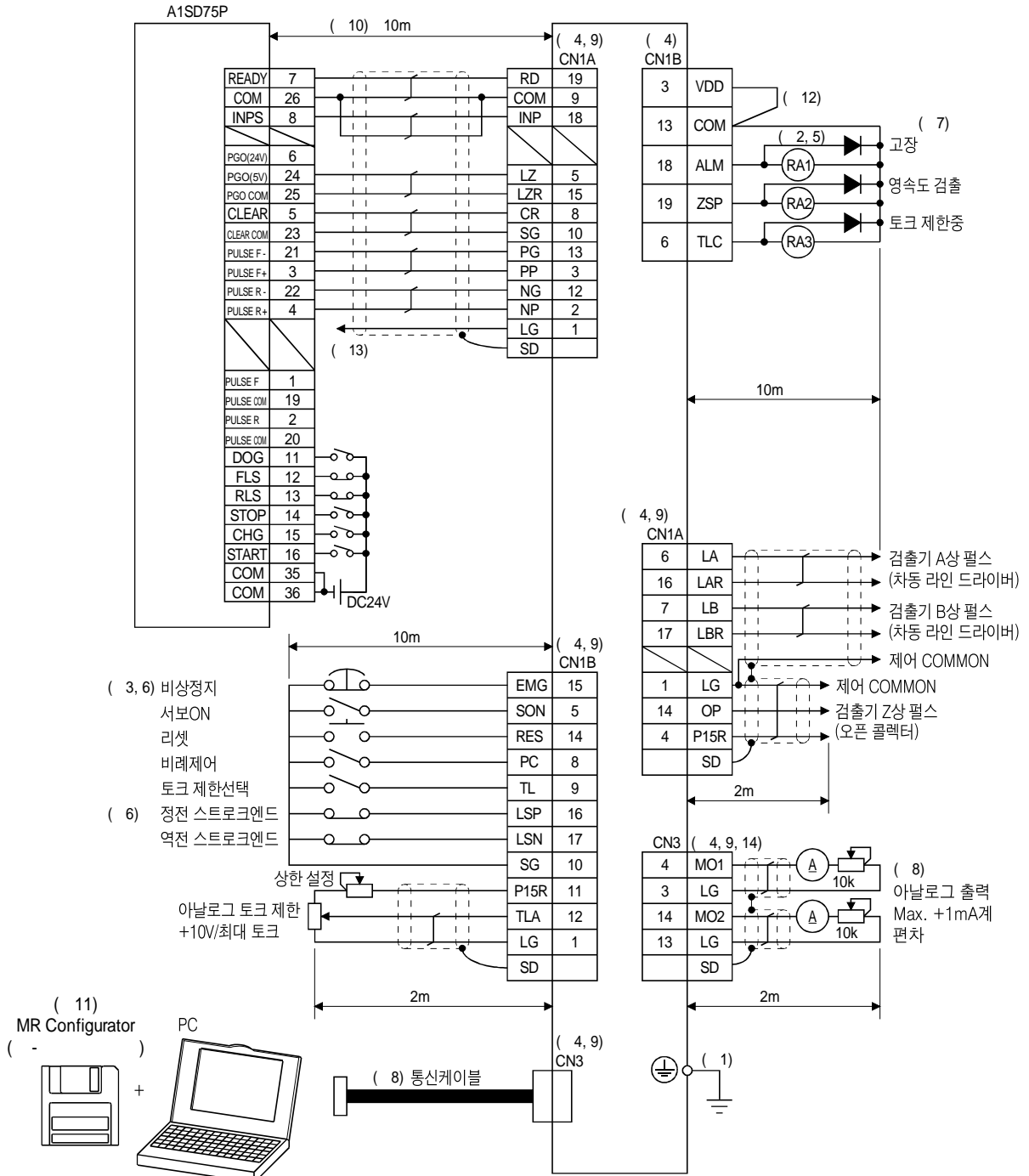


- ( ) 1. (PE) (⊖ 가 ) (PE)
- 2. 가 가
- 3. (B )
- 4. CN1A · CN1B · CN2 CN3
- 5. 80mA 가 . 80mA
- 6. (EMG), (LSP), (LSN)
- 7. (ALM) SG .OFF ( )
- 8. 1 · 2 PC , 가 (MR - J2CN3TM)
- (13.15 )
- 9.
- 10. 10m
- 11. MRZJW3 - SETUP161E
- 12. (VDD) , VDD - COM
- . 3.6.2
- 13. (MR - TB20) CN1A - 10
- 14. 11kW , 1(M01) · 2(M02) CN4가

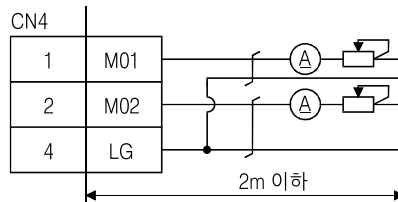




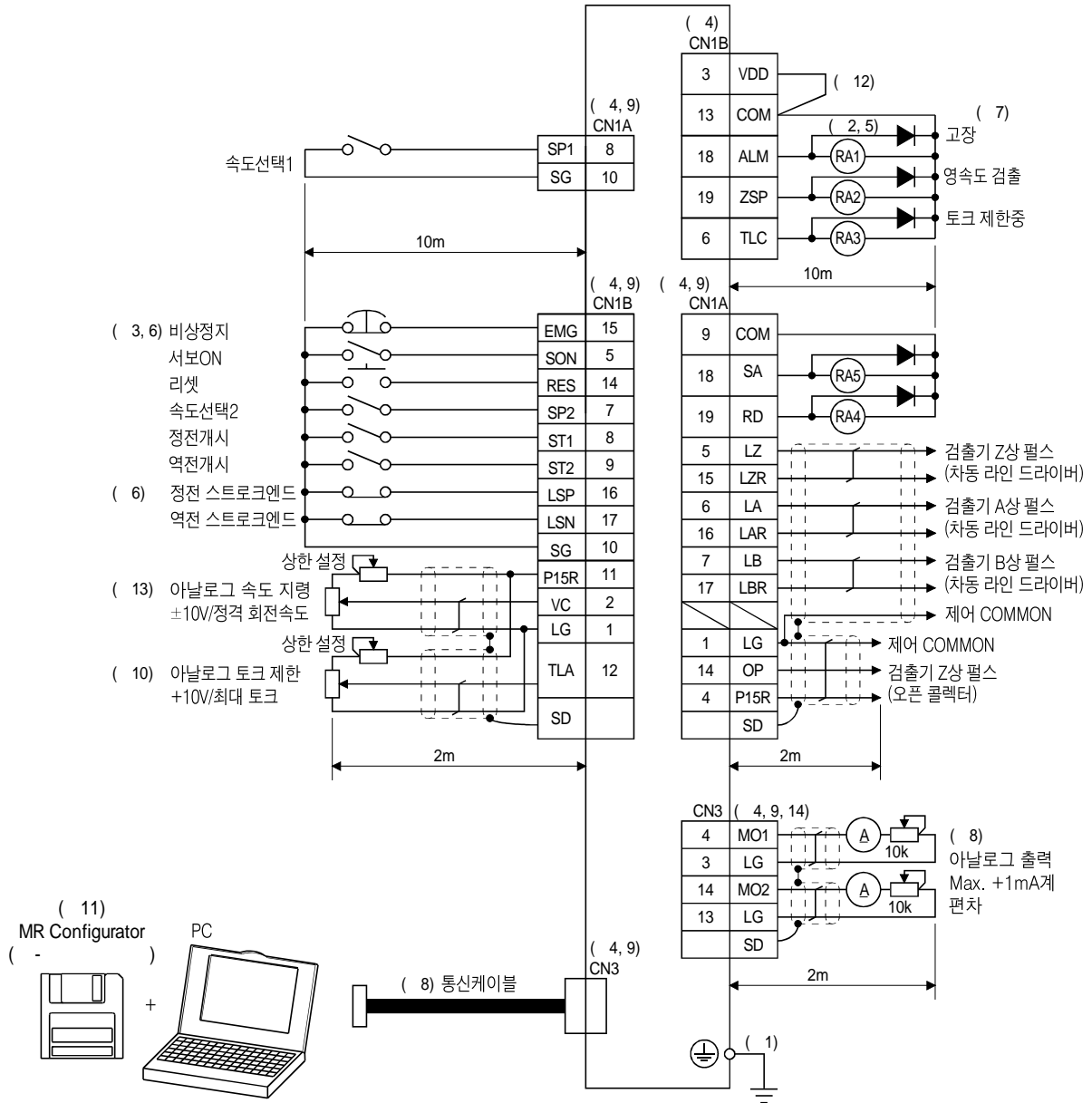
(2) AD75P (A1SD75P )



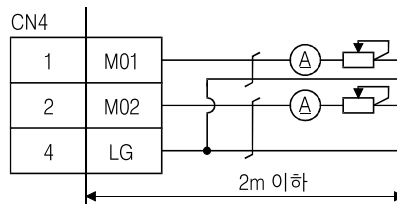
- ( ) 1. (PE) (⊖ 가 ) (PE)
- 2. 가 가
- 3. (B )
- 4. CN1A · CN1B · CN2 CN3
- 5. 80mA 가 .80mA
- 6. (EMG), (LSP), (LSN)
- 7. (ALM) (B ) SG .OFF ( )
- 8. 1 · 2 PC , 가 (MR-J2CN3TM)
- (13.15 )
- 9.
- 10. 2m
- 11. MRZJW3 - SETUP161E
- 12. (VDD) , VDD - COM
- 13. 3.6.2 LG COM
- 14. 11kW , 1(M01) · 2(M02) CN4가



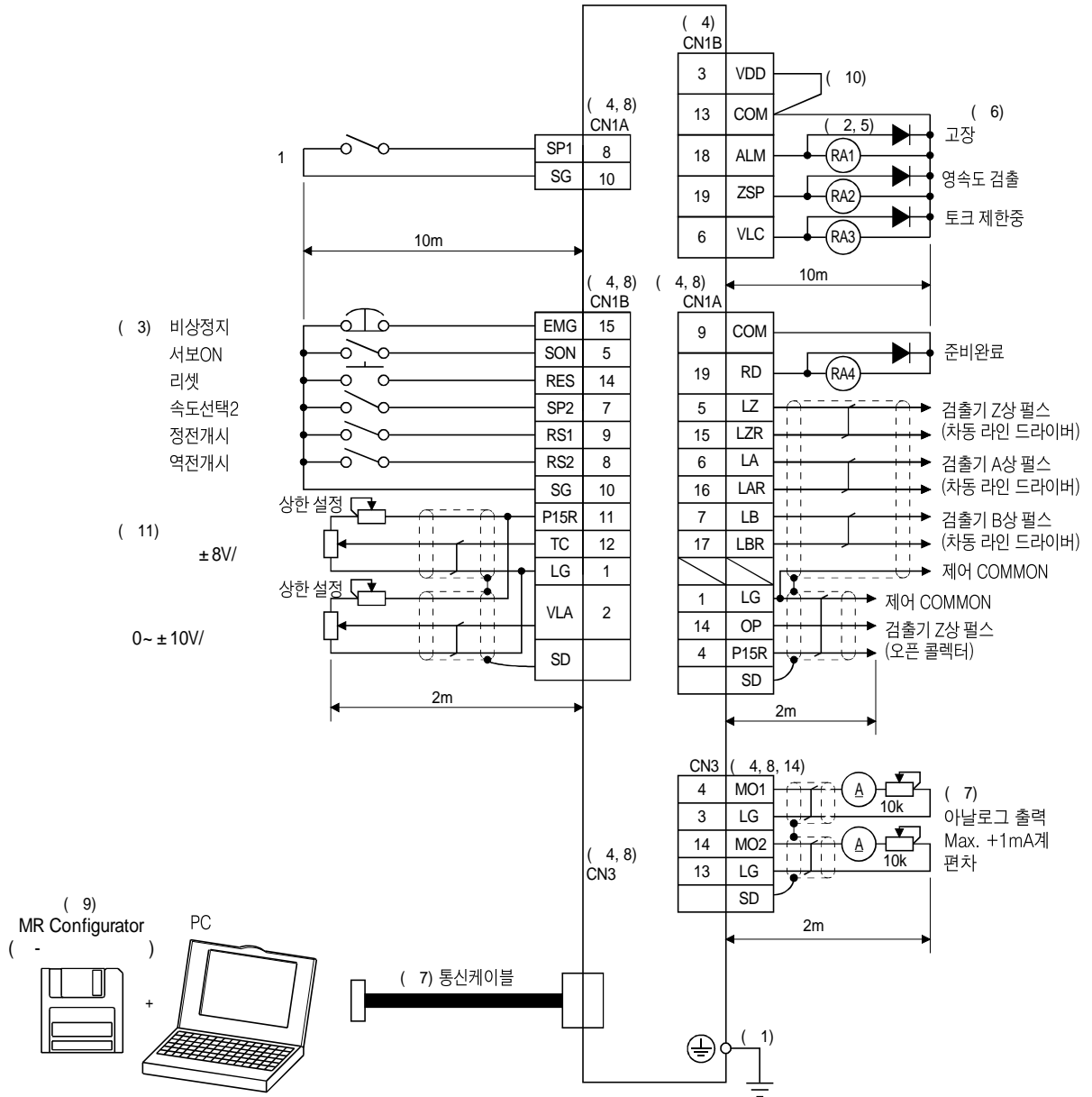
3.1.2



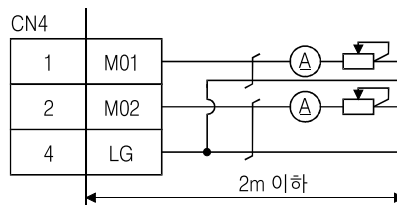
- ( ) 1. (PE) (⊖ 가 ) (PE)
- 2. 가 가
- 3. (B )
- 4. CN1A · CN1B · CN2 CN3
- 5. 80mA 가 .80mA
- 6. (EMG), (LSP), (LSN)
- 7. (ALM) (B ) SG .OFF ( )
- 8. 1 · 2 PC , 가 (MR-J2CN3TM)
- (13.15 )
- 9.
- 10. No.43~48 (TL) TLA
- 11. MRZJW3 - SETUP161E
- 12. (VDD) , VDD - COM
- .3.6.2
- 13.
- 14. 11kW , 1(M01) · 2(M02) CN4가



3.1.3



- ( ) 1. (PE) (⊖ 가 ) (PE)
- 2. 가 가
- 3. (B )
- 4. CN1A · CN1B · CN2 CN3
- 5. 80mA 가 .80mA
- 6. (ALM) SG .OFF ( )
- 7. 1 · 2 PC , 가 (MR - J2CN3TM)
- (13.15 )
- 8.
- 9. MRZJW3 - SETUP161E
- 10. (VDD) , VDD - COM
- .3.6.2
- 11.
- 12. 11kW , 1(M01) · 2(M02) CN4가

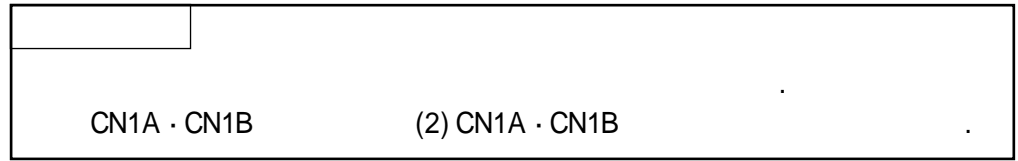




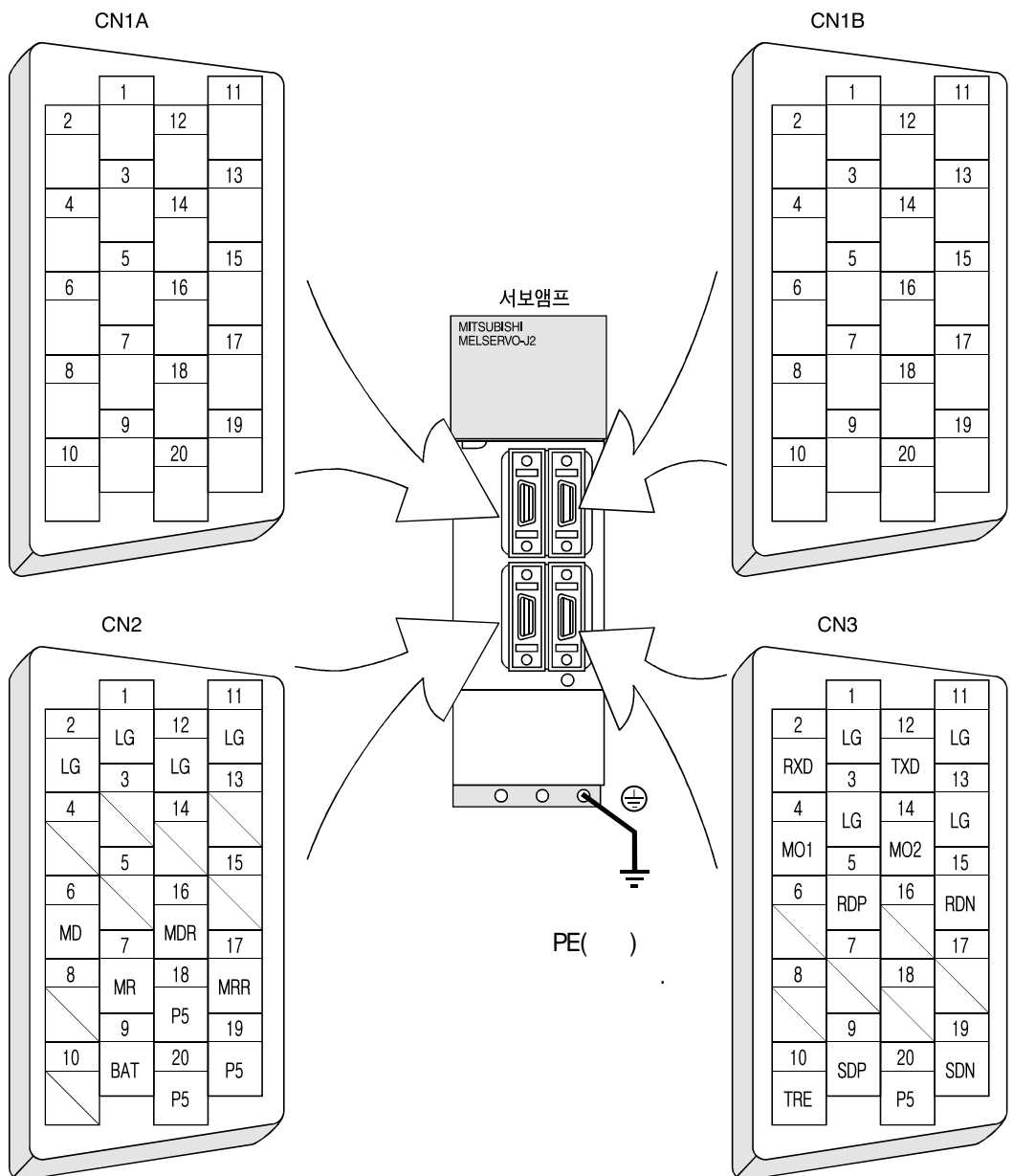
3.

3. 3

3.3.1

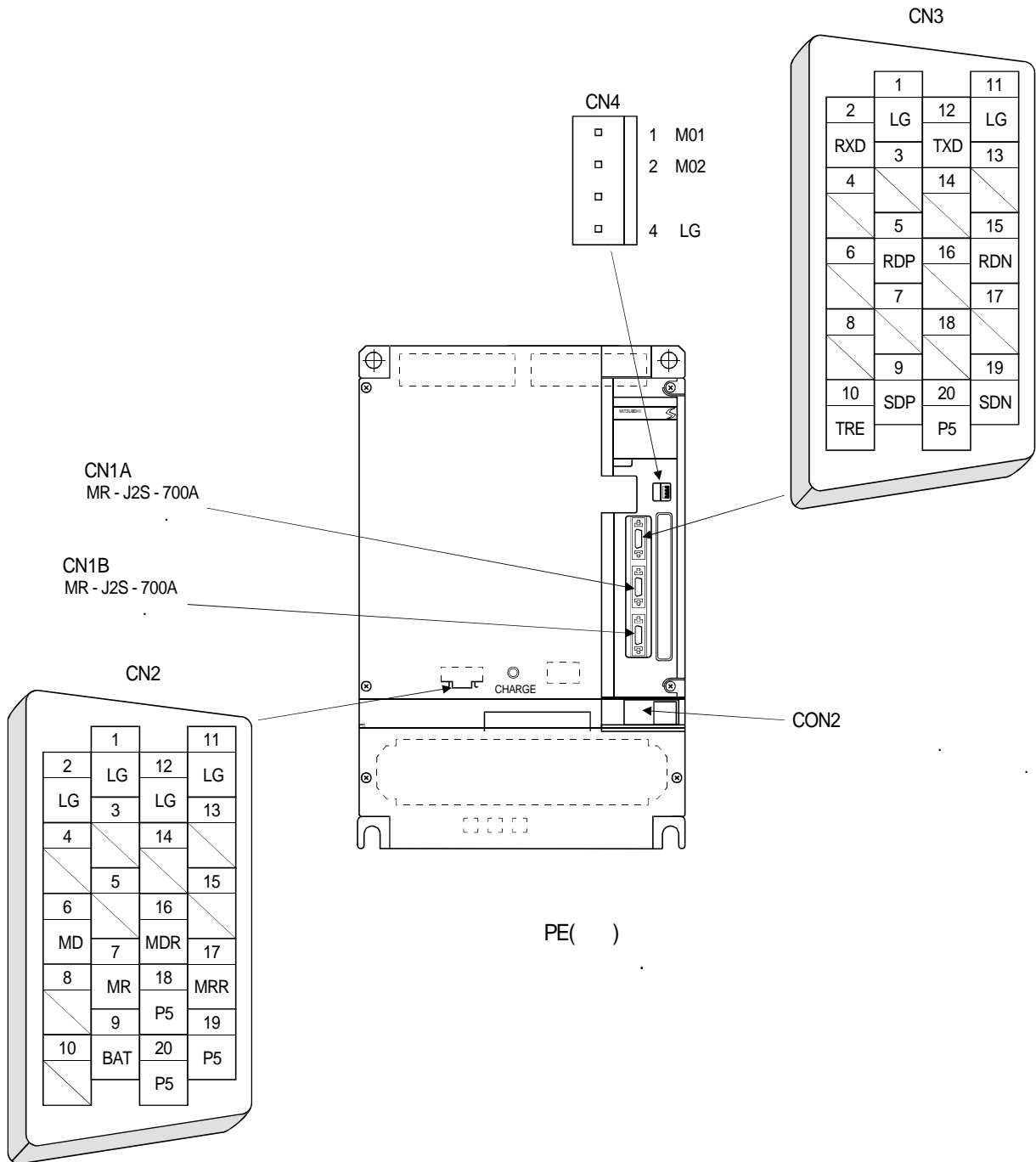


(1)  
(a) MR - J2S - 700A





(b) MR - J2S - 11KA



(2) CN1A/CN1B

No. 가

	No.	( 1 ) I/O	( 2 )						
			P	P/S	S	S/T	T		T/P
CN1A	1		LG	LG	LG	LG	LG	LG	
	2	I	NP	NP/-				-/NP	
	3	I	PP	PP/-				-/PP	
	4		P15R	P15R/P15R	P15R	P15R	P15R	P15R	
	5	O	LZ	LZ	LZ	LZ	LZ	LZ	
	6	O	LA	LA	LA	LA	LA	LA	
	7	O	LB	LB	LB	LB	LB	LB	
	8	I	CR	CR/SP1	SP1	SP1/SP1	SP1	SP1/CR	No.43~48
	9		COM	COM	COM	COM	COM	COM	
	10		SG	SG	SG	SG	SG	SG	
	11		OPC	OPC/-				-/OPC	
	12	I	NG	NG/-				-/NG	
	13	I	PG	PG/-				-/PG	
	14	O	OP	OP	OP	OP	OP	OP	
	15	O	LZR	LZR	LZR	LZR	LZR	LZR	
	16	O	LAR	LAR	LAR	LAR	LAR	LAR	
	17	O	LBR	LBR	LBR	LBR	LBR	LBR	
	18	O	INP	INP/SA	SA	SA/-		-/INP	No.49
	19	O	RD	RD	RD	RD	RD	RD	No.49
	20		SG	SG	SG	SG	SG	SG	
CN1B	1		LG	LG	LG	LG	LG	LG	
	2	I		-/VC	VC	LG/VLA	VLA	VLA/-	
	3		VDD	VDD	VDD	VDD	VDD	VDD	
	( 4 ) 4	O	DO1	DO1	DO1	DO1	DO1	DO1	
	5	I	SON	SON	SON	SON	SON	SON	No.43~48
	6	O	TLC	TLC	TLC	TLC/VLC	VLC	VLC/TLC	No.49
	7	I		LOP	SP2	LOP	SP2	LOP	No.43~48
	8	I	PC	PC/ST1	ST1	ST1/RS2	RS2	RS2/PC	No.43~48
	9	I	TL	TL/ST2	ST2	ST2/RS1	RS1	RS1/TL	No.43~48
	10		SG	SG	SG	SG	SG	SG	
	11		P15R	P15R	P15R	P15R	P15R	P15R	
	12	I	TLA	( 3 ) TLA/TLA	( 3 ) TLA	( 3 ) TLA/TC	TC	TC/TLA	
	13		COM	COM	COM	COM	COM	COM	
	14	I	RES	RES	RES	RES	RES	RES	No.43~48
	15	I	EMG	EMG	EMG	EMG	EMG	EMG	
	16	I	LSP	LSP	LSP	LSP/-		-/LSP	
	17	I	LSN	LSN	LSN	LSN/-		-/LSN	
	18	O	ALM	ALM	ALM	ALM	ALM	ALM	No.49
	19	O	ZSP	ZSP	ZSP	ZSP	ZSP	ZSP	No.1, 49
	20		SG	SG	SG	SG	SG	SG	

)

- ( ) 1. I: , O:
- 2. P: , S: , T:  
P/S: / , S/T: / , T/P: /
- 3. No.43~48 TL ,TLA .
- 4. CN1A - 18 ,CN1A - 18 ,

(3)

SON	ON	VLC	
LSP		RD	
LSN		ZSP	
CR		INP	
SP1	1	SA	
SP2	2	ALM	
PC		WNG	
ST1		BWNG	
ST2		OP	Z ( )
TL		MBR	
RES		LZ	Z ( )
EMG		LZR	
LOP		LA	A ( )
VC		LAR	
VLA		LB	B ( )
TLA		LBR	
TC		VDD	I/F
RS1		COM	I/F
RS2		OPC	
PP		SG	I/F (COMMON)
NP		P15R	DC15V
PG		LG	(COMMON)
NG		SD	
TLC			

3.3.2 ( )

( I/O ) 3.6.2

P: , S: , T: 가 , : No.43~49 가  
No. No.

(1)

		No.		I/O																													
				P	S	T																											
ON	SON	CN1B 5	SON ON , 가 , 가 가 . ( ON ) OFF No.41 “ 1 ” , 가 ( OFF ) ON( ON)	DI - 1																													
	RES	CN1B 14	RES 50ms ON , .10.2 No.51 “ 1 ” RES ON	DI - 1																													
	LSP	CN1B 16	LSP · LSN - SG ON OFF No.22 “ 1 ” 가 (5.2.3 )	DI - 1																													
	LSN	CN1B 17	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <th colspan="4">( )</th> </tr> <tr> <th>LSP</th> <th>LSN</th> <th>CCW</th> <th>CW</th> </tr> <tr> <td>1</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> <td></td> </tr> <tr> <td>0</td> <td>0</td> <td></td> <td></td> </tr> </table> <p>( ) 0 : OFF 1 : ON No.41 ON( )</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>No. 41</td> <td>ON</td> </tr> <tr> <td>1</td> <td>LSP</td> </tr> <tr> <td>1</td> <td>LSN</td> </tr> </table>				( )				LSP	LSN	CCW	CW	1	1			0	1			1	0			0	0			No. 41	ON	1
( )																																	
LSP	LSN	CCW	CW																														
1	1																																
0	1																																
1	0																																
0	0																																
No. 41	ON																																
1	LSP																																
1	LSN																																
	TL	CN1B 9	TL OFF 1( No.28), ON (TLA) 3.4.1 (5)	DI - 1																													
	TL1		No.43~48 가 3.4.1 (5)	DI - 1																													

		No.		I/O																					
					P	S	T																		
	ST1	CN1B 8	<table border="1"> <thead> <tr> <th colspan="2">( )</th> <th></th> </tr> <tr> <th>ST2</th> <th>ST1</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>( )</td> </tr> <tr> <td>0</td> <td>1</td> <td>CCW</td> </tr> <tr> <td>1</td> <td>0</td> <td>CW</td> </tr> <tr> <td>1</td> <td>1</td> <td>( )</td> </tr> </tbody> </table> <p>( ) 0: OFF 1: ON</p>	( )			ST2	ST1		0	0	( )	0	1	CCW	1	0	CW	1	1	( )	DI - 1			
( )																									
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0	0	( )																							
0	1	CCW																							
1	0	CW																							
1	1	( )																							
	ST2	CN1B 9	ST1 ST2 ON OFF , No.12																						
	RS1	CN1B 9	<table border="1"> <thead> <tr> <th colspan="2">( )</th> <th></th> </tr> <tr> <th>RS2</th> <th>RS1</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td></td> </tr> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>0</td> <td></td> </tr> <tr> <td>1</td> <td>1</td> <td></td> </tr> </tbody> </table> <p>( ) 0: OFF 1: ON</p>	( )			RS2	RS1		0	0		0	1		1	0		1	1		DI - 1			
( )																									
RS2	RS1																								
0	0																								
0	1																								
1	0																								
1	1																								
	RS2	CN1B 8																							
	EMG	CN1B 15	EMG OFF( ) 가 OFF가 , 가 EMG ON( )	DI - 1																					
	CR	CN1A 8	CR ON , 10ms No.42 " 1 " ,CR ON	DI - 1																					
1	CM1		CM1 · CM2 , No.43~48 가 CM1 · CM2 4 CM1 · CM2	DI - 1																					
2	CM2		<table border="1"> <thead> <tr> <th colspan="2">( )</th> <th></th> </tr> <tr> <th>CM2</th> <th>CM1</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>No.3</td> </tr> <tr> <td>0</td> <td>1</td> <td>No.69</td> </tr> <tr> <td>1</td> <td>0</td> <td>No.70</td> </tr> <tr> <td>1</td> <td>1</td> <td>No.71</td> </tr> </tbody> </table> <p>( ) 0: OFF 1: ON</p>	( )			CM2	CM1		0	0	No.3	0	1	No.69	1	0	No.70	1	1	No.71	DI - 1			
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CM2	CM1																								
0	0	No.3																							
0	1	No.69																							
1	0	No.70																							
1	1	No.71																							
	CDP		CDP ON , No.43~48 가 가 No.62~64 No.61 ,	DI - 1																					

		No.		I/O																																																												
				P	S	T																																																										
1	SP1	CN1A 8	< >	DI - 1																																																												
2	SP2	CN1B 7	SP3 No.43~48 가	DI - 1																																																												
3	SP3		<table border="1"> <thead> <tr> <th rowspan="2">No.43~48</th> <th colspan="3">( )</th> <th rowspan="2"></th> </tr> <tr> <th>SP3</th> <th>SP2</th> <th>SP1</th> </tr> </thead> <tbody> <tr> <td rowspan="3">(SP3) ( )</td> <td>0</td> <td>0</td> <td>0</td> <td>(VC)</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>1( No.8)</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>2( No.9)</td> </tr> <tr> <td rowspan="7">(SP3) ( )</td> <td>1</td> <td>1</td> <td>1</td> <td>3( No.10)</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td>(VC)</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>1( No.8)</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>2( No.9)</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>3( No.10)</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>4( No.72)</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>5( No.73)</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>6( No.74)</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>7( No.75)</td> </tr> </tbody> </table> <p>( ) 0: OFF 1: ON</p>	No.43~48	( )				SP3	SP2	SP1	(SP3) ( )	0	0	0	(VC)	0	1	0	1( No.8)	1	0	0	2( No.9)	(SP3) ( )	1	1	1	3( No.10)	0	0	0	(VC)	0	0	1	1( No.8)	0	1	0	2( No.9)	0	1	1	3( No.10)	1	0	0	4( No.72)	1	0	1	5( No.73)	1	1	0	6( No.74)	1	1	1	7( No.75)	DI - 1		
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	PC	CN1B 8	PC-SG 가 1 (MEND) OFF (MEND)가 OFF (PC) ON (TL) ON (PC) (TLA) 가	DI - 1																																																												

		No.		I/O																				
				P	S	T																		
	LOP	CN1B 7	<p>&lt; / &gt; /</p> <table border="1"> <tr><td>( ) LOP</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> </table> <p>( ) 0: OFF 1: ON</p> <p>&lt; / &gt; /</p> <table border="1"> <tr><td>( ) LOP</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> </table> <p>( ) 0: OFF 1: ON</p> <p>&lt; / &gt; /</p> <table border="1"> <tr><td>( ) LOP</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>1</td><td></td></tr> </table> <p>( ) 0: OFF 1: ON</p>	( ) LOP		0		1		( ) LOP		0		1		( ) LOP		0		1		DI - 1		
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	TLA	CN1B 12	<p>가 , No.43~48 TL</p> <p>(TLA) TLA - LG DC0~+10V 가 (TLA) + +10V (3.4.1 (5) ) : 10bit</p>																					
	TC		<p>TC - LG DC0~±8V 가 ±8V (3.4.3 (1) ) ±8V No.26</p>																					
	VC	CN1B 2	<p>VC - LG DC0~±10V 가 ±10V No.25 가 (3.4.2 (1) ) : 14bit</p>																					
	VLA		<p>VLA - LG DC0~±10V 가 ±10V No.25 가 (3.4.3 (3) )</p>																					
	PP NP PG NG	CN1A 3 CN1A 2 CN1A 13 CN1A 12	<p>( 200kpps)</p> <p>PP - SG NP - SG</p> <p>( 500kpps)</p> <p>PP - PP NG - NP</p> <p>No.21</p>	DI - 2																				

(2)

		No.		I/O			
					P	S	T
	ALM	CN1B 18	OFF ALM - SG ON 1s ALM - SG	DO - 1			
	DB		11kW 가 , DB가 OFF가 (13.14 )	DO - 1			
	RD	CN1A 19	ON 가 가 RD - SG	DO - 1			
	INP	CN1A 18	가 No.5 INP - SG 가	DO - 1			
	SA		가 SA - SG 가 50r/min	DO - 1			
	VLC	CN1B 6	1~7( No.8~10, 72~75) (VLA) ON(SON) OFF VLC - SG	DO - 1			
	TLC		1~7( No.28) (TLA) ON(SON) OFF TLC - SG	DO - 1			
	ZSP	CN1B 19	가 (50r/min) , ZSP - SG No.24	DO - 1			
	MBR	[CN1B 19]	, ZSP OFF , MBR - SG	DO - 1			
	WNG		No.49 가 , WNG - SG 가 ON 1s WNG - SG	DO - 1			
	BWNG		No.49 (AL.92) (AL.9F)가 BWNG - SG 가 ON 1s BWNG - SG	DO - 1			



		No.		I/O																																																																														
				P	S	T																																																																												
			No.49 “ 1 ” (RD · INP · SA · ZSP)																																																																															
	ACD0	CN1A 19	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3">( )</th> <th></th> <th></th> </tr> <tr> <th>CN1B 19</th> <th>CN1A 18</th> <th>CN1A 19</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="8">0</td> <td rowspan="8">0</td> <td rowspan="8">0</td> <td>88888</td> <td></td> </tr> <tr> <td>AL.12</td> <td style="text-align: center;">1</td> </tr> <tr> <td>AL.13</td> <td></td> </tr> <tr> <td>AL.15</td> <td style="text-align: center;">2</td> </tr> <tr> <td>AL.17</td> <td></td> </tr> <tr> <td>AL.19</td> <td style="text-align: center;">3</td> </tr> <tr> <td>AL.37</td> <td></td> </tr> <tr> <td>AL.8A</td> <td></td> </tr> <tr> <td rowspan="2">0</td> <td rowspan="2">0</td> <td rowspan="2">1</td> <td>AL.30</td> <td></td> </tr> <tr> <td>AL.33</td> <td></td> </tr> <tr> <td rowspan="5">0</td> <td rowspan="5">1</td> <td rowspan="5">0</td> <td>AL.10</td> <td></td> </tr> <tr> <td>AL.45</td> <td></td> </tr> <tr> <td>AL.46</td> <td></td> </tr> <tr> <td>AL.50</td> <td style="text-align: center;">1</td> </tr> <tr> <td>AL.51</td> <td style="text-align: center;">2</td> </tr> <tr> <td rowspan="2">1</td> <td rowspan="2">0</td> <td rowspan="2">0</td> <td>AL.24</td> <td></td> </tr> <tr> <td>AL.32</td> <td></td> </tr> <tr> <td rowspan="3">1</td> <td rowspan="3">0</td> <td rowspan="3">1</td> <td>AL.31</td> <td></td> </tr> <tr> <td>AL.35</td> <td></td> </tr> <tr> <td>AL.52</td> <td></td> </tr> <tr> <td rowspan="4">1</td> <td rowspan="4">1</td> <td rowspan="4">0</td> <td>AL.16</td> <td style="text-align: center;">1</td> </tr> <tr> <td>AL.1A</td> <td></td> </tr> <tr> <td>AL.20</td> <td style="text-align: center;">2</td> </tr> <tr> <td>AL.25</td> <td></td> </tr> </tbody> </table> <p>( ) 0 : OFF 1 : ON</p>	( )					CN1B 19	CN1A 18	CN1A 19			0	0	0	88888		AL.12	1	AL.13		AL.15	2	AL.17		AL.19	3	AL.37		AL.8A		0	0	1	AL.30		AL.33		0	1	0	AL.10		AL.45		AL.46		AL.50	1	AL.51	2	1	0	0	AL.24		AL.32		1	0	1	AL.31		AL.35		AL.52		1	1	0	AL.16	1	AL.1A		AL.20	2	AL.25		DO - 1		
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Z ( )	OP	CN1A 14	가 OP가 ON 400μs 100r/min	1 1 ( (- ) )	DO - 2																																																																													
A ( )	LA LAR	CN1A 6 CN1A 16	No.27( ) CCW	B A	DO - 2																																																																													
B ( )	LB LBR	CN1A 7 CN1A 17	/2 A · B	No.54																																																																														

		No.			I/O			
		7kW	11kW			P	S	T
Z ( )	LZ LZR	CN1A 5 CN1A 15	CN1A 5 CN1A 15	OP	DO-2			
1	MO1	CN3 4	CN4 1	No.17 : 10bit	MO1 - LG			
2	MO2	CN3 14	CN4 2	No.17 : 10bit	MO2 - LG			

(3)

	14
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		No.		I/O			
					P	S	T
RS - 422 I/F	SDP SDN RDP RDN	CN3 9 CN3 19 CN3 5 CN3 15	RS - 422 RS - 232C No.16	/			
RS - 422	TRE	CN3 10	RS - 422 I/F 가 RDN(CN3 - 15)	/			
RS - 232C I/F	TXD RXD	CN3 2 CN3 12	RS - 422 RS - 232C No.16	/			

(4)

		No.			I/O			
		7kW	11kW			P	S	T
I/F	VDD	CN1B 3	CN1B 3	VDD - SG +24V ± 10% COM : 80mA	/			
I/F	COM	CN1A 9 CN1B 13	CN1A 9 CN1B 13	DC24V(200mA) DC24V ± 10%	/			
	OPC	CN1A 11	CN1A 11	DC24V	/			
I/F (COMMON)	SG	CN1A 10 20 CN1B 10 20	CN1A 10 20 CN1B 10 20	SON · EMG LG	/			
DC15V	P15R	CN1A 4 CN1B 11	CN1A 4 CN1B 11	P15R - LG DC15V TC · TLA · VC · VLA : 30mA	/			
(COMMON)	LG	CN1A 1 CN1B 1 CN3 1, 11 3, 13	CN1A 1 CN1B 1 CN3 1, 11 3, 13 CN4 4	TLA · TC · VC · VLA · FPA · FPB · OP · MO1 · MO2 · P15R	/			
	SD				/			

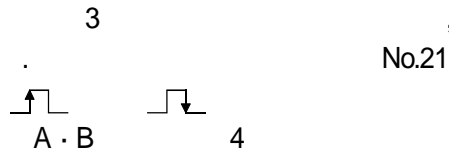
3.

3. 4

3.4.1

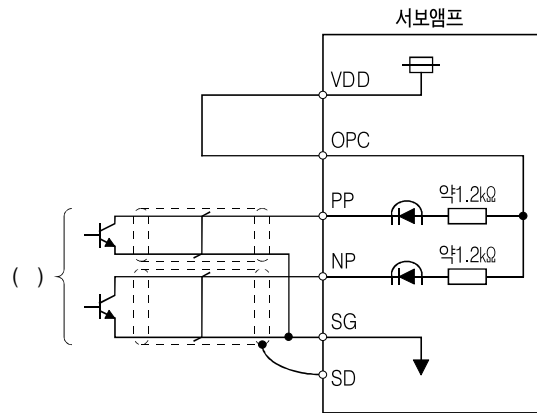
(1)

(a)



			No.21 ( )
			0010
	+		0011
	A B		0012
			0000
	+		0001
	A B		0002

(b)



( ) (photo-coupler) 가

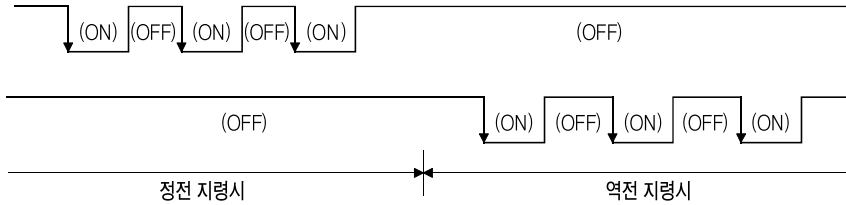
( No.21 0010)

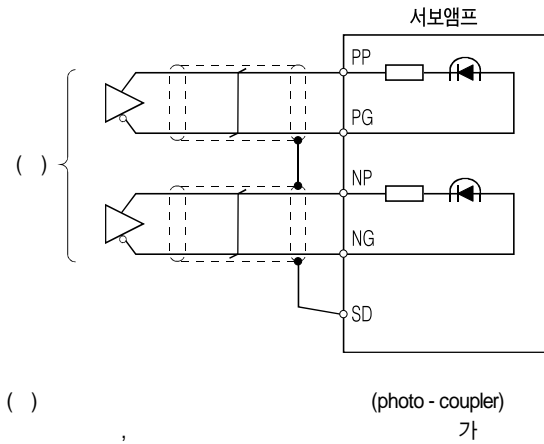
(1)(a) , SG PP

NP

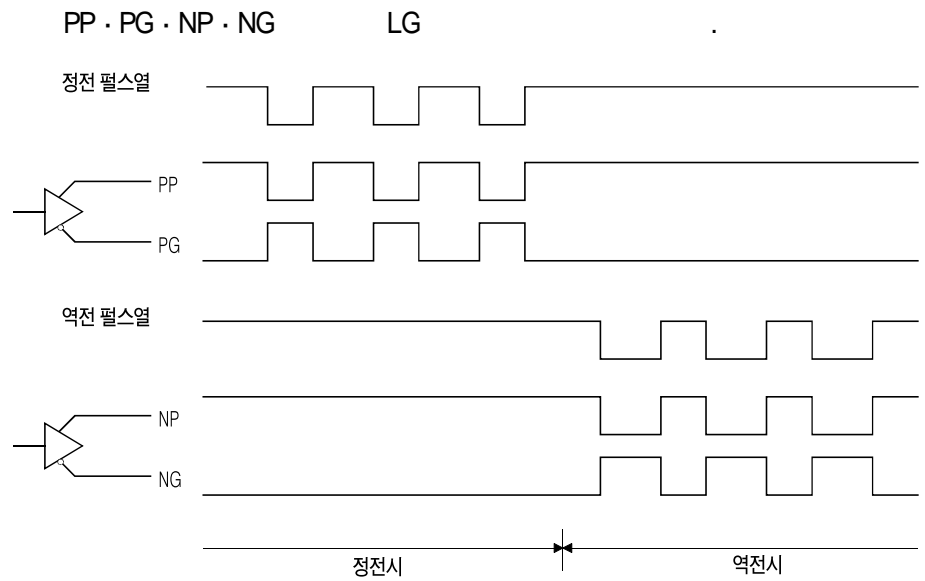
정전 펄스열(트랜지스터)

역전 펄스열(트랜지스터)

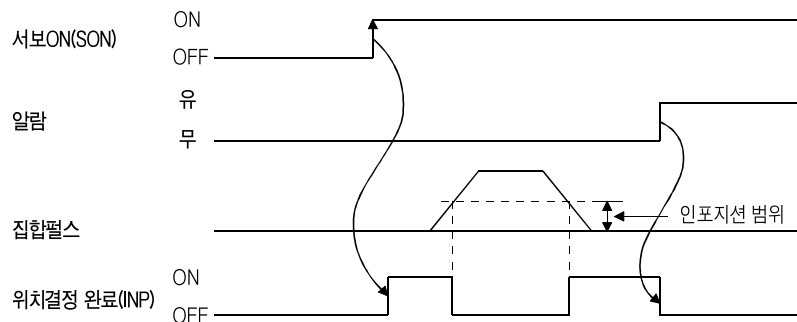




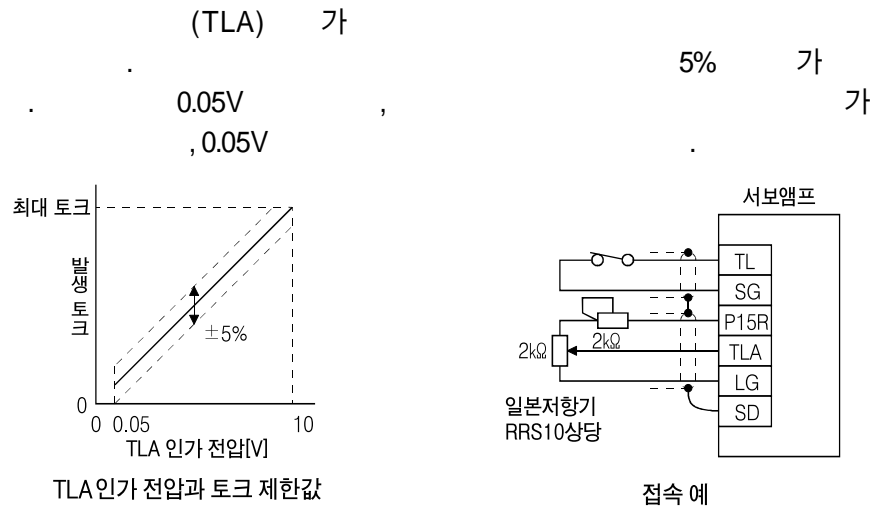
( No.21 0010 )  
(1)(a)



(2) (INP) 가 ( No.5 ) 가 ,  
INP - SG 가







(b)

(TL) 1( No.28)

(TLA) 2( No.76)

No.43~48

(TL1) 가 , TL · TL1

No.28

No.28

( )		가	
TL1	TL		
0	0	1( No.28)	
0	1	TLA > No.28 : No.28	No.28 : TLA
1	0	No.76 > No.28 : No.28	No.28 : No.76
1	1	TLA > No.76 : No.76	No.76 : TLA

( ) 0: OFF  
1: ON

(c) (TLC) 가 1

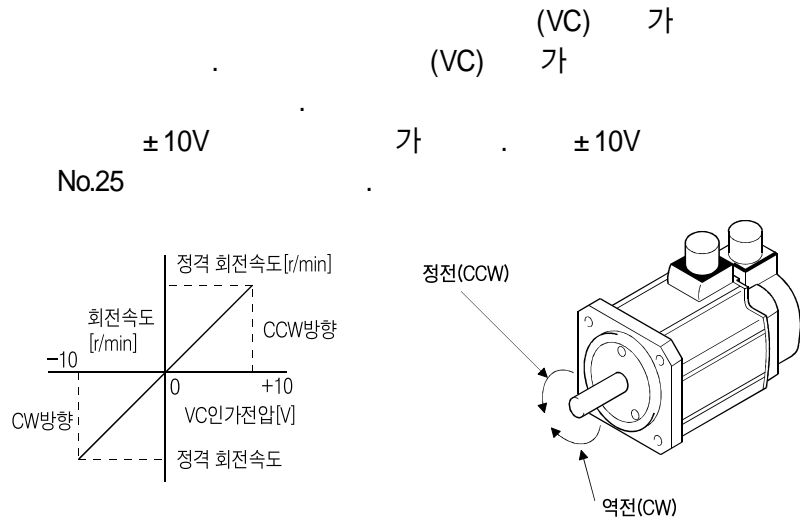
TLC가 ON



3.4.2

(1)

(a)

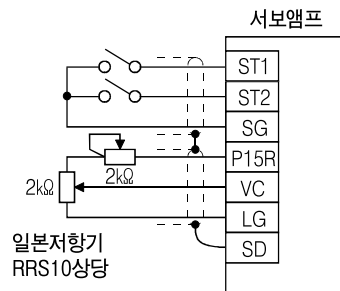


(ST1) (ST2)

( 1 )		( 2 )			
ST2	ST1	(VC)			
		+	0V	-	
0	0	( )	( )	( )	( )
0	1	CCW	( )	CW	CCW
1	0	CW		CCW	CW
1	1	( )	( )	( )	( )

( ) 1. 0 : OFF  
1 : ON  
2.

(ST1) (ST2) No.43~48 CN1A, CN1B



(b) 1(SP1) · 2(SP2) 1~3  
 1(SP1) · 2(SP2) (VC)

( )		
SP2	SP1	
0	0	(VC)
0	1	1( No.8)
1	0	2( No.9)
1	1	3( No.10)

( ) 0: OFF  
 1: ON

No.43~48 3(SP3) 가 ,  
 (VC) 1~7

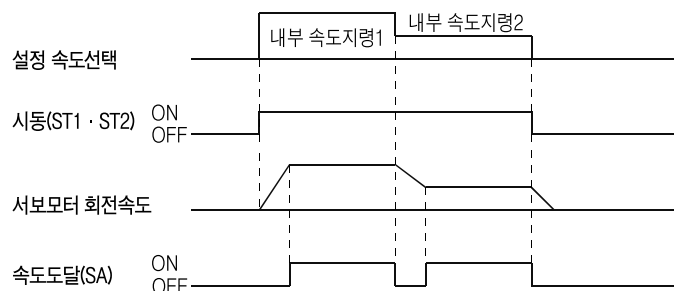
( )			
SP3	SP2	SP1	
0	0	0	(VC)
0	0	1	1( No.8)
0	1	0	2( No.9)
0	1	1	3( No.10)
1	0	0	4( No.72)
1	0	1	5( No.73)
1	1	0	6( No.74)
1	1	1	7( No.75)

( ) 0: OFF  
 1: ON

No.11 · 12 가

가

(2) (SA) 가  
 SA가 ON



(3) 3.4.1 (5)

3.4.3

(1)

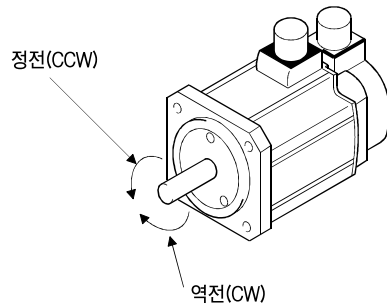
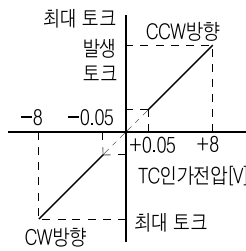
(a)

(TC) 가

±8V

±8V

No.26



5% 가

(-0.05~+0.05V) 가

가

가

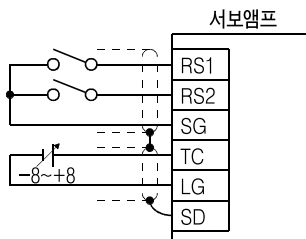
(TC)

(RS1)

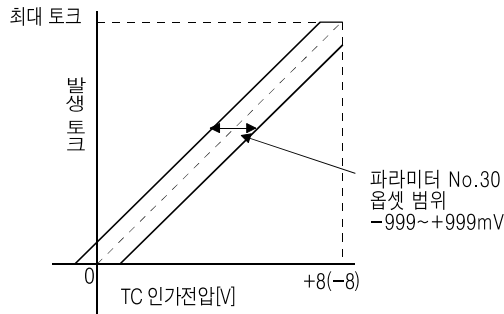
(RS2)

( )		(TC)		
RS2	RS1	+	0V	-
		0	0	
0	1	CCW ( )		CW ( )
1	0	CW ( )		CCW ( )
1	1			

( ) 0: OFF  
1: ON

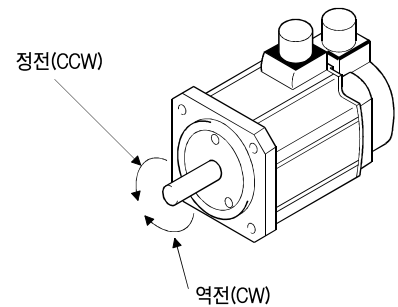
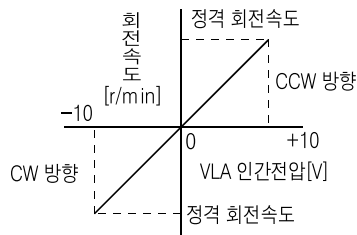


(b) No.30 TC 가 -999~+999mV  
가 .



(2) No.28( 1) , 3.4.1 (5)  
(TLA)

(3) (a) No.8~10 · 72~75( 1~7)  
(VLA) 가  
(VLA) 가 가 가  
100r/m



(RS1) · (RS2)

( )		(VLA)		
RS2	RS1	+	-	
1	0	CCW	CW	CCW
1	1	CW	CCW	CW

( ) 0: OFF  
1: ON



3.4.4 /

/

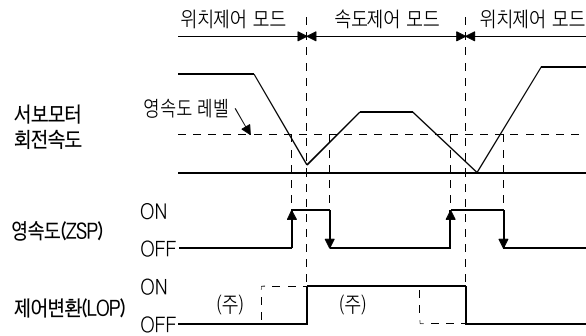
No.0 "0001"

- (1) (LOP)
- (LOP)
- . LOP - SG

( ) LOP	
0	
1	

( ) 0: OFF  
1: ON

가 . , 가



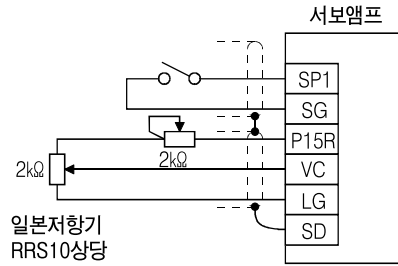
. ZSP가 ON , LOP ON/OFF  
ZSP가 ON

- (2)
- 3.4.1 (5)

(3)

(a)

(ST1) · (VC) 가  
(ST2) (VC) 가  
3.4.2 (1)(a)



(b)

1(SP1)  
1(SP1) 1  
(VC)

( )	
SP1	
0	(VC)
1	1( No.8)

( ) 0: OFF  
1: ON

No.43~48 2(SP2) · 3(SP3) 가  
(VC) 1~7

( )			
SP3	SP2	SP1	
0	0	0	(VC)
0	0	1	1( No.8)
0	1	0	2( No.9)
0	1	1	3( No.10)
1	0	0	4( No.72)
1	0	1	5( No.73)
1	1	0	6( No.74)
1	1	1	7( No.75)

( ) 0: OFF  
1: ON

No.11 · 12

가  
1

(c) (SA)  
3.4.2 (2)

3.4.5 /

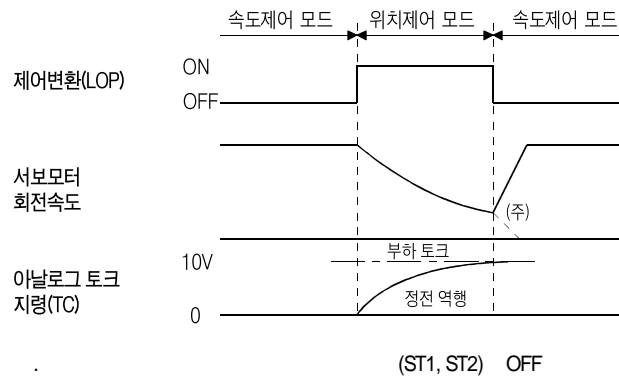
No.0 "0003"

- (1) (LOP)
- (LOP)
- LOP - SG

( ) LOP	
0	
1	

( ) 0: OFF  
1: ON

가



- (2) 3.4.2 (1)

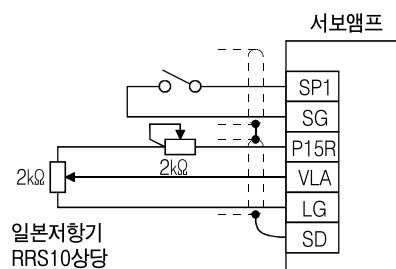
- (3) 3.4.2 (5)

- (4) (a)

(VLA) 가 (VLA) 가

3.4.3

- (3)(a)





(b) 1(SP1)  
 1(SP1) 1  
 (VLA)

( )	
SP1	
0	(VLA)
1	1( No.8)

( ) 0: OFF  
 1: ON

1

(c) (VLC)  
 3.4.3 (3)(c)

(5)  
 3.4.3 (1)

(6)  
 3.4.3 (2)

3.4.6 /

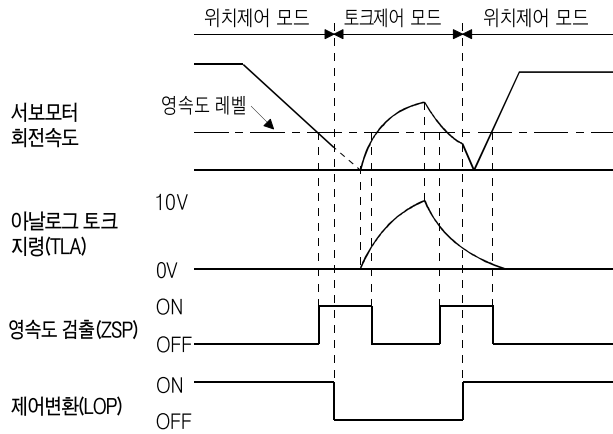
/ No.0 "0005"

- (1) (LOP)
- (LOP)
- . LOP - SG

( ) LOP	
0	
1	

( ) 0: OFF  
1: ON

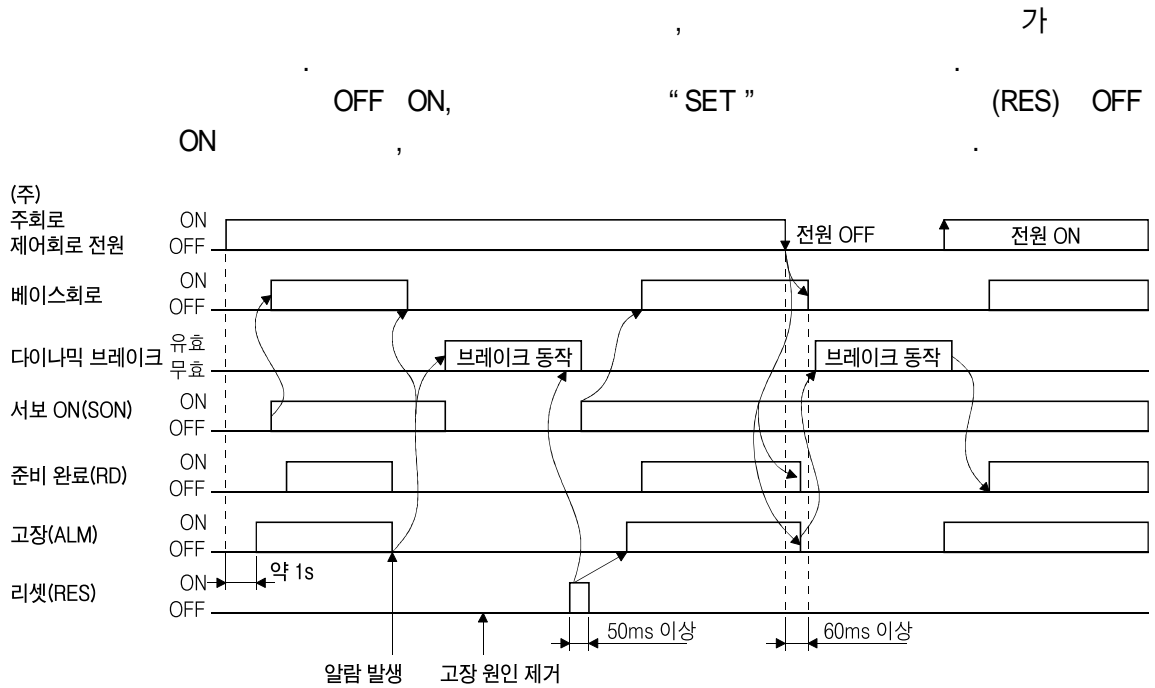
가 . . , 가



- (2) 3.4.3 (3) .
- (3) 3.4.3 (1) .
- (4) 3.4.3 (2) .
- (5) 3.4.1 (5) .

3. 5

⚠ 주의
   
 ON(SON) OFF



(1) 1 2  
 (AL.32) 1(AL.50) 2(AL.51)  
 OFF ON  
 가

(2) (AL.30) OFF ON

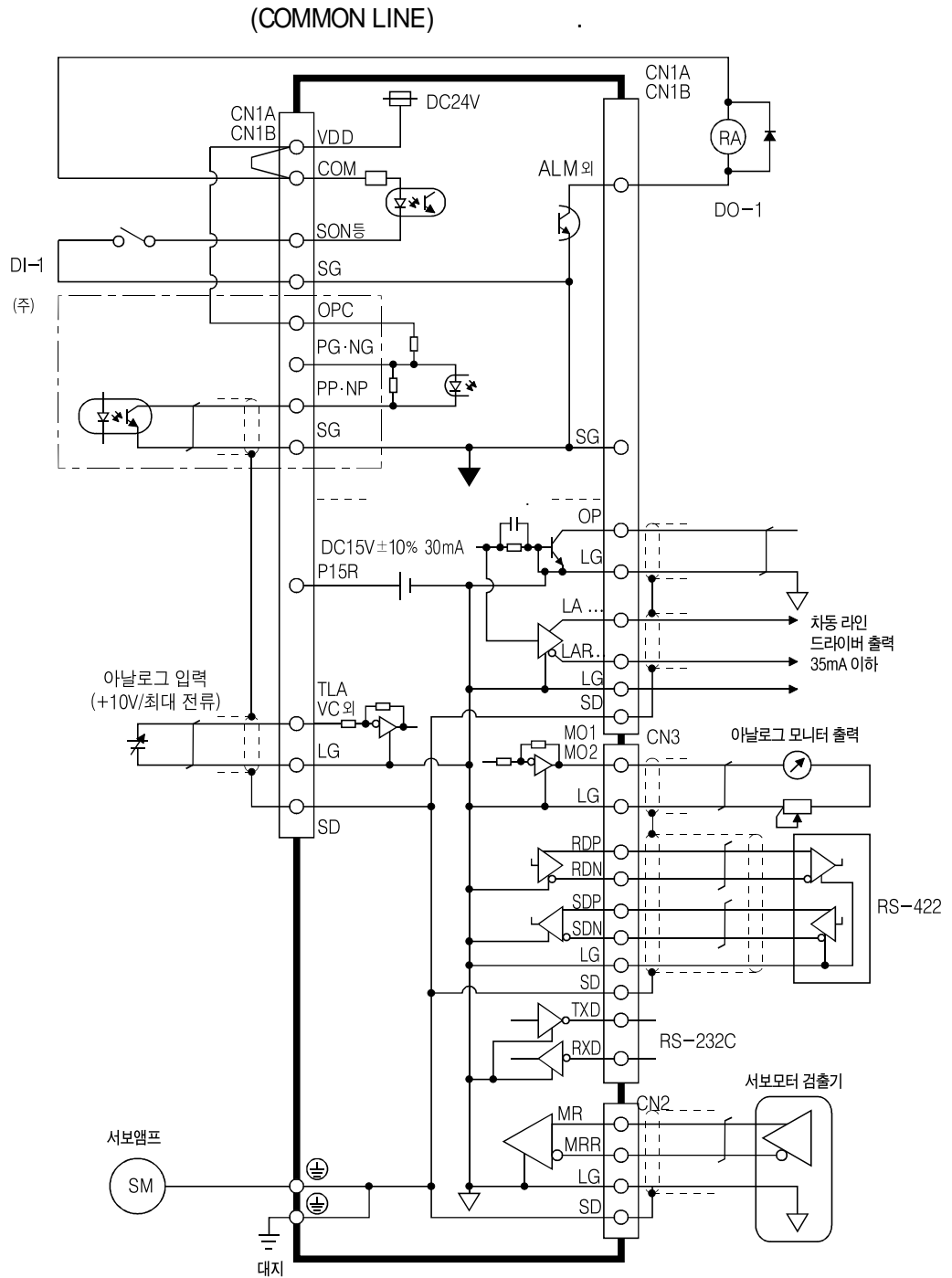
(3) (AL.10) 60 ms 가 OFF

MR - J2S - A DC200V , MR - J2S - A1 DC158V

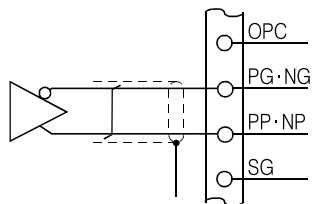
(4) ( )

3. 6

3.6.1



주. 오픈 콜렉터 펄스열 입력의 경우입니다. 차동 라인 드라이버 펄스 입력의 경우는 다음과 같이 접속하십시오.



3.6.2

3.3.2

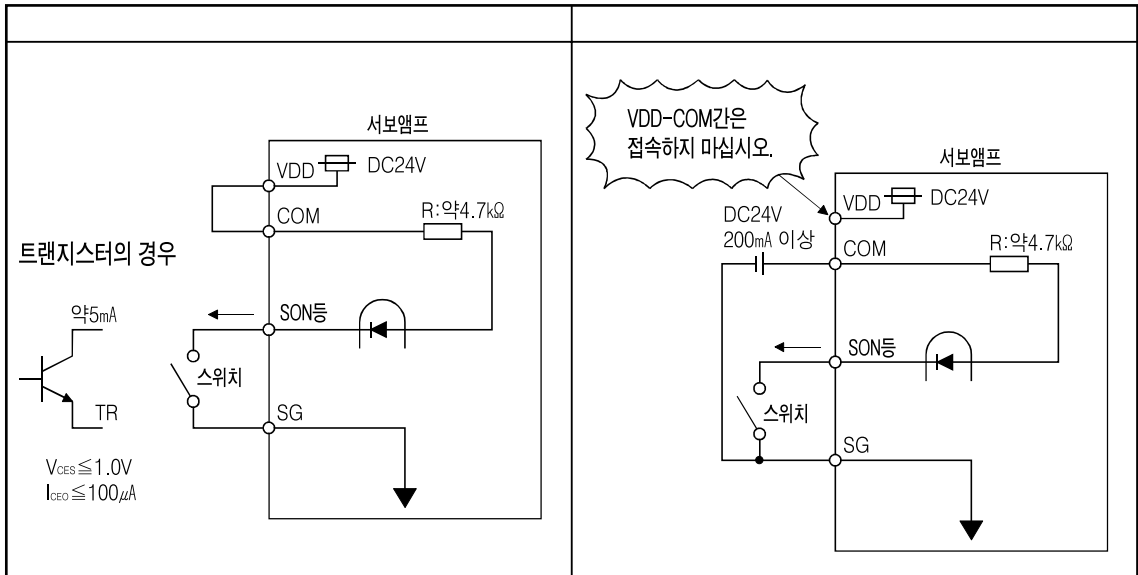
( I/O )

(1)

DI-1

가

(7)

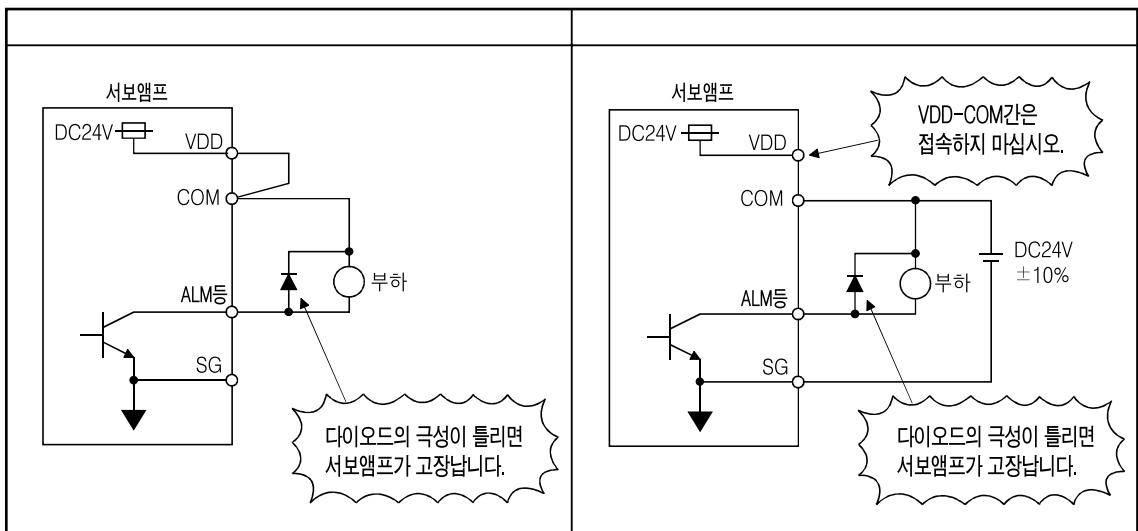


(2)

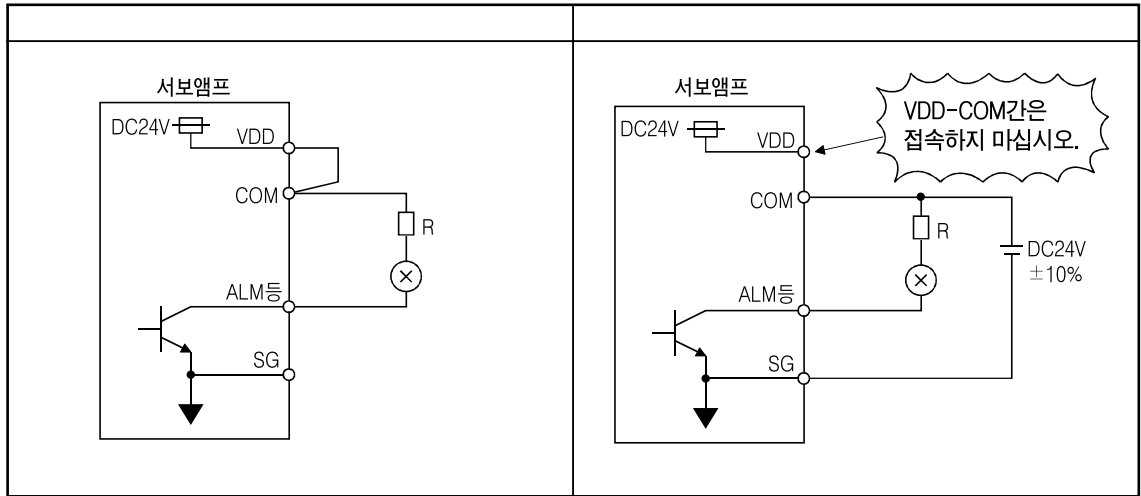
DO-1

(D) , (R)  
( : 40mA , : 100mA )

(a)



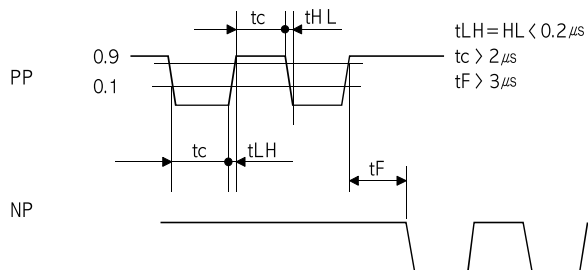
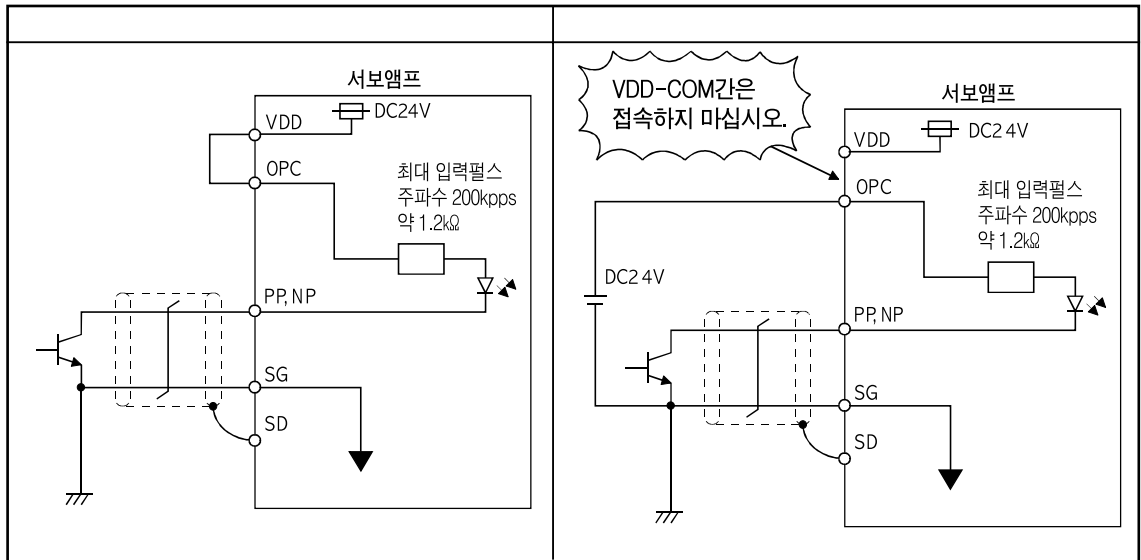
(b)



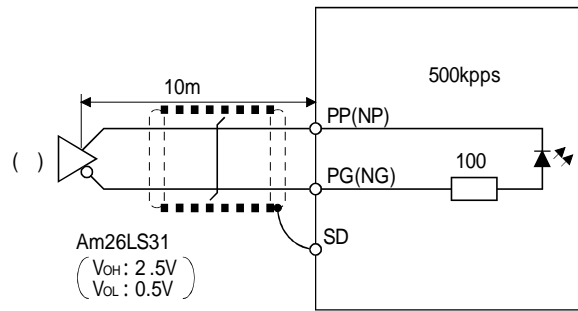
(3)

DI-2

(a)

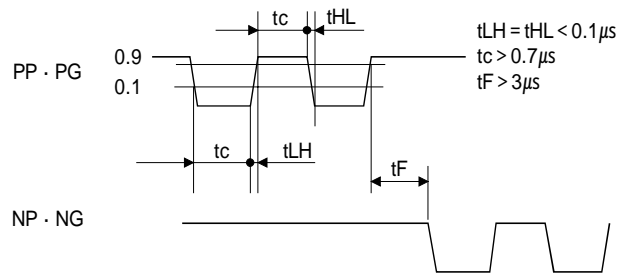


(b)



( )

(photo - coupler)  
가

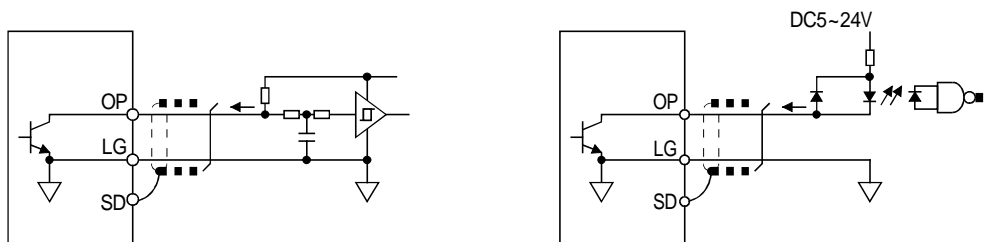


(4)

DO-2

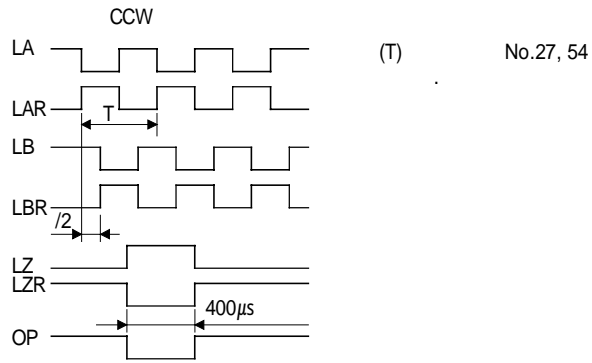
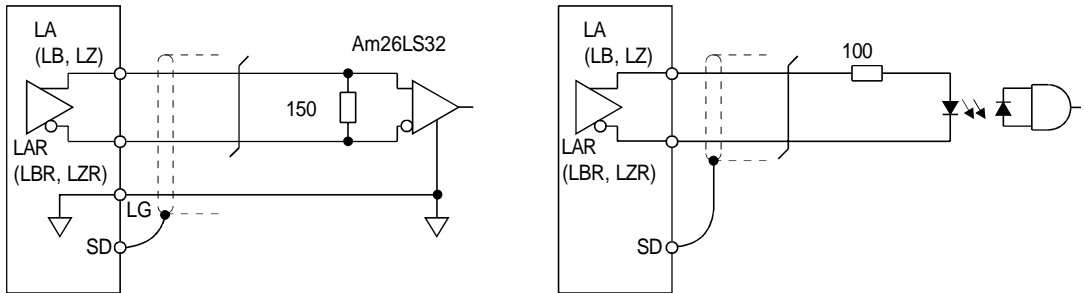
(a)

35mA



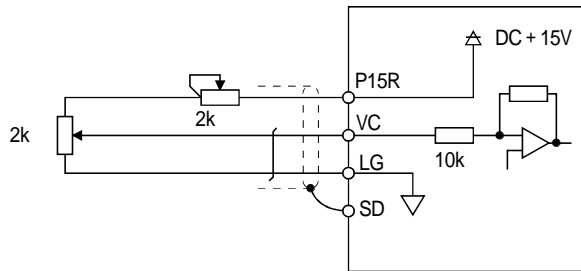
(b)

35mA



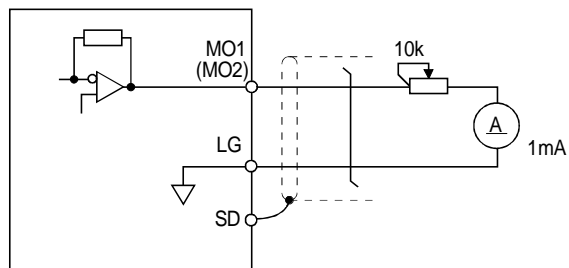
(5)

10 ~ 12kΩ



(6)

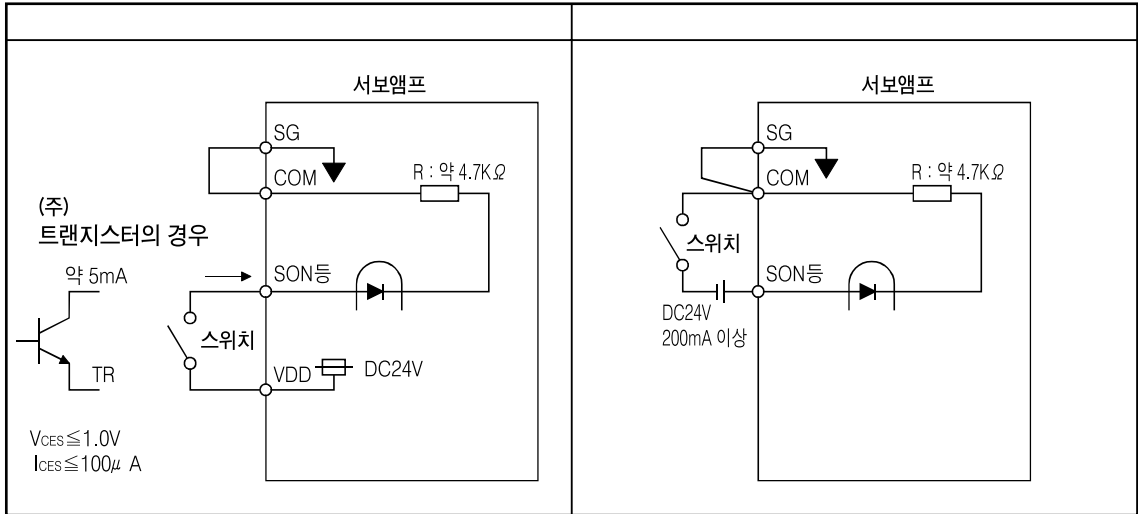
: ±10V  
: 1mA  
: 10bit





(7)

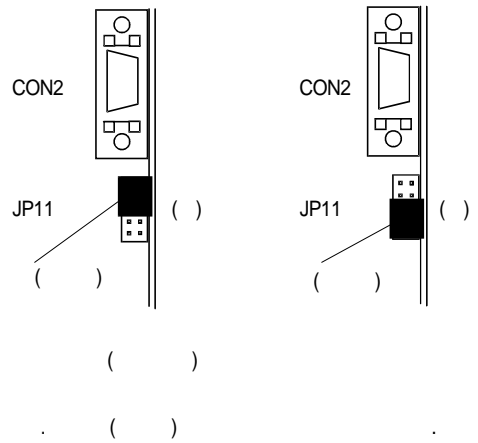
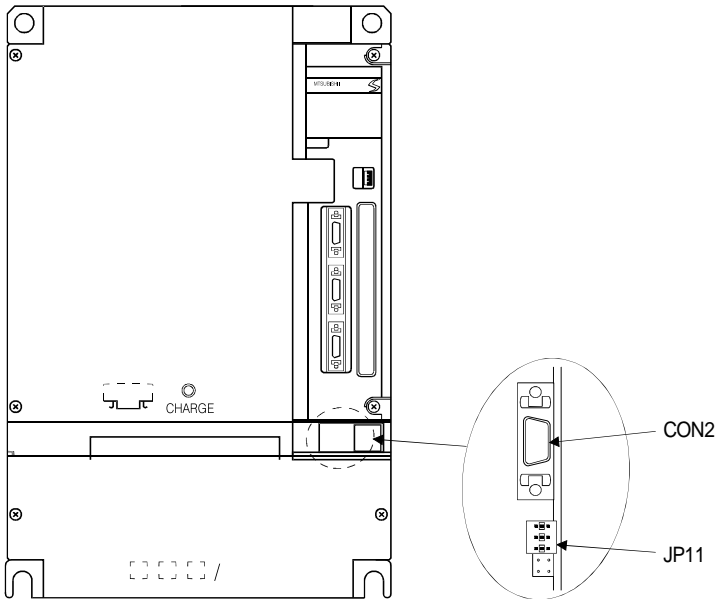
, DI-1 가 .



( )

11kW , JP11 ( ( ) )  
( )

, (VDD)



3. 7

L1 · L2 · L3 (MC)

(ALM) 가 (MC)가 가

가

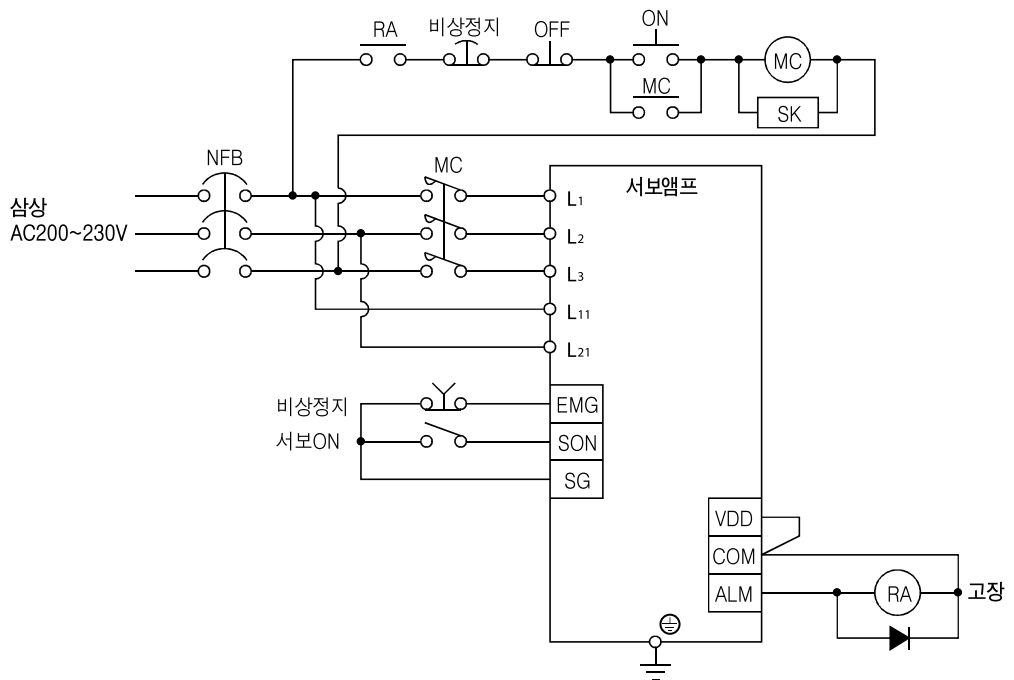
⚠ 주의

MR - J2S - 11KA ~ MR - J2S - 22KA  
3.13

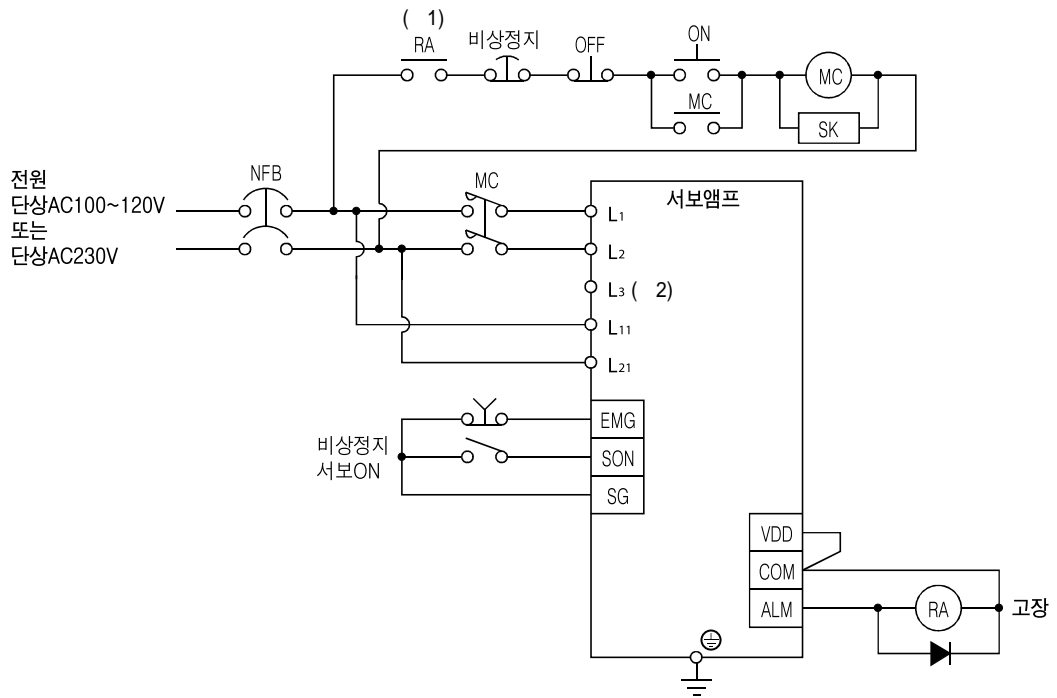
3.7.1

ON(SON) OFF가 (NFB)

(1) AC200~230V



(2) AC100~120V · AC230V



- ( ) 1.
- 2. AC100~120V

3.7.2

11.1

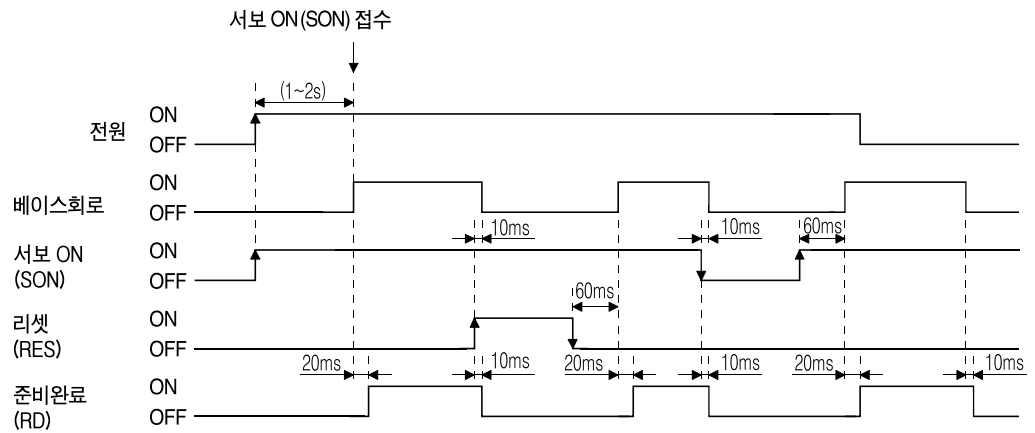
		L1 · L2 · L3 AC230C , L1 · L2 , L3																
L1 · L2 · L3		<table border="1"> <tr> <td></td> <td>MR-J2S-10A ~ 70A</td> <td>MR-J2S-100A ~ 22KA</td> <td>MR-J2S-10A1 ~ 40A1</td> </tr> <tr> <td>AC200~230V, 50/60Hz</td> <td colspan="2">L1 · L2 · L3</td> <td></td> </tr> <tr> <td>AC230V, 50/60Hz</td> <td>L1 · L2</td> <td></td> <td></td> </tr> <tr> <td>AC100~120V, 50/60Hz</td> <td></td> <td></td> <td>L1 · L2</td> </tr> </table>		MR-J2S-10A ~ 70A	MR-J2S-100A ~ 22KA	MR-J2S-10A1 ~ 40A1	AC200~230V, 50/60Hz	L1 · L2 · L3			AC230V, 50/60Hz	L1 · L2			AC100~120V, 50/60Hz			L1 · L2
	MR-J2S-10A ~ 70A	MR-J2S-100A ~ 22KA	MR-J2S-10A1 ~ 40A1															
AC200~230V, 50/60Hz	L1 · L2 · L3																	
AC230V, 50/60Hz	L1 · L2																	
AC100~120V, 50/60Hz			L1 · L2															
U · V · W		(U · V · W)																
L11 · L21		<table border="1"> <tr> <td></td> <td>MR-J2S-10A ~ 700A</td> <td>MR-J2S-10A1 ~ 40A1</td> </tr> <tr> <td>AC200~230V</td> <td colspan="2">L11 · L21</td> </tr> <tr> <td>AC100~120V</td> <td></td> <td>L11 · L21</td> </tr> </table>		MR-J2S-10A ~ 700A	MR-J2S-10A1 ~ 40A1	AC200~230V	L11 · L21		AC100~120V		L11 · L21							
	MR-J2S-10A ~ 700A	MR-J2S-10A1 ~ 40A1																
AC200~230V	L11 · L21																	
AC100~120V		L11 · L21																
P1	DC	<p>DC , P-P1 ( )</p> <p>DC , P-P1 ( ) DC (13.2.4 )</p> <p>MR - J2S - 11KA~22KA</p>																
P · C · D		<p>MR - J2S - 350A , P-D ( )</p> <p>, P-D P C</p> <p>MR - J2S - 500A · 700A MR - J2S - 500A · 700A D , P C</p> <p>( ) , P C P C</p> <p>MR - J2S - 11KA~22KA MR - J2S - 11KA~22KA D , P</p> <p>C 13.1.1</p>																
N		, P-N MR - J2S - 350A 13.1.2, 13.1.3																
⊕	(PE)	(PE)																

3.7.3

(1)

3.7.1 ( 200V : L1 · L2 · L3,  
 230V · 100V : L1 · L2)  
 OFF  
 L11 · L21  
 1~2s ON (SON)  
 ON(SON) ON , 1~2s  
 가 ON , 20ms (RD)가 ON 가 가  
 .( (2) )  
 (RES) ON 가 , 가

(2)

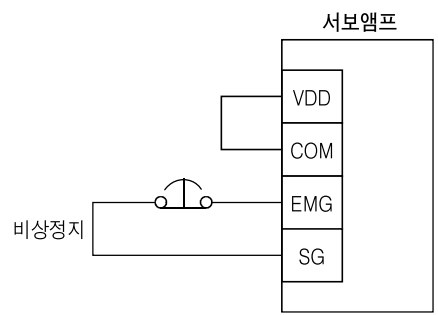


전원 투입의 타이밍 차트

(3)

⚠ 주의

EMG - SG  
 . EMG - SG , 가 가  
 . , (AL.E6) .  
 (EMG) , .  
 가 가 ON , .  
 가 .

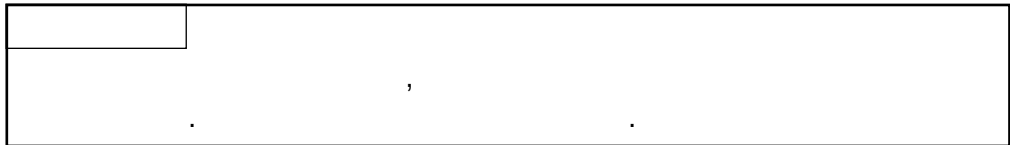


3. 8

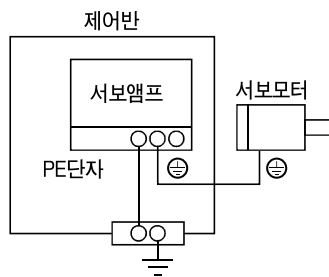
3.8.1

⚠ 위험 가

⚠ 주의 가 (U · V · W)



(PE)



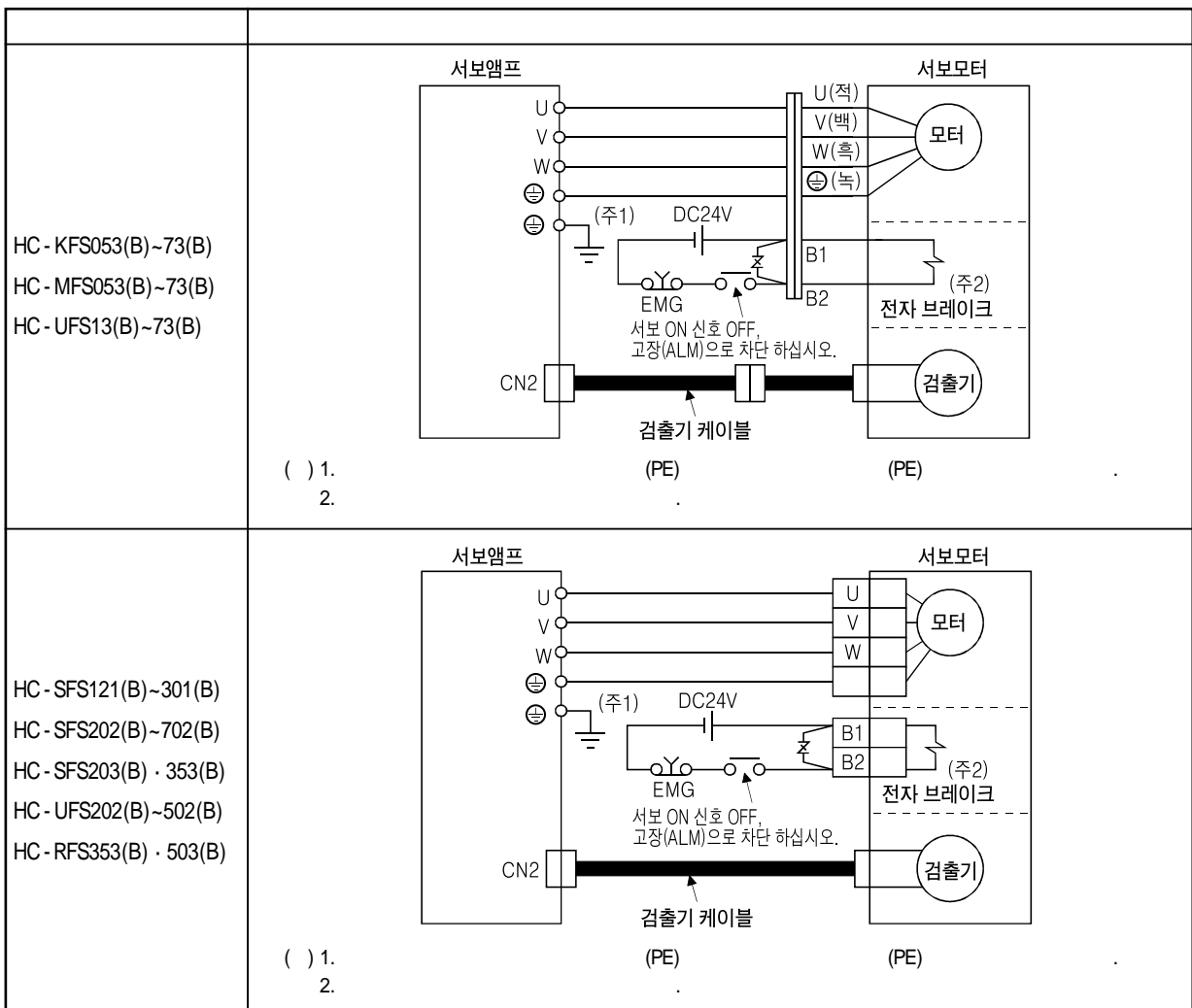
DC24V

3.8.2

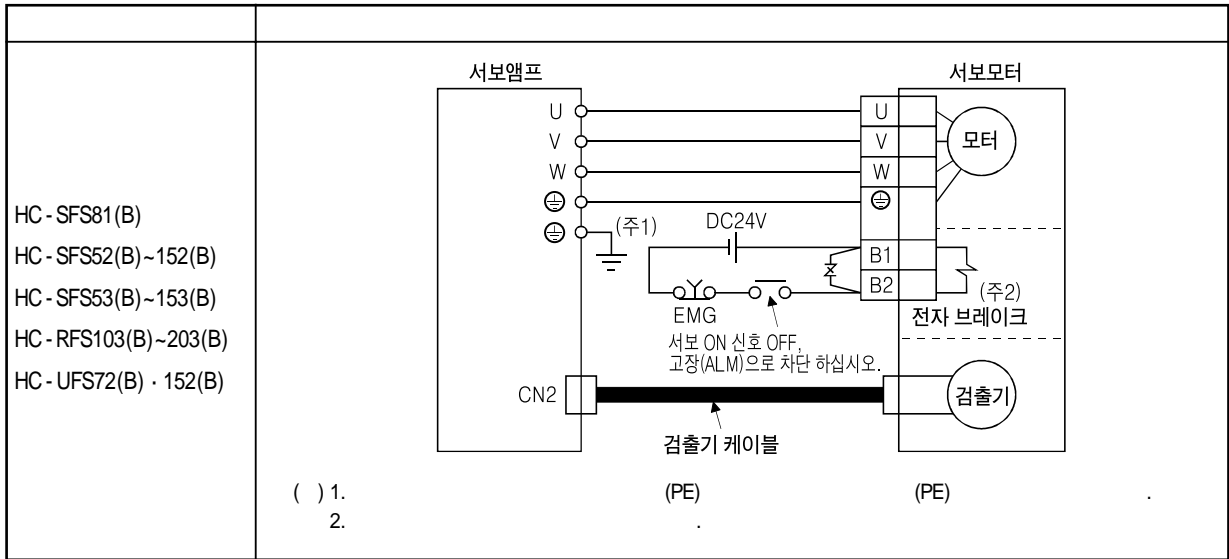
**⚠ 주의**

MR - J2S - 11KA~MR - J2S - 22KA  
3.13

13.2.1 , 13.1.5  
3.8.3

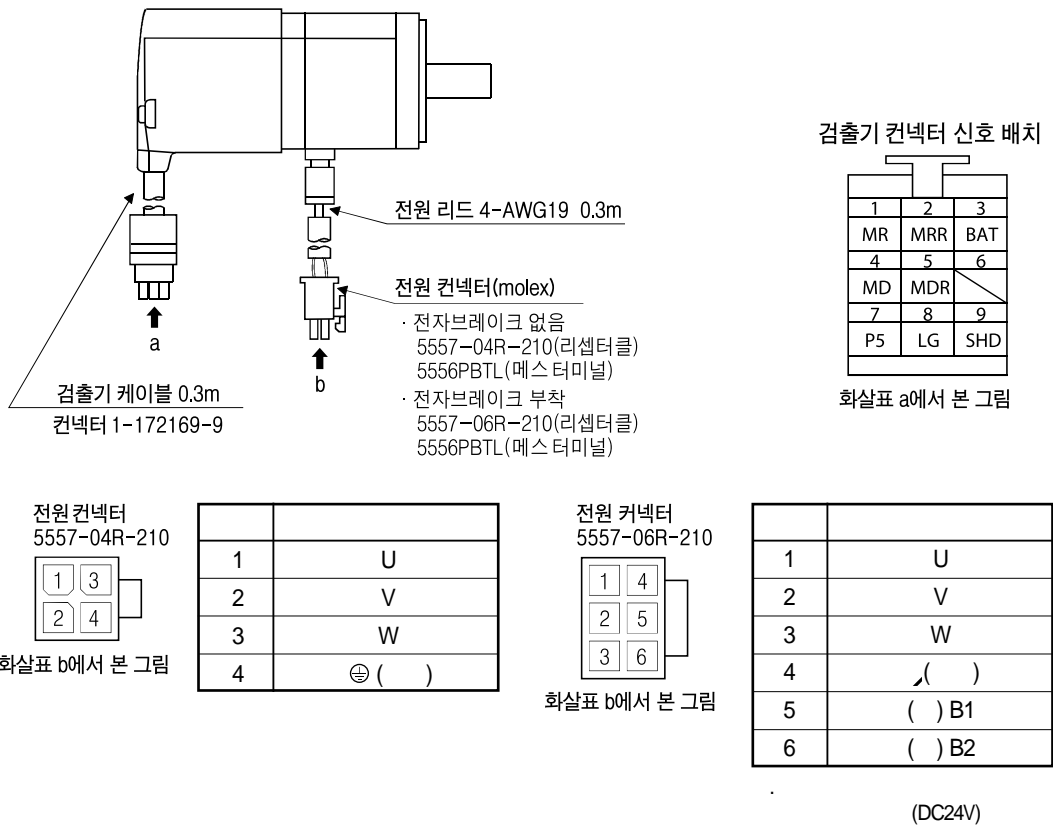




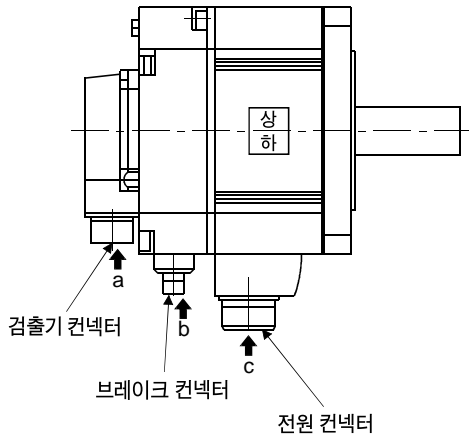


3.8.3

(1) HC-KFS · HC-MFS · HC-UFS3000r/min

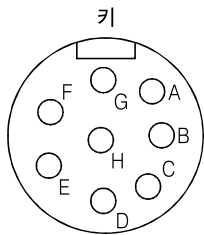


(2) HC-SFS · HC-RFS · HC-UFS2000r/min



HC-SFS81(B) HC-SFS52(B)~152(B) HC-SFS53(B)~153(B)	CE05-2A22-23PD-B	MS3102A20-29P	MS3102A10SL-4P
HC-SFS121(B)~301(B) HC-SFS202(B)~502(B) HC-SFS203(B)·353(B)	CE05-2A24-10PD-B		
HC-SFS702(B)	CE05-2A32-17PD-B		
HC-RFS 1 03(B)~203(B)	CE05-2A22-23PD-B		
HC-RFS353(B)·503(B)	CE05-2A24-10PD-B		
HC-UFS72(B)·152(B)	CE05-2A22-23PD-B		
HC-UFS202(B)~502(B)	CE05-2A24-10PD-B		

전원 컨넥터 신호 배치  
CE05-2A22-23PD-B

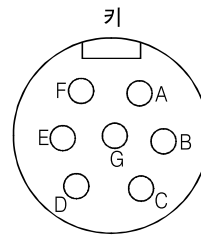


화살표 c에서 본 그림

A	U
B	V
C	W
D	⊖
E	/
F	/
G	( ) B1
H	( ) B2

(DC24V)

CE05-2A24-10PD-B

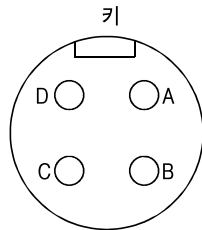


화살표 c에서 본 그림

A	U
B	V
C	W
D	⊖
E	( ) B1
F	( ) B2
G	/

(DC24V)

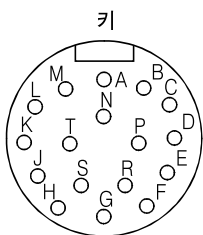
CE05-2A32-17PD-B



화살표 c에서 본 그림

A	U
B	V
C	W
D	⊖

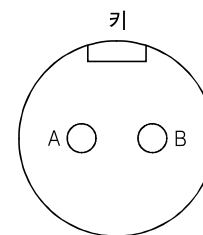
검출기 컨넥터 신호 배치  
MS3102A20-29P



화살표 a에서 본 그림

A	MD	K	/
B	MDR	L	/
C	MR	M	/
D	MRR	N	SHD
E	/	P	/
F	BAT	R	LG
G	LG	S	P5
H	/	T	/
J	/		

브레이크 컨넥터 신호 배치  
MS3102A10SL-4P

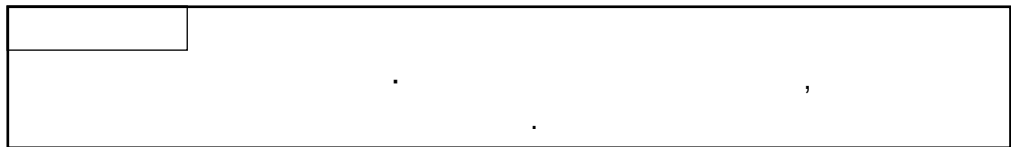
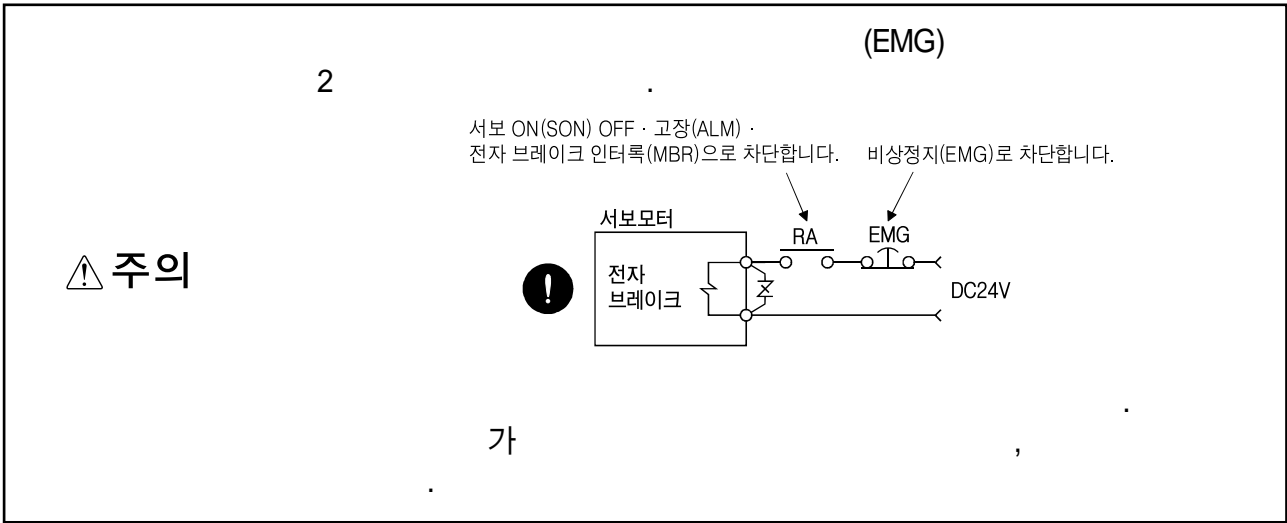


화살표 b에서 본 그림

A	( ) B1
B	( ) B2

(DC24V)

3. 9



2

No.1 “ 1 ” ( MBR)

가 (ZSP)

DC24V

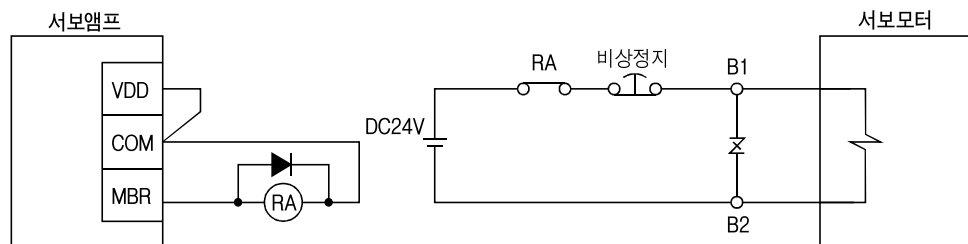
(DC24V) OFF 가

(RES) ON

(MBR)

가 ON (SON) OFF

(1)



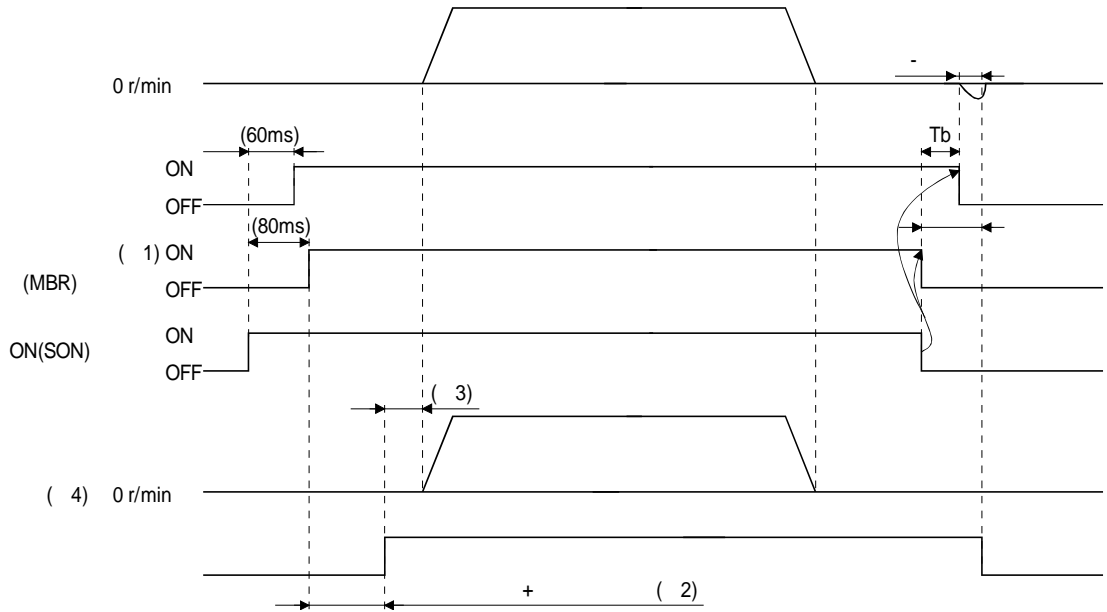
(2)

(a) No.1 “ 1 ” ( MBR)  
가

(b) No.33( ) (3)  
ON (Tb)

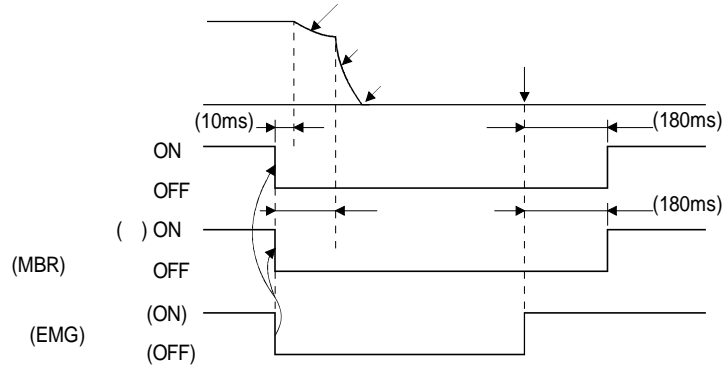
(3)

(a) ON(SON) ON/OFF  
ON(SON) OFF , Tb[ms] 가  
가 , (Tb)



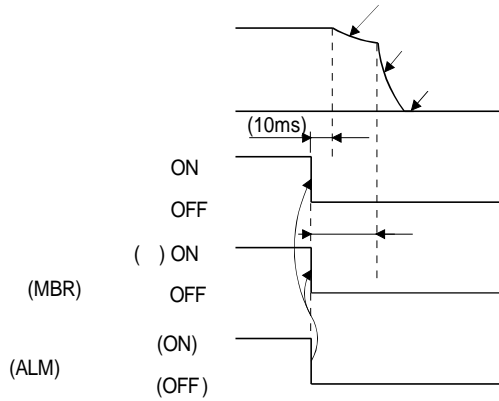
- ( ) 1.ON : 가 가
- OFF : 가 가
- 2. ,
- 3. 가 ,
- 4. .

(b) (EMG) ON/OFF



( ) ON : 가 가  
 OFF : 가 가

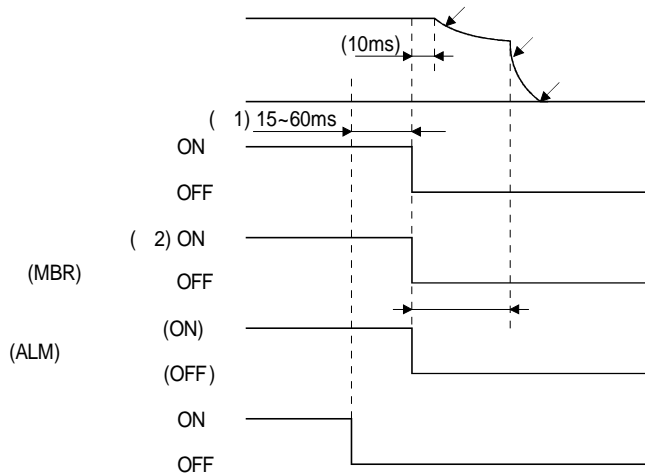
(c)



( ) ON : 가 가  
 OFF : 가 가

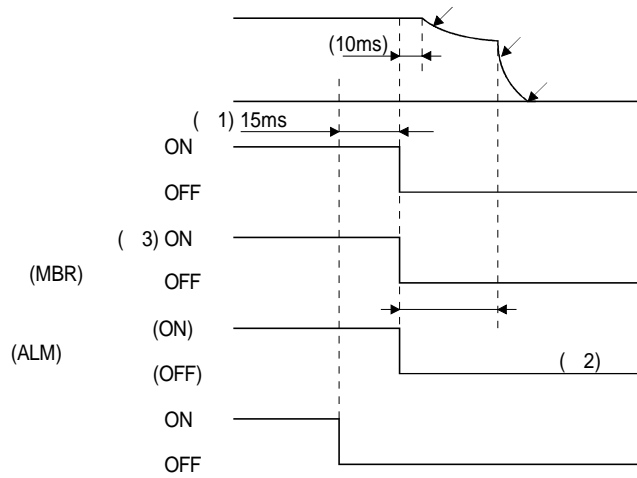
(d) ,

OFF



( ) 1.  
 2. ON : 가 가  
 OFF : 가 가

(e) OFF( ON )



- ( ) 1.
- 2. OFF , (AL.E9)가 , (ALM) OFF가
- 3. ON : 가 가
- OFF : 가 가



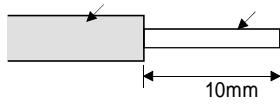
3.11 (TE2)

		13.2.1	13.1
--	--	--------	------

3.11.1 2006 1

(1) ( )

(a)



(b)

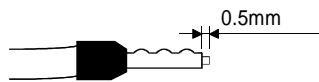
가

( )

가

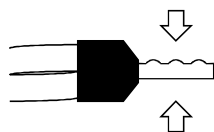
[mm <sup>2</sup> ]	AWG	1	2		
1.25/1.5	16	AI1.5 - 10BK	AI - TWIN2×1.5 - 10BK	CRIMPFOX ZA 3	( )
2/2.5	14	AI2.5 - 10BU			

0.5mm



2

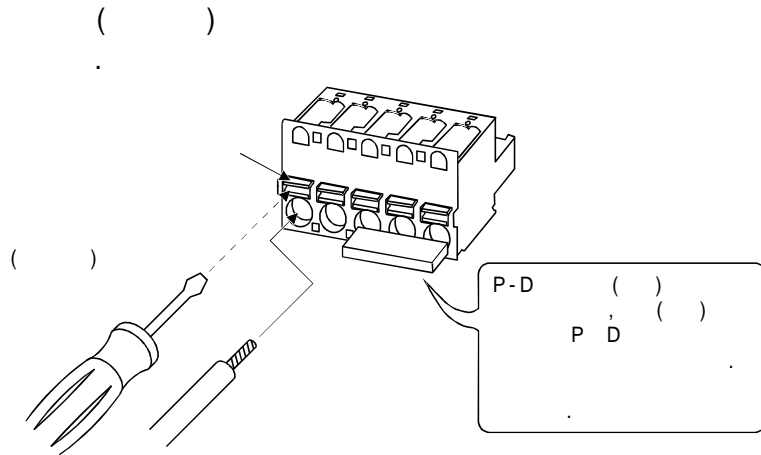
(Sleeve)가



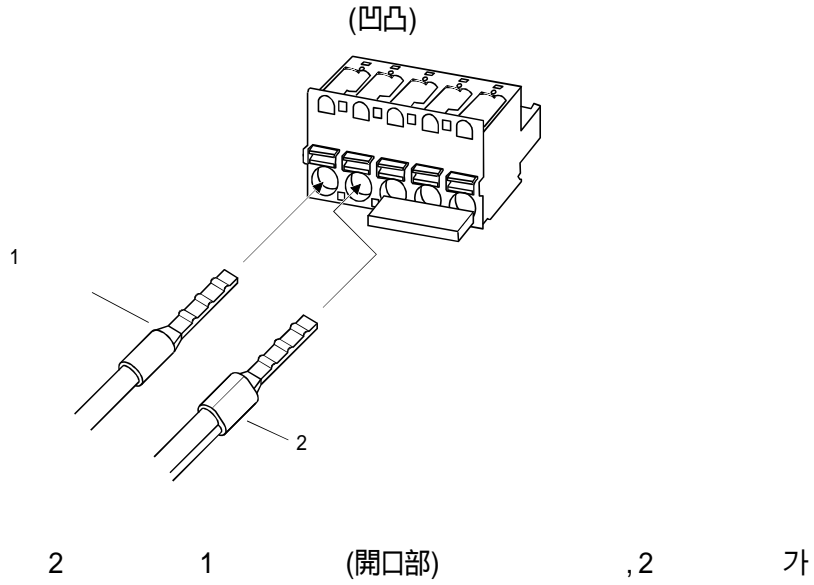


(2)

(a)



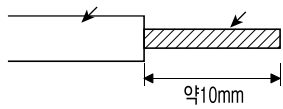
(b)



3.11.2 2005 12

(1) ( )

...



...

가

가

[mm <sup>2</sup> ]	AWG	1	2		
1.25/1.5	16	AI1.5 - 10BK	AI - TWIN2×1.5 - 10BK	CRIMPFOX ZA 3	( )
2/2.5	14	AI2.5 - 10BU		CRIMPFOX UD 6	

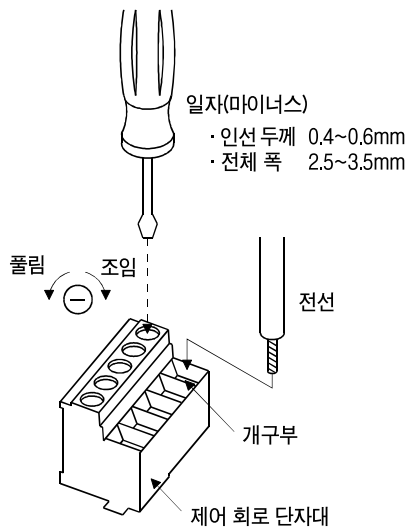
(2)

( )

( : 0.3~0.4N · m)

· 1.5mm<sup>2</sup>

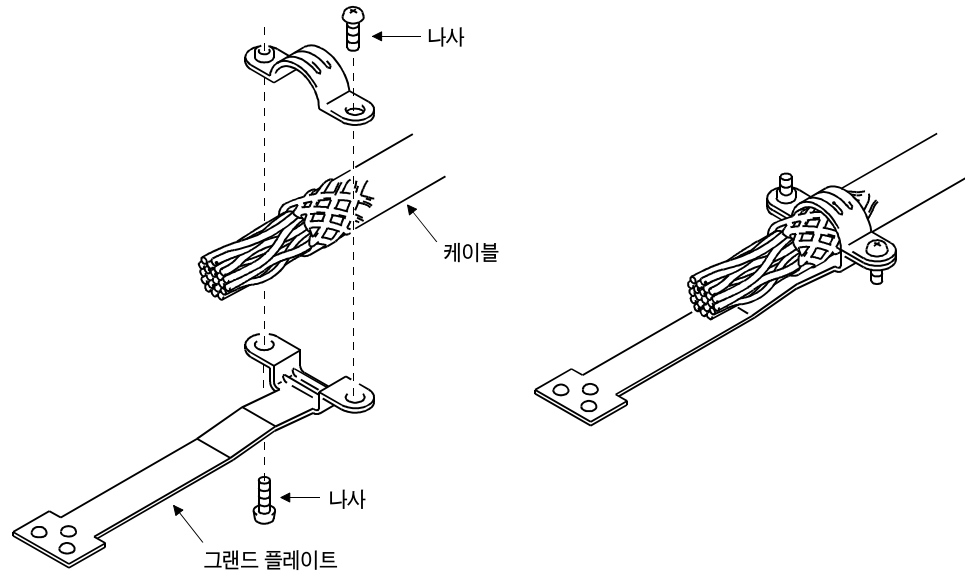
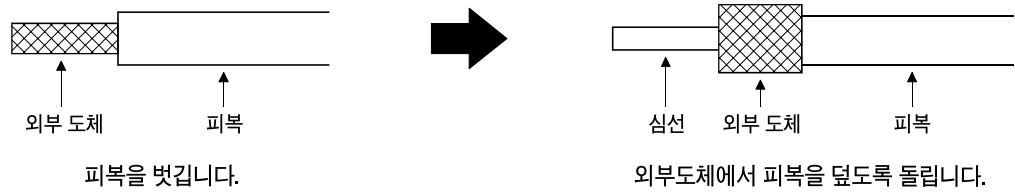
2



, ( ) ( )

		/
	N6L TDK	
	B-30 ( ) H3.5 X 73L	

3.12 3M



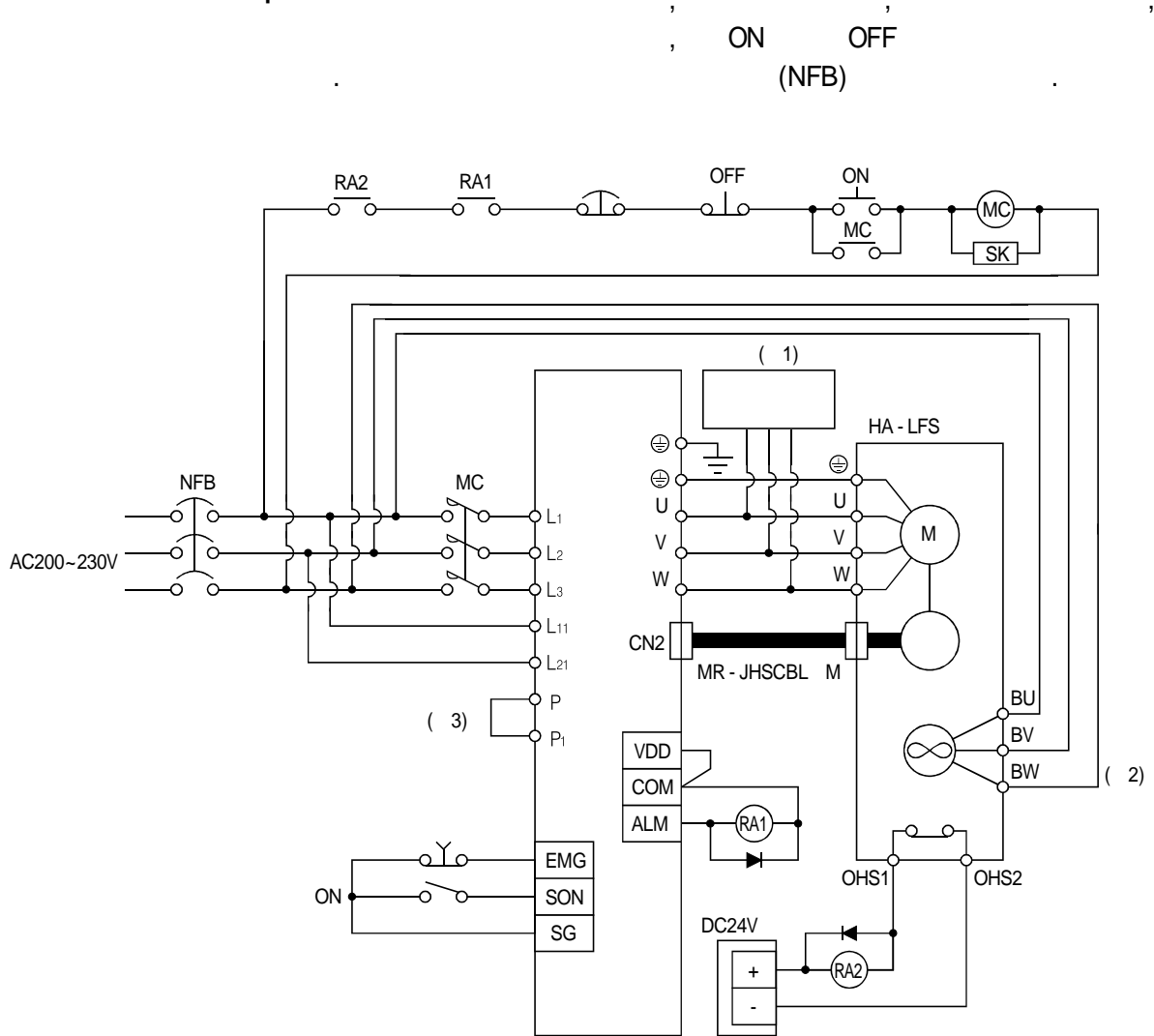
3.13 MR-J2S-11KA ~ MR-J2S-22KA

가  
가  
가

⚠ 주의

3.7.3

3.13.1



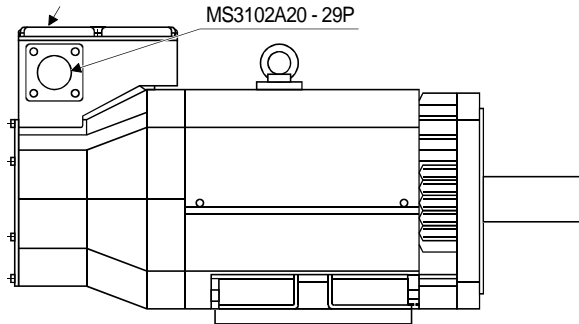
- ) 1. 13.1.4
  - 2. HA-LFS11K2 BW
  - 3. P-P1 ( ) DC
- 13.2.4

3.13.2

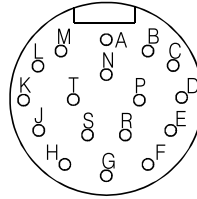
.11.1

	( )	
L1 · L2 · L3		L1 · L2 · L3 AC200~230V, 50/60Hz
U · V · W		(U · V · W)
L11 · L21		L11 · L21 AC200~230V
P · C		,P-C 13.1.1
N		,P-N 13.1.2, 13.1.3
⊕	(PE)	,(PE)
P1 · P	DC	P1-P P1-P ( ) 13.2.4 DC

3.13.3

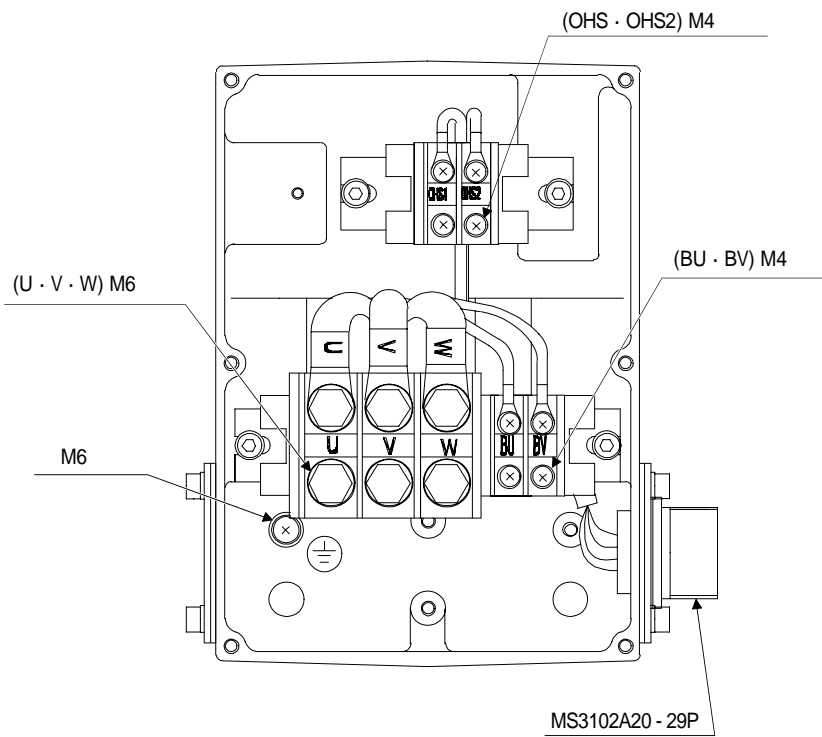


MS3102A20 - 29P



핀	신호	핀	신호
A	MD	K	
B	MDR	L	
C	MR	M	
D	MRR	N	SHD
E		P	
F	BAT	R	LG
G	LG	S	P5
H		T	
J			

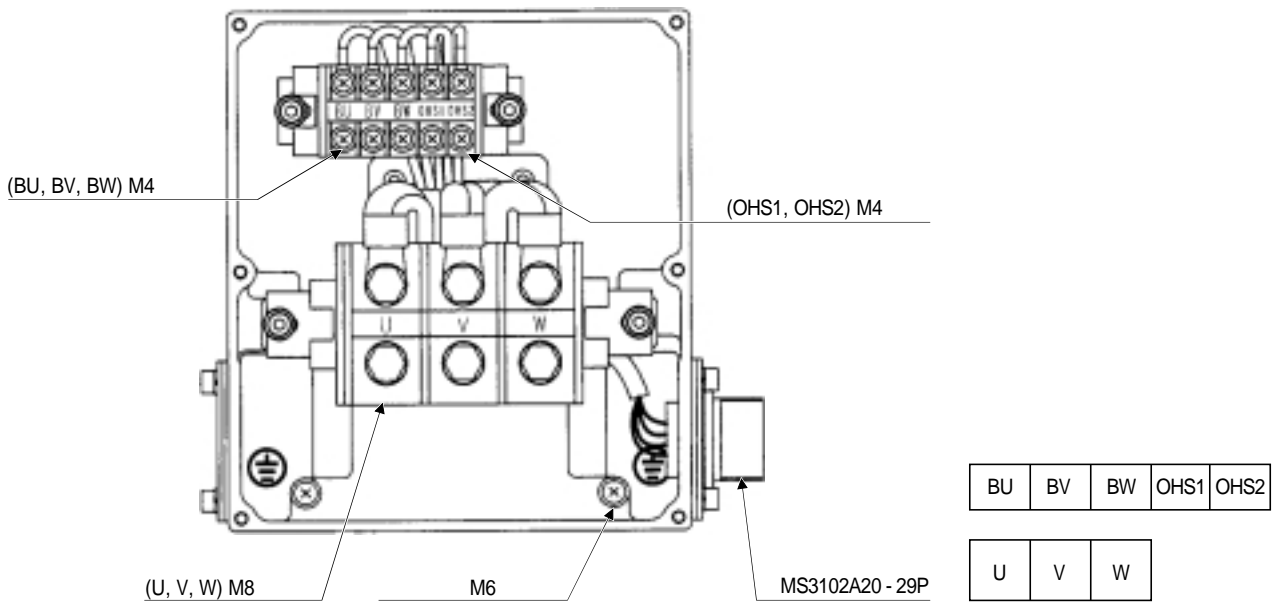
(HA - LFS601, 701M, 11K2)



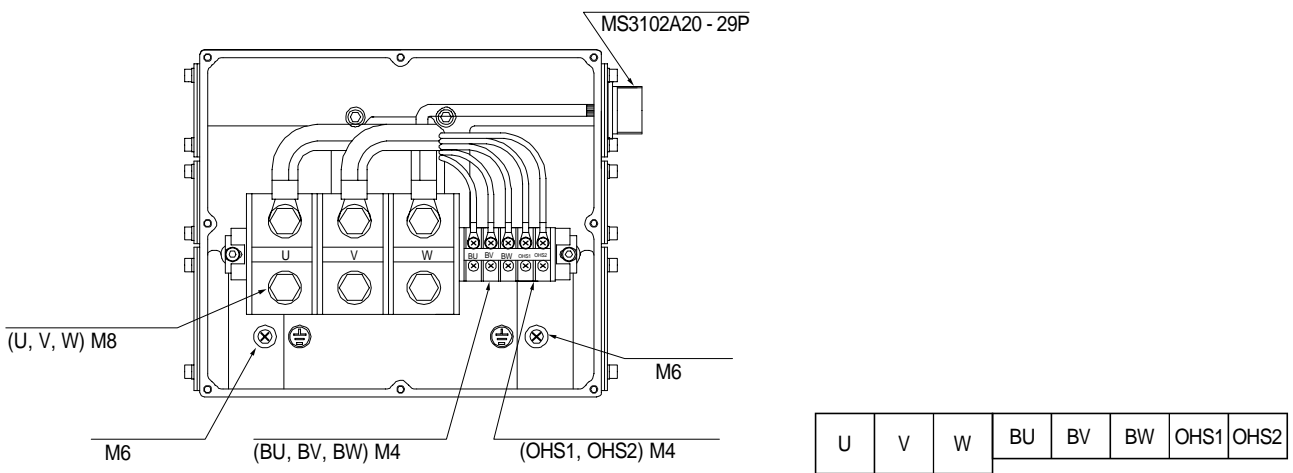
OHS1	OHS2
------	------

U	V	W	BU	BV
---	---	---	----	----

(HA-LFS801, 12K1, 11K1M, 15K1M, 15K2, 22K2)



(HA-LFS15K1, 20K1, 22K1M, 25K1)



		(U · V · W)																																													
	U · V · W	(U · V · W)																																													
	( ) BU · BV · BW	<table border="1"> <thead> <tr> <th></th> <th></th> <th></th> <th>[W]</th> <th>[A]</th> </tr> </thead> <tbody> <tr> <td>HA - LFS601, 701M, 11K2</td> <td rowspan="4">200V</td> <td>AC200~220V 50Hz</td> <td>42(50Hz)</td> <td>0.21(50Hz)</td> </tr> <tr> <td>HA - LFS801, 12K1, 11K1M, 15K1M, 15K2, 22K2</td> <td>AC200~230V 60Hz</td> <td>54(60Hz)</td> <td>0.25(60Hz)</td> </tr> <tr> <td>HA - LFS15K1, 20K1, 22K1M</td> <td rowspan="2">AC200~230V 50Hz/60Hz</td> <td>62(50Hz)</td> <td>0.18(50Hz)</td> </tr> <tr> <td>HA - LFS25K1</td> <td>76(60Hz)</td> <td>0.17(60Hz)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>65(50Hz)</td> <td>0.20(50Hz)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>85(60Hz)</td> <td>0.22(60Hz)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>120(50Hz)</td> <td>0.65(50Hz)</td> </tr> <tr> <td></td> <td></td> <td></td> <td>175(60Hz)</td> <td>0.80(60Hz)</td> </tr> </tbody> </table>								[W]	[A]	HA - LFS601, 701M, 11K2	200V	AC200~220V 50Hz	42(50Hz)	0.21(50Hz)	HA - LFS801, 12K1, 11K1M, 15K1M, 15K2, 22K2	AC200~230V 60Hz	54(60Hz)	0.25(60Hz)	HA - LFS15K1, 20K1, 22K1M	AC200~230V 50Hz/60Hz	62(50Hz)	0.18(50Hz)	HA - LFS25K1	76(60Hz)	0.17(60Hz)				65(50Hz)	0.20(50Hz)				85(60Hz)	0.22(60Hz)				120(50Hz)	0.65(50Hz)				175(60Hz)	0.80(60Hz)
			[W]	[A]																																											
HA - LFS601, 701M, 11K2	200V	AC200~220V 50Hz	42(50Hz)	0.21(50Hz)																																											
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HA - LFS15K1, 20K1, 22K1M		AC200~230V 50Hz/60Hz	62(50Hz)	0.18(50Hz)																																											
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			65(50Hz)	0.20(50Hz)																																											
			85(60Hz)	0.22(60Hz)																																											
			120(50Hz)	0.65(50Hz)																																											
			175(60Hz)	0.80(60Hz)																																											
	OHS1 · OHS2	OHS1 · OHS2																																													
	⊖																																														

( ) HA - LFS11K2 , BW





4

4. 1

- (1)
  - (a) (L1 · L2 · L3 · L11 · L21)
  - (b) (U · V · W) (U · V · W)
  - (c) (U · V · W) (L1 · L2 · L3)
  - (d)
  - (e) MR - J2S - 350A , D - P  
MR - J2S - 500A , P - C
  - (f) , LSP - SG LSN - SG
  - (g) CN1A · CN1B DC24V 가
  - (h) CN1A · CN1B SD SG
  - (i) 가
- (2) , 가
- (3)
  - (a) , 가 가 가
  - (b) 가 가 가

4. 2

⚠ 위험

⚠ 주의  
가 , ( ) ,  
가 , ( ) ,

4.2.1

No.0  
OFF ON

4.2.2

(1)  
ON(SON) OFF  
2  
ON  
,2~3  
“C”( )  
(AL.25)  
가  
가 500r/min  
가

(2)  
JOG  
(6.8.2 )  
가

(3)

6.5

5 ,

No.			
0			MR - RB12
1	1		3.555ms( )
2			( ) 1
3	(CMX)	2	
4	(CDV)	1	

(4) ON  
ON

ON (SON) ON  
ON 가 가 가 (Lock)

(5)

가

가

NO.2

(7 )

(6)

(7)

가

3.9 (2)

(LSP · LSN) OFF

(a) ON(SON) OFF

(b)

가

(c) (EMG) OFF

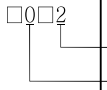
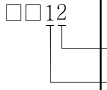
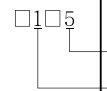
가

ALE6

(d) (LSP) · (LSN) OFF  
(Lock)

4.2.3

- (1) (SON) OFF “r”( )  
2
- (2) JOG 가  
(6.8.2 )
- (3) 5 ,  
6.5

No.			
0			
1	1		3.555ms( )
2			( ) 1
8	1	1000	1000r/min
9	2	1500	1500r/min
10	3	2000	2000r/min
11	가	1000	1000ms
12		500	500ms
13	S 가	0	

- (4) ON  
ON  
ON (SON) ON(SON - SG )  
ON 가 가 가 (Lock)

(5)                    1(SP1) ·                    2(SP2)                    (ST1)  
                          ON                    (CCW) ,                    (ST2) ON                    (CW)                    .  
                                             가  
                                             NO.2  
                                             .( 7 )

(6)                    가  
                                             3.9 (2)  
                          (LSP · LSN) OFF                    (ST1) ·                    (ST2)                    ON  
                          OFF  
                          (a)                    ON(SON) OFF  
                          (b)                    가  
                          (c)                    (EMG) OFF                    가  
                          ALE6  
                          (d)                    (LSP) ·                    (LSN) OFF  
                          Lock  
                          (e)                    (ST1) ·                    (ST2)                    ON                    OFF

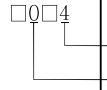
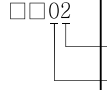
	(0)

4.2.4

(1) (SON) OFF “U”  
2

(2) JOG 가  
(6.8.2 )

(3) 5 , 6.5

No.			
0			
1	1		3.555ms( )
8	1	1000	1000r/min
9	2	1500	1500r/min
10	3	2000	2000r/min
11	가	1000	1000ms
12		500	500ms
13	S 가	0	
14		2000	2000ms
28	1	50	50%

(4) ON  
ON  
ON (SON) ON(SON - SG )  
ON 가 가

(5) 1(SP1) 2(SP2) (RS1)  
ON (CCW) , (RS2) ON (CW)  
가



(6)

가

3.9 (2)

(a) ON(SON) OFF

(b)

가

(c) (EMG) OFF

가

(d) ALE6

(RS1)

(RS2)

ON

OFF

	(0)

4.3

RS-422

( No.16)

가

No.15

1

1

14

5

⚠ 주의

5. 1

5.1.1

No.19                      ,                      OFF    ON

MR - J2S - A  
(No.0~19),

1(No.20~49),

2(No.50~84)

No.19

가                      No.19                      가

No.19		No.0 ~ 19	1 No.20 ~ 49	2 No.50 ~ 84
0000 (      )			/	/
000A		No.19 No.19	/	/
000B			/	/
000C			/	/
000E			/	/
100B		No.19	/	/
100C		No.19	/	/
100E		No.19	/	/

5.1.2

	* 가	OFF
--	-----	-----

P:

S:

T:

(1)

No.						
0	*STY	.	P · S · T	0000		
1	*OP1	1	P · S · T	0002		
2	ATU		P · S	7kW : 0105 11kW : 0102		
3	CMX	( )	P	1		
4	CDV	( )	P	1		
5	INP		P	100	pulse	
6	PG1	1	P	7kW : 35 11kW : 19	rad/s	
7	PST	가 ( )	P	3	ms	
8	SC1	1	S	100	r/min	
		1	T	100	r/min	
9	SC2	2	S	500	r/min	
		2	T	500	r/min	
10	SC3	3	S	1000	r/min	
		3	T	1000	r/min	
11	STA	가	S · T	0	ms	
12	STB		S · T	0	ms	
13	STC	S 가	S · T	0	ms	
14	TQC		T	0	ms	
15	*SNO		P · S · T	0		
16	*BPS	.	P · S · T	0000		
17	MOD		P · S · T	0100		
18	*DMD		P · S · T	0000		
19	*BLK		P · S · T	0000		

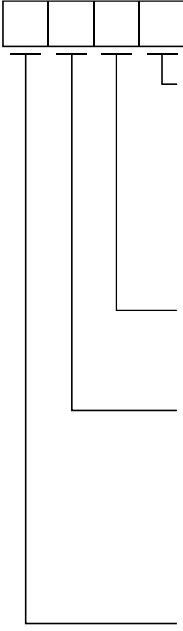
No.						
20	*OP2	2	P · S	0000		
21	*OP3	3( )	P	0000		
22	*OP4	4	P · S · T	0000		
23	FFC		P	0	%	
24	ZSP		P · S · T	50	r/min	
25	VCM		S	( 1 ) 0	(r/min)	
			T	( 1 ) 0	(r/min)	
26	TLC		T	100	%	
27	*ENR		P · S · T	4000	pulse	
28	TL1	1	P · S · T	100	%	
29	VCO		S	( 2 )	mV	
			T	( 2 )	mV	
30	TLO		T	0	mV	
			S	0	mV	
31	MO1	1	P · S · T	0	mV	
32	MO2	2	P · S · T	0	mV	
33	MBR		P · S · T	100	ms	
34	GD2		P · S	70	0.1	
35	PG2	2	P	7kW :35 11kW :19	rad/s	
36	VG 1	1	P · S	7kW :177 11kW :96	rad/s	
37	VG2	2	P · S	7kW :817 11kW :455	rad/s	
38	VIC		P · S	48	ms	
39	VDC		P · S	980		
40				0		
41	*DIA	ON	P · S · T	0000		
42	*DI1	1	P · S · T	0003		
43	*DI2	2(CN1B - 5)	P · S · T	0111		
44	*DI3	3(CN1B - 14)	P · S · T	0222		
45	*DI4	4(CN1A - 8)	P · S · T	0665		
46	*DI5	5(CN1B - 7)	P · S · T	0770		
47	*DI6	6(CN1B - 8)	P · S · T	0883		
48	*DI7	7(CN1B - 9)	P · S · T	0994		
49	*DO1	1	P · S · T	0000		

)

No.						
50					0000	
51	*OP6	6		P · S · T	0000	
52					0000	
53	*OP8	8		P · S · T	0000	
54	*OP9	9		P · S · T	0000	
55	*OPA	A		P	0000	
56	SIC			P · S · T	0	s
57					10	
58	NH1	1		P · S · T	0000	
59	NH2	2		P · S · T	0000	
60	LPF	.		P · S · T	0000	
61	GD2B		2	P · S	70	×0.1
62	PG2B	2		P	100	%
63	VG2B	2		P · S	100	%
64	VICB			P · S	100	%
65	*CDP			P · S	0000	
66	CDS			P · S	10	( 3)
67	CDT			P · S	1	ms
68					0	
69	CMX2	2		P	1	
70	CMX3	3		P	1	
71	CMX4	4		P	1	
72	SC4	4		S	200	r/min
		4		T		
73	SC5	5		S	300	r/min
		5		T		
74	SC6	6		S	500	r/min
		6		T		
75	SC7	7		S	800	r/min
		7		T		
76	TL2	2		P · S · T	100	%
77					100	
78					10000	
79					10	
80					10	
81					100	
82					100	
83					100	
84					0	

- ) 1. "0" 가
- 2.
- 3. No.65



No.						
1	*OP1	<p>1 · CN1B - 19</p>  <p>가</p> <p>0 : 1 : 1.777[ms] 2 : 3.555[ms] 3 : 5.333[ms]</p> <p>CN1B-19 0 : (ZSP) 1 : (MBR)</p> <p>CN1B-18 0 : (ALM) 1 : (interlock)(DB) 11 kW (interlock)(DB)</p> <p>( 15 )</p> <p>0 : 1 :</p>	0002			P·S·T

	No.																																																					
	2	<p style="text-align: center;">.( 7 )</p> <div style="display: flex; align-items: center; justify-content: center;"> <table border="1" style="margin-right: 20px;"> <tr><td>0</td><td></td><td>0</td><td></td></tr> </table> <div style="text-align: center;"> <p>가</p> <table border="1"> <tr><td>1</td><td>15Hz</td></tr> <tr><td>2</td><td>20Hz</td></tr> <tr><td>3</td><td>25Hz</td></tr> <tr><td>4</td><td>30Hz</td></tr> <tr><td>5</td><td>35Hz</td></tr> <tr><td>6</td><td>45Hz</td></tr> <tr><td>7</td><td>55Hz</td></tr> <tr><td>8</td><td>70Hz</td></tr> <tr><td>9</td><td>85Hz</td></tr> <tr><td>A</td><td>105Hz</td></tr> <tr><td>B</td><td>130Hz</td></tr> <tr><td>C</td><td>160Hz</td></tr> <tr><td>D</td><td>200Hz</td></tr> <tr><td>E</td><td>240Hz</td></tr> <tr><td>F</td><td>300Hz</td></tr> </table> <p>가</p> </div> </div> <p style="text-align: center;">( 7.1.1 )</p> <table border="1" style="margin-left: 20px;"> <tr><td>0</td><td></td><td>1( No.6)</td></tr> <tr><td>1</td><td>1</td><td></td></tr> <tr><td>2</td><td>2</td><td>No.34</td></tr> <tr><td>3</td><td>1</td><td></td></tr> <tr><td>4</td><td>2</td><td></td></tr> </table>	0		0		1	15Hz	2	20Hz	3	25Hz	4	30Hz	5	35Hz	6	45Hz	7	55Hz	8	70Hz	9	85Hz	A	105Hz	B	130Hz	C	160Hz	D	200Hz	E	240Hz	F	300Hz	0		1( No.6)	1	1		2	2	No.34	3	1		4	2		<p>7kW :0105</p> <p>11kW :0102</p>		P.S
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4	2																																																					
	3	<p>( )</p> <p>5.21</p> <p>“0” HC-MFS 131072pulse가</p>	1	<p>0.1 ~ 65535</p>	P																																																	
	4	<p>( )</p> <p>5.21</p>	1	<p>1 ~ 65535</p>	P																																																	



<p>No.</p> <p>5</p> <p>INP</p>	<p>(INP)</p> <p>10mm, 가 131072pulse/rev, (CMX), (CDV)가 CMX/CDV=16384/125 100μm 가 "10"</p> $\frac{100[\mu\text{m}] \times 10^{-6}}{10[\text{mm}] \times 10^{-3}} \times 131072[\text{pulse/rev}] \times \frac{125}{16384} \times 10$	<p>100</p>	<p>pulse</p>	<p>0 ~ 10000</p>	<p>P</p>
<p>6</p> <p>PG1</p>	<p>1 1 1.2 가</p>	<p>7kW :35 11kW :19</p>	<p>red/s</p>	<p>4 ~ 2000</p>	<p>P</p>
<p>7</p> <p>PST</p>	<p>가 ( ) 1 No.55 1 가 가 0~10ms가 10ms 10ms</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <p>가 ( No.0) No.20 가</p> </div> <p>( )</p>	<p>3</p>	<p>ms</p>	<p>0 ~ 20000</p>	<p>P</p>

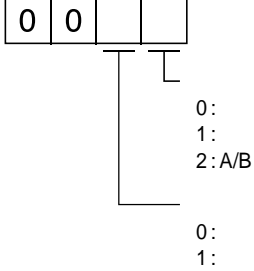
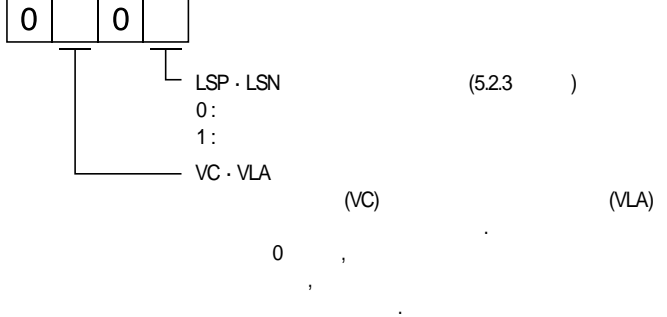
	No.						
	8	SC1	1 1 .	100	r/min	0 ~	S
			1 1 .				T
	9	SC2	2 2 .	500	r/min	0 ~	S
			2 2 .				T
	10	SC3	3 3 .	1000	r/min	0 ~	S
			3 3 .				T
11	STA	<p>가 가 1~7 , 0r/min</p> <p>회전속도 정격 회전속도 0 r/min</p> <p>설정된 지령속도가 정격 회전속도보다 낮은 경우, 가속 시간은 짧아집니다.</p> <p>파라미터 No.11 설정값 파라미터 No.12 설정값</p> <p>가 3000r/min 0r/min 1000r/min 1s 가 3000(3s)</p>		ms	0 ~ 20000	S · T	
12	STB	0r/min	1~7				

	No.					
13	STC	<p>S 가 S 가</p> <p>지령속도 서보모터 0r/min 시간</p> <p>STA STC STC STB STC</p> <p>STA: 가 ( No.11) STB: 가 ( No.12) STC: S 가 ( No.13) STA( 가 ) STB( 가 ) S 가 가</p> <p>가 <math>\frac{2000000}{STA}</math>, <math>\frac{2000000}{STB}</math> ( ) STA = 20000, STB = 5000, STC = 200</p> <p>가 : 100[ms] <math>\left( \begin{array}{l} \frac{2000000}{20000} = 100[ms] &lt; 200[ms] \\ 100[ms] \end{array} \right)</math> : 200[ms] <math>\left( \begin{array}{l} \frac{2000000}{5000} = 400[ms] &gt; 200[ms] \\ 200[ms] \text{가} \end{array} \right)</math></p>	0	ms	0 ~ 1000	S·T
14	TQC	<p>1</p> <p>토크 지령 토크 필터 후 시간</p> <p>TQC TQC</p> <p>TQC:</p>	0	ms	0 ~ 20000	T
15	*SNO	<p>1 1 가 :</p>	0		0 ~ 31	P·S·T

No.																																											
16	*BPS	<p>0 : 9600[bps] 1 : 19200[bps] 2 : 38400[bps] 3 : 57600[bps]</p> <p>0 : 1 :</p> <p>0 : RS-232C 1 : RS-422</p> <p>0 : 1 : 800<math>\mu</math>s</p> <p>“0”가</p>	0000	P.S.T																																							
17	MOD	<p>1(MO1) . (.5.3 )</p> <p>2(MO2)</p> <table border="1"> <thead> <tr> <th></th> <th>2(MO2)</th> <th>1(MO1)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>(<math>\pm 8V/</math></td> <td>)</td> </tr> <tr> <td>1</td> <td>(<math>\pm 8V/</math></td> <td>)( )</td> </tr> <tr> <td>2</td> <td>(<math>\pm 8V/</math></td> <td>)</td> </tr> <tr> <td>3</td> <td>(<math>\pm 8V/</math></td> <td>)( )</td> </tr> <tr> <td>4</td> <td>(<math>\pm 8V/</math></td> <td>)</td> </tr> <tr> <td>5</td> <td>(<math>\pm 10V/500kpps</math>)</td> <td></td> </tr> <tr> <td>6</td> <td>(<math>\pm 10V/128pulse</math>)</td> <td></td> </tr> <tr> <td>7</td> <td>(<math>\pm 10V/2048pulse</math>)</td> <td></td> </tr> <tr> <td>8</td> <td>(<math>\pm 10V/8192pulse</math>)</td> <td></td> </tr> <tr> <td>9</td> <td>(<math>\pm 10V/32768pulse</math>)</td> <td></td> </tr> <tr> <td>A</td> <td>(<math>\pm 10V/131072pulse</math>)</td> <td></td> </tr> <tr> <td>B</td> <td>(<math>\pm 8V/400V</math>)</td> <td></td> </tr> </tbody> </table> <p>8V No.28 - 76 8V</p>		2(MO2)	1(MO1)	0	( $\pm 8V/$	)	1	( $\pm 8V/$	)( )	2	( $\pm 8V/$	)	3	( $\pm 8V/$	)( )	4	( $\pm 8V/$	)	5	( $\pm 10V/500kpps$ )		6	( $\pm 10V/128pulse$ )		7	( $\pm 10V/2048pulse$ )		8	( $\pm 10V/8192pulse$ )		9	( $\pm 10V/32768pulse$ )		A	( $\pm 10V/131072pulse$ )		B	( $\pm 8V/400V$ )		0100	P.S.T
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	No.																					
	18	<p>*DMD</p> <div style="text-align: center;"> <table border="1" style="margin: 0 auto;"> <tr> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;"></td> <td style="padding: 2px;"></td> </tr> </table>   <div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; border-bottom: 1px solid black; width: 10px; height: 10px; margin-right: 5px;"></div> <div style="margin-left: 5px;"> <p>0:</p> <p>1:</p> <p>2:</p> <p>3:</p> <p>4:</p> <p>5: ( 1)</p> <p>6: ( 2)</p> <p>7:</p> <p>8:</p> <p>9:</p> <p>A:</p> <p>B:1</p> <p>C:1</p> <p>D:ABS</p> <p>E:</p> <p>F:</p> <p>  1.</p> <p>  2.</p> </div> </div>   <div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; border-bottom: 1px solid black; width: 10px; height: 10px; margin-right: 5px;"></div> <div style="margin-left: 5px;"> <p>0:</p> </div> </div>   <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr><td style="width: 50px; height: 15px;"></td><td style="width: 50px; height: 15px;"></td></tr> <tr><td style="text-align: center;">/</td><td style="text-align: center;">/</td></tr> <tr><td style="width: 50px; height: 15px;"></td><td style="width: 50px; height: 15px;"></td></tr> <tr><td style="text-align: center;">/</td><td style="text-align: center;">/</td></tr> <tr><td style="width: 50px; height: 15px;"></td><td style="width: 50px; height: 15px;"></td></tr> <tr><td style="text-align: center;">/</td><td style="text-align: center;">/</td></tr> </table>   <p>1:</p> </div>	0	0					/	/			/	/			/	/	0000			P.S.T
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No.																																								
19	*BLK	<table border="1"> <thead> <tr> <th></th> <th>No.0 ~ 19</th> <th>No.20 ~ 49<sup>1</sup></th> <th>No.50 ~ 84<sup>2</sup></th> </tr> </thead> <tbody> <tr> <td>000 ( )</td> <td></td> <td></td> <td></td> </tr> <tr> <td>000A</td> <td>No.19 No.19</td> <td></td> <td></td> </tr> <tr> <td>000B</td> <td></td> <td></td> <td></td> </tr> <tr> <td>000C</td> <td></td> <td></td> <td></td> </tr> <tr> <td>000E</td> <td></td> <td></td> <td></td> </tr> <tr> <td>100B</td> <td>No.19</td> <td></td> <td></td> </tr> <tr> <td>100C</td> <td>No.19</td> <td></td> <td></td> </tr> <tr> <td>100E</td> <td>No.19</td> <td></td> <td></td> </tr> </tbody> </table>		No.0 ~ 19	No.20 ~ 49 <sup>1</sup>	No.50 ~ 84 <sup>2</sup>	000 ( )				000A	No.19 No.19			000B				000C				000E				100B	No.19			100C	No.19			100E	No.19			0000	P·S·T
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20	*OP2	<p>2</p> <p>(AL10) 가 가</p> <p>0: ( (AL10) )</p> <p>1:</p> <p>0: ( )</p> <p>1: ( )</p> <p>가 0r/min가</p> <p>No.2 "0400"</p> <p>가</p> <p>0:</p> <p>1:</p>	0000	S																																				
					P·S																																			

<p>No.</p> <p>21</p>	<p>*OP3</p>	<p>3( )</p> <p>(3.41 )</p> 	<p>0000</p>															
<p>22</p>	<p>*OP4</p>	<p>4</p> <p>(LSP) · (LSN) OFF</p> <p>VC · VLA</p>  <table border="1" data-bbox="550 1142 1013 1332"> <thead> <tr> <th></th> <th>[ms]</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> </tr> <tr> <td>1</td> <td>0.444</td> </tr> <tr> <td>2</td> <td>0.888</td> </tr> <tr> <td>3</td> <td>1.777</td> </tr> <tr> <td>4</td> <td>3.555</td> </tr> </tbody> </table>		[ms]	0	0	1	0.444	2	0.888	3	1.777	4	3.555	<p>0000</p>		<p>P·S</p> <p>P·S·T</p>	
	[ms]																	
0	0																	
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<p>23</p>	<p>FFC</p>	<p>100% 가 , 가 가</p> <p>100% 가</p> <p>1s</p>	<p>0</p>	<p>%</p>	<p>0 ~ 100</p>	<p>P</p>												
<p>24</p>	<p>ZSP</p>	<p>(ZSP)</p>	<p>50</p>	<p>r/min</p>	<p>0 ~ 10000</p>	<p>P·S·T</p>												
<p>25</p>	<p>VCM</p>	<p>(VC) (10V) 가</p> <p>“0”</p>	<p>0</p>	<p>r/min</p>	<p>0</p> <p>1~50000</p>	<p>S</p>												
<p></p>	<p></p>	<p>(VLA) (10V) 가</p> <p>“0”</p>	<p>0</p>	<p>r/min</p>	<p>0</p> <p>1~50000</p>	<p>T</p>												

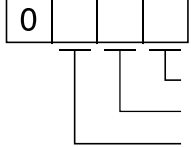
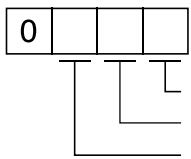
	No.											
	26	<p>TLC</p> $= 100[\%] \times \frac{50}{100}$ <p>(TC=±8V) +8V TC = +8V</p>	100	%	0 ~ 1000	T						
	27	<p>*ENR</p> <p>A·B 가 (A, B) 가 No.54 A·B 1.3Mbps(4)가 1/4 가 No.54 "0" ( ) 1 = [pulse/rev] A·B 5600 A·B = <math>\frac{5600}{4} = 1400[\text{pulse}]</math> No.54 "1" 1 = <math>\frac{1}{8}</math> [pulse/rev] A·B A·B = <math>\frac{131072}{8} \cdot \frac{1}{4} = 4906[\text{pulse}]</math></p>	4000	pulse /rev	1 ~ 65535	P·S·T						
	28	<p>TL1</p> <p>1 =100%</p> <p>"0"</p> <table border="1" data-bbox="379 1505 1050 1675"> <tr> <td>( )TL</td> <td></td> </tr> <tr> <td>0</td> <td>1( No.28)</td> </tr> <tr> <td>1</td> <td>&lt; 1: &gt; 1: 1</td> </tr> </table> <p>( ) 0: SG OFF( ) 1: SG ON( )</p> <p>(+8V) (3.41 (5) )</p>	( )TL		0	1( No.28)	1	< 1: > 1: 1	100	%	0~100	P·S·T
( )TL												
0	1( No.28)											
1	< 1: > 1: 1											

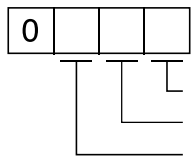
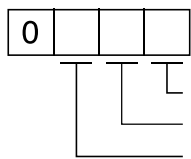
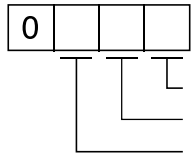
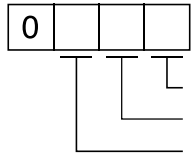


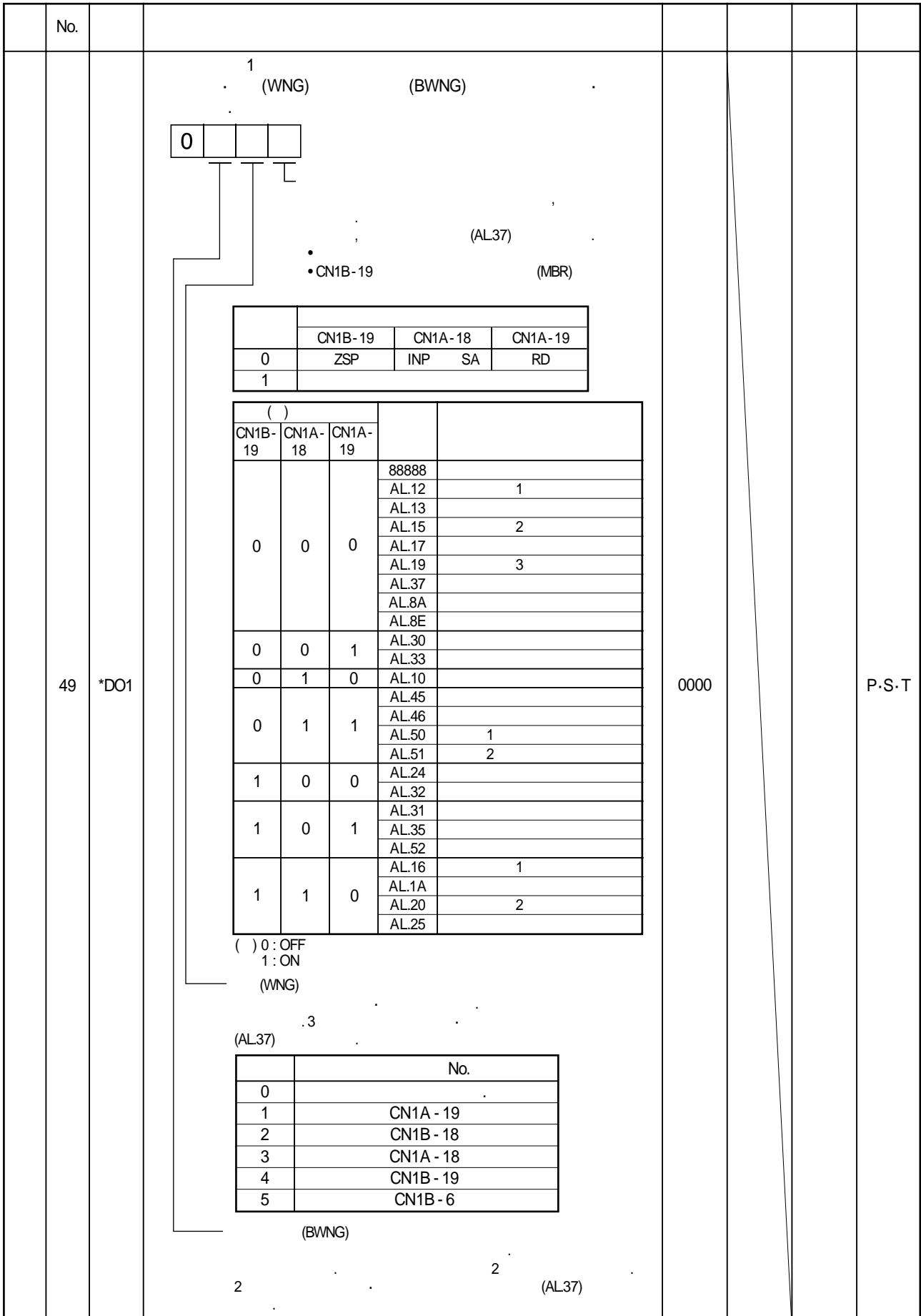
No.							
29	VC0	(VC) VC 0V 가 , (ST1) ON CCW VC VC-LG 0V VC (.63 )	mV	-999 ~ 999	S		
		(VLA) VC 0V 가 , (RS1) ON CCW VC VLA-LG 0V VC (.63 )			T		
30	TL0	(TC)	0	mV	-999 ~ 999	T	
		(TLA)			S		
31	MO1	1 ch1 (MO1)	0	mV	-999 ~ 999	P·S·T	
32	MO2	2 ch2 (MO2)	0	mV	-999 ~ 999	P·S·T	
33	MBR	(Mb) (MBR) OFF	100	ms	0 ~ 1000	P·S·T	

No.								
34	GD2	(7.1.1 )	1 0~1000	가	70	0.1	0 ~ 3000	P·S
35	PG2		2 1,2, 가	가	7kW : 35 11kW : 19	rad/s	0 ~ 1000	P
36	VG1		1 1,2, 가	가	7kW : 177 11kW : 96	rad/s	20 ~ 8000	P·S
37	VG2	가	2 가 1,2, 가	가	7kW : 817 11kW : 455	rad/s	20 ~ 20000	P·S
38	VIC		1,2, 가	가	48	ms	0 ~ 1000	P·S
39	VDC		ON		980		0 ~ 1000	P·S
40					0			

No.																			
41	*DIA	<p>SON · LSP · LSN      ON      ON</p> <p>0: ON      ON/OFF 1:      ON</p> <p>(      )</p> <p>0:      ON/OFF 1:      ON</p> <p>(      )</p> <p>0:      ON/OFF 1:      ON</p> <p>(      )</p>	0000		P·S·T														
42	*D11	<p>1      (CR)</p> <p>(LOP)</p> <p>No.0 / / / / /</p> <table border="1"> <thead> <tr> <th></th> <th>No.</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>CN1B - 5</td> </tr> <tr> <td>1</td> <td>CN1B - 14</td> </tr> <tr> <td>2</td> <td>CN1A - 8</td> </tr> <tr> <td>3</td> <td>CN1B - 7</td> </tr> <tr> <td>4</td> <td>CN1B - 8</td> </tr> <tr> <td>5</td> <td>CN1B - 9</td> </tr> </tbody> </table> <p>(CR)</p> <p>0: ON 1: ON</p>		No.	0	CN1B - 5	1	CN1B - 14	2	CN1A - 8	3	CN1B - 7	4	CN1B - 8	5	CN1B - 9	0003		P/S S/T T/P
	No.																		
0	CN1B - 5																		
1	CN1B - 14																		
2	CN1A - 8																		
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						P													

	No.																																																																							
43	*DI2	<p>2(CN1B-5) No.42 (LOP) CN1B-5 , CN1B-5 가</p>  <p>가</p> <table border="1" data-bbox="391 795 1061 1310"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">( )</th> </tr> <tr> <th>P</th> <th>S</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>0</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td>SON</td> <td>SON</td> <td>SON</td> </tr> <tr> <td>2</td> <td>RES</td> <td>RES</td> <td>RES</td> </tr> <tr> <td>3</td> <td>PC</td> <td>PC</td> <td></td> </tr> <tr> <td>4</td> <td>TL</td> <td>TL</td> <td></td> </tr> <tr> <td>5</td> <td>CR</td> <td>CR</td> <td>CR</td> </tr> <tr> <td>6</td> <td></td> <td>SP1</td> <td>SP1</td> </tr> <tr> <td>7</td> <td></td> <td>SP2</td> <td>SP2</td> </tr> <tr> <td>8</td> <td></td> <td>ST1</td> <td>RS2</td> </tr> <tr> <td>9</td> <td></td> <td>ST2</td> <td>RS1</td> </tr> <tr> <td>A</td> <td></td> <td>SP3</td> <td>SP3</td> </tr> <tr> <td>B</td> <td>CM1</td> <td></td> <td></td> </tr> <tr> <td>C</td> <td>CM2</td> <td></td> <td></td> </tr> <tr> <td>D</td> <td>TL1</td> <td>TL1</td> <td>TL1</td> </tr> <tr> <td>E</td> <td>CDP</td> <td>CDP</td> <td>CDP</td> </tr> </tbody> </table> <p>( ) P: S: T:</p>		( )			P	S	T	0				1	SON	SON	SON	2	RES	RES	RES	3	PC	PC		4	TL	TL		5	CR	CR	CR	6		SP1	SP1	7		SP2	SP2	8		ST1	RS2	9		ST2	RS1	A		SP3	SP3	B	CM1			C	CM2			D	TL1	TL1	TL1	E	CDP	CDP	CDP	0111		P·S·T
	( )																																																																							
	P	S	T																																																																					
0																																																																								
1	SON	SON	SON																																																																					
2	RES	RES	RES																																																																					
3	PC	PC																																																																						
4	TL	TL																																																																						
5	CR	CR	CR																																																																					
6		SP1	SP1																																																																					
7		SP2	SP2																																																																					
8		ST1	RS2																																																																					
9		ST2	RS1																																																																					
A		SP3	SP3																																																																					
B	CM1																																																																							
C	CM2																																																																							
D	TL1	TL1	TL1																																																																					
E	CDP	CDP	CDP																																																																					
44	*DI3	<p>3(CN1B-14) CN1B-14 2( No.43) No.42 (LOP) CN1B-14 , CN1B-14 가</p>  <p>가</p>	0222		P·S·T																																																																			

No.						
45	*DI4	<p>4(CN1A - 8) CN1A - 8</p> <p>2( No.43)</p>  <p>No.42 } CN1A-8 (LOP) CN1A-8</p>	0665			P·S·T
46	*DI5	<p>5(CN1B - 7) CN1B - 7</p> <p>2( No.43)</p>  <p>No.42 } CN1B-7 (LOP) CN1B-7</p>	0770			P·S·T
47	*DI6	<p>6(CN1B - 8) CN1B - 8</p> <p>2( No.43)</p>  <p>No.42 } CN1B-8 (LOP) CN1B-8</p> <p>No.1 “ CN1B - 8 ABS (ABSM)가 .(15.5 )”</p>	0883			P·S·T
48	*DI7	<p>7(CN1B - 9) CN1B - 9</p> <p>2( No.43)</p>  <p>No.42 } CN1B-9 (LOP) CN1B-9</p> <p>No.1 “ CN1B - 9 ABS (ABSR)가 .(15.5 )”</p>	0994			P·S·T



No.																							
50			0000																				
51	*OP6	<p>6 (RES) ON ( )</p> <p>0 0 0</p> <p>0: OFF 1: OFF</p>	0000		P.S.T																		
52			0000																				
53	*OP8	<p>8</p> <p>0 0</p> <p>0: ( 가 ) 1: ( 가 )</p> <p>0: 1:</p>	0000		P.S.T																		
54	*OP9	<p>9</p> <table border="1"> <tr> <td></td> <td>( )</td> <td>( )</td> </tr> <tr> <td>0</td> <td>CCW</td> <td>CW</td> </tr> <tr> <td>1</td> <td>CW</td> <td>CCW</td> </tr> </table> <p>A · B</p> <table border="1"> <tr> <td></td> <td>CCW</td> <td>CW</td> </tr> <tr> <td>0</td> <td>A상 B상</td> <td>A상 B상</td> </tr> <tr> <td>1</td> <td>A상 B상</td> <td>A상 B상</td> </tr> </table> <p>( No.27 )</p> <p>0: 1:</p>		( )	( )	0	CCW	CW	1	CW	CCW		CCW	CW	0	A상 B상	A상 B상	1	A상 B상	A상 B상	0000		P.S.T
	( )	( )																					
0	CCW	CW																					
1	CW	CCW																					
	CCW	CW																					
0	A상 B상	A상 B상																					
1	A상 B상	A상 B상																					

No.																																																																																		
55	*OPA	<p>A 가 ( No.7 )</p> <p>0 0 0</p> <p>가 0:1 1: 가</p>	0000			P																																																																												
56	SIC	<p>[s]</p> <p>"0"</p>	0	0	0	P.S.T																																																																												
57			10	s	1~60																																																																													
58	NH1	<p>1 (.8.1 )</p> <p>0</p> <p>( No.60: 1 2 ) "00"</p> <table border="1"> <tr><td>00</td><td></td><td>08</td><td>562.5</td><td>10</td><td>281.3</td><td>18</td><td>187.5</td></tr> <tr><td>01</td><td>4500</td><td>09</td><td>500</td><td>11</td><td>264.7</td><td>19</td><td>180</td></tr> <tr><td>02</td><td>2250</td><td>0A</td><td>450</td><td>12</td><td>250</td><td>1A</td><td>173.1</td></tr> <tr><td>03</td><td>1500</td><td>0B</td><td>409.1</td><td>13</td><td>236.8</td><td>1B</td><td>166.7</td></tr> <tr><td>04</td><td>1125</td><td>0C</td><td>375</td><td>14</td><td>225</td><td>1C</td><td>160.1</td></tr> <tr><td>05</td><td>900</td><td>0D</td><td>346.2</td><td>15</td><td>214.3</td><td>1D</td><td>155.2</td></tr> <tr><td>06</td><td>750</td><td>0E</td><td>321.4</td><td>16</td><td>204.5</td><td>1E</td><td>150</td></tr> <tr><td>07</td><td>642.9</td><td>0F</td><td>300</td><td>17</td><td>195.7</td><td>1F</td><td>145.2</td></tr> </table> <table border="1"> <tr><td>0</td><td></td><td>-40dB</td></tr> <tr><td>1</td><td>~</td><td>-14dB</td></tr> <tr><td>2</td><td></td><td>-8dB</td></tr> <tr><td>3</td><td></td><td>-4dB</td></tr> </table>	00		08	562.5	10	281.3	18	187.5	01	4500	09	500	11	264.7	19	180	02	2250	0A	450	12	250	1A	173.1	03	1500	0B	409.1	13	236.8	1B	166.7	04	1125	0C	375	14	225	1C	160.1	05	900	0D	346.2	15	214.3	1D	155.2	06	750	0E	321.4	16	204.5	1E	150	07	642.9	0F	300	17	195.7	1F	145.2	0		-40dB	1	~	-14dB	2		-8dB	3		-4dB	0000			P.S.T
00		08	562.5	10	281.3	18	187.5																																																																											
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2		-8dB																																																																																
3		-4dB																																																																																
59	NH2	<p>2</p> <p>0</p> <p>No.58 "00"</p> <p>No.58</p>	0000			P.S.T																																																																												



No.							
60	LPF	<p style="text-align: center;">( 8 )</p> <p>0: ( ) 1: 가</p> <p>1kW <math>\frac{VG2 \times 10}{2 \times (1+GD2 \times 0.1)}</math> [Hz]</p> <p>2kW <math>\frac{VG2 \times 5}{2 \times (1+GD2 \times 0.1)}</math> [Hz]</p> <p>1( " " " " ) 가 No.58</p> <p>0: 1: 2: 0: 1:</p>	0000			P·S·T	
61	GD2B	2		70	0.1	0 ~ 3000	P·S
62	PG2B	2	2	100	%	10 ~ 200	P
63	VG2B	2	2	100	%	10 ~ 200	P·S
64	VICB			100	%	50 ~ 1000	P·S

No.						
65	*CDP	<p>(.83 )</p> <div style="border: 1px solid black; display: inline-block; padding: 2px;">0 0 0</div> <p>No.61-64</p> <p>0: . 1: (CDP) ON 2: 가 No.66 3: 가 No.66 4: 가 No.66</p>	0000			P·S
66	CDS	<p>No.68 ) ( . . )</p> <p>(8.5 )</p>	10	kpps pulse r/min	10 ~ 9999	P·S
67	CDT	<p>No.65, 66 , ( . . )</p> <p>(8.5 )</p>	1	ms	0 ~ 100	P
68			0			
69	CMX2	<p>2 . " 0 "</p>	1		0.1 ~ 65535	P
70	CMX3	<p>3 . " 0 "</p>	1		0.1 ~ 65535	P
71	CMX4	<p>4 . " 0 "</p>	1		0.1 ~ 65535	P
72	SC4	<p>4 .</p>	200	r/min	0 ~	S
		<p>4 .</p>				T
73	SC5	<p>5 .</p>	300	r/min	0 ~	S
		<p>5 .</p>				T

No.							
74	SC6	6	500	/	0 ~	S	
		6				T	
75	SC7	7	800		0 ~	S	
		7				T	
76	TL2	2 =100% "0"	100	%	0 ~ 100	P.S.T (.3.4.1 (5) )	
77	/		100	/	/	/	
78	/		10000	/	/	/	
79	/		10	/	/	/	
80	/		10	/	/	/	
81	/		100	/	/	/	
82	/		100	/	/	/	
83	/		100	/	/	/	
84	/		0	/	/	/	

5. 2

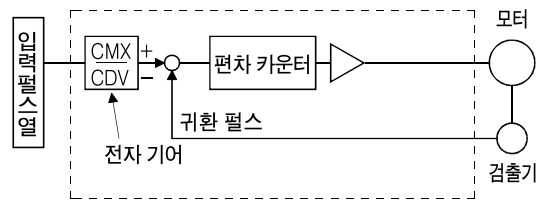
5.2.1

**⚠ 주의**

가  $\frac{1}{50} < \frac{CMX}{CDV} < 500$  가 .  
 가 . OFF

(1)

$$\frac{CMX}{CDV} = \frac{No.3}{No.4}$$



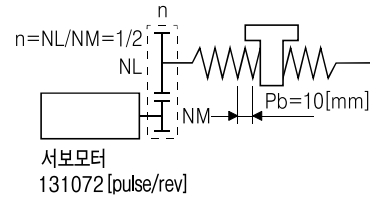
가 .  
 Pb : [mm]  
 n :  
 Pt : [pulse/rev]  
 o : 1 [mm/pulse]  
 S : 1 [mm/rev]  
 ° : 1 [°/pulse]  
 : 1 [°/rev]

(a) 1 10μm

: Pb = 10[mm]

: n = 1/2

: Pt = 131072[pulse/rev]



$$\frac{CMX}{CDV} = 0 \cdot \frac{Pt}{S} = 0 \cdot \frac{Pt}{n \cdot Pb} = 10 \times 10^{-3} \cdot \frac{131072}{1/2 \cdot 10} = \frac{262144}{1000} = \frac{32768}{125}$$

, CMX=32768, CDV=125 .

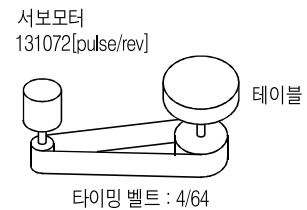
(b)

1 0.01.

: 360./rev

: n = 4/64

: Pt = 131072[pulse/rev]



$$\frac{CMX}{CDV} = 0 \cdot \frac{Pt}{S} = 0.01 \cdot \frac{131072}{4/64 \cdot 360} = \frac{65536}{1125} \dots\dots\dots (5.1)$$

CMX가 가 , 가 .  
CMX 1 .

$$\frac{CMX}{CDV} = \frac{65536}{1125} = \frac{26214.4}{450} = \frac{26214}{450}$$

, CMX=26214, CDV=450 .

	<p>No.3(CMX) “ 0 ” , CMX가</p> <p>(5.1) , CMX=0, CDV=2250 , CMX/CDV =</p> <p>131072/2250 가 ,</p> <p>가 가 .</p> <p>36000pulse</p> <p><math>36000 \cdot \frac{26214}{450} \cdot \frac{1}{131072} \cdot \frac{4}{64} \cdot 360 = 359.995.</math></p>
--	---

(2)

가 (1)(b) , CDV 가 가 .

(5.1)

$$\frac{CMX}{CDV} = \frac{65536}{1125} = 58.25422 \dots\dots\dots (5.2)$$

CMX 가 , .

$$\frac{CMX}{CDV} = \frac{65536}{1125} = \frac{32768}{562.5} \quad \frac{32768}{563} = 58.20249 \dots\dots\dots (5.3)$$

CDV 가 , .

$$\frac{CMX}{CDV} = \frac{65536}{1125} = \frac{26214.4}{450} \quad \frac{26214}{450} = 58.25333 \dots\dots\dots (5.4)$$

(5.2)

(5.4)

(1)(b)

CMX=26214, CDV=450 .

(3) AD75P

AD75P

가

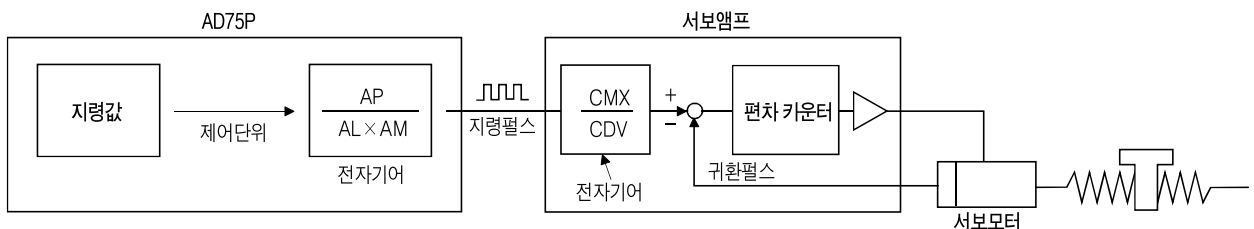
(

400kpulse/s,

200kpulse/s)

가 .

AP : 1  
AL : 1  
AM :



131072pulse/rev .

(r/min)	
2000	131072 × 2000/60 = 4369066 pulse/s
3000	131072 × 3000/60 = 6553600 pulse/s

AD75P 가 200kpulse/s,

400kpulse/s .

AD75P

AD75P

(200kpulse/s)

3000r/min ,

$$f \cdot \frac{CMX}{CDV} = \frac{No}{60} \cdot Pt$$

f : [pulse/s]  
 No. : [r/min]  
 Pt : [pulse/rev]

$$200 \cdot 10^3 \cdot \frac{CMX}{CDV} = \frac{3000}{60} \cdot 131072$$

$$\frac{CMX}{CDV} = \frac{3000}{60} \cdot \frac{131072}{200} = \frac{3000 \cdot 131072}{60 \cdot 200000} = \frac{4096}{125}$$

AD75P ( 가 10mm )

		3000r/min		2000r/min		
	[kpulse/s]	200	500	200	500	
	/1 [pulse/rev] (CMX/CDV)	131072		131072		
		4096/125	2048/125	8192/375	4096/375	
	[kpulse/s]( )	200	400	200	400	
AD75P	AD75P 1 [pulse/s]	4000	10000	6000	15000	
	1pulse	AP	1	1	1	1
		AL	1	1	1	1
		AM	1	1	1	1
	0.1 μm	AP	4000	10000	6000	15000
		AL	100.0[μm]	100.0[μm]	100.0[μm]	100.0[μm]
AM		10	10	10	10	

( )

## 5.2.2

2

(1)

No.17

파라미터 No.17

0		0	
---	--	---	--

아날로그 모니터ch1 출력 선택  
(MO1-LG간에 출력하는 신호)

아날로그 모니터ch2 출력 선택  
(MO2-LG간에 출력하는 신호)

No.31 · 32  
- 999~999mV

No.		[mV]
31	ch1	- 999 ~ 999
32	ch2	



(2)

ch1

ch2

No.17

(3)

0			6	( 1 ) ( ± 10V/128pulse )	
1	( 2 )		7	( 1 ) ( ± 10V/2048pulse )	
2			8	( 1 ) ( ± 10V/8192pulse )	
3	( 2 )		9	( 1 ) ( ± 10V/32768pulse )	
4	( )		A	( 1 ) ( ± 10V/131072pulse )	
5			B		

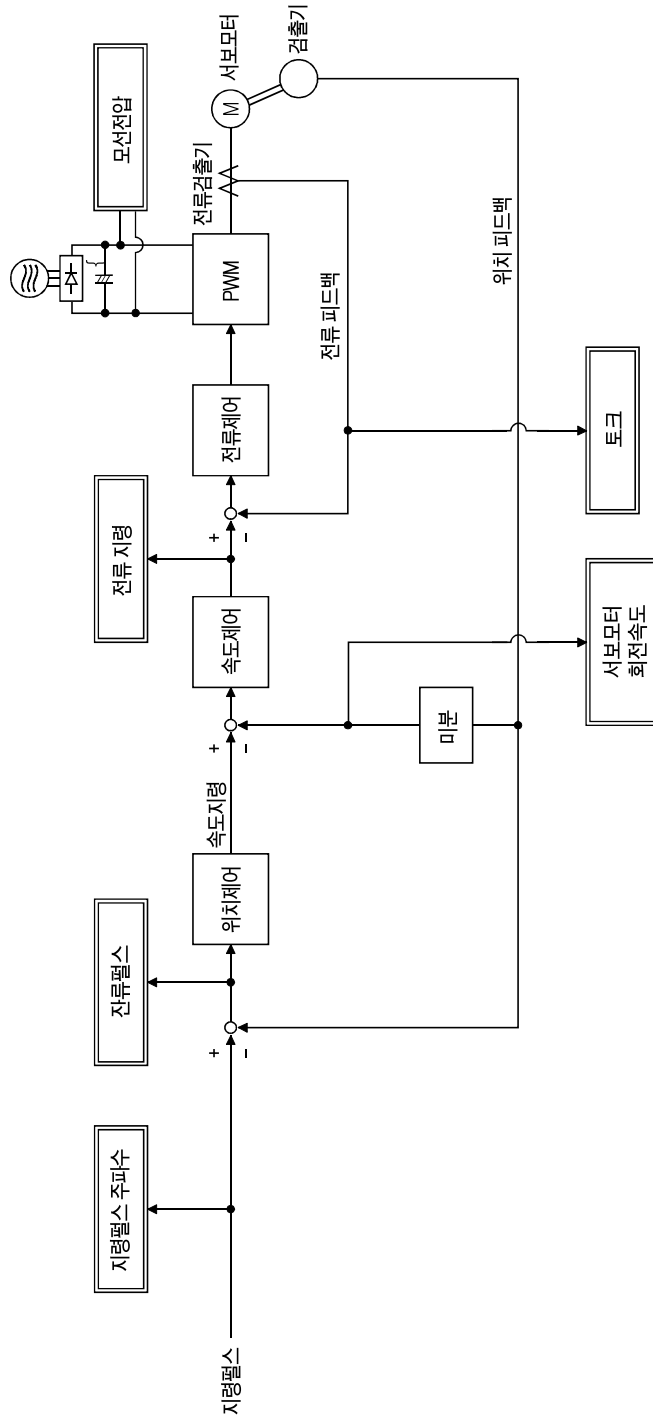
) 1.

2. 8V

No.28 · 76

8V

(3)



5.2.3

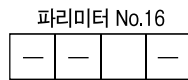
가

No.22

No.22	
0 ( )	: : 0
1	: No.7 : No.7

5.2.4

가 , 가 1 5  
No.16 , OFF ON No.16  
" 0 "

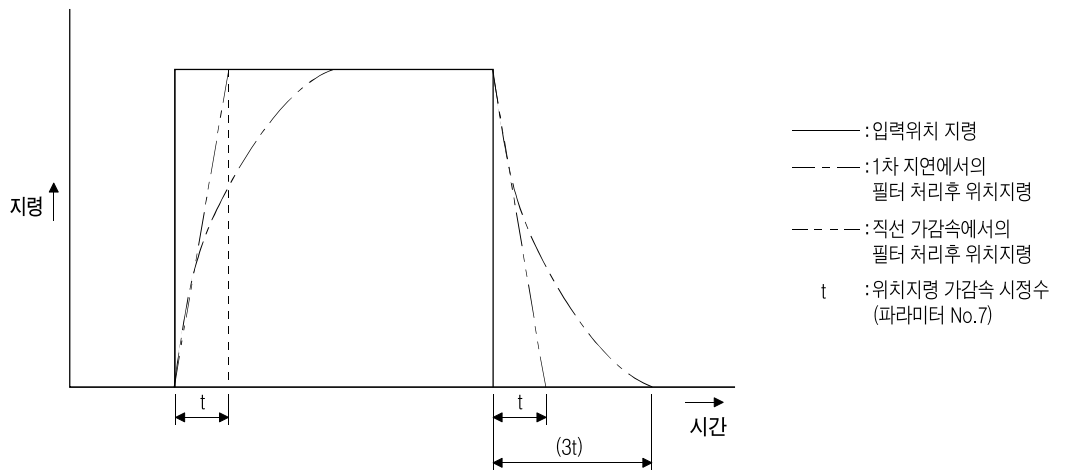


알람 이력 클리어  
0: 무효(소거 안함)  
1: 유효(소거함)

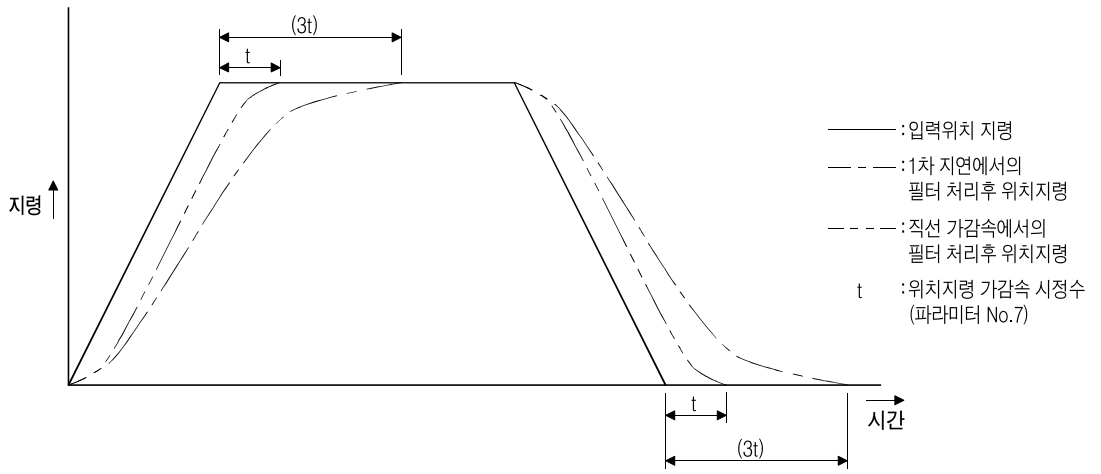
5.2.5

가 t( No.7) ,  
 가 No.55 1 가

(1)



(2)







6. 2

5 7 LED  
 “ UP ” “ DOWN ”  
 “ SET ”  
 2[s]  
 16 5  
 No.18

6.2.1

	2500r/min	
	3000r/min	
	15.5	
ABS	11252rev	
	- 12566rev	
		2, 3, 4, 5

6.2.2

2

	C	pulse	± 99999 5 "SET" "0" 2, 3, 4, 5	- 99999 ~ 99999
	r	r/min	0.1r/min	- 5400 ~ 5400
	E	pulse	2, 3, 4, 5 5	- 99999 ~ 99999
	P	pulse	(CMX/CDV) ± 99999 5 "SET" 0 2, 3, 4, 5	- 99999 ~ 99999
	n	kpps	(CMX/CDV)	- 800 ~ 800
	F	V	(1) (VLA) (2) (VC)	- 10.00 ~ +10.00
	U	V	(1) (TLA)	0 ~ +10.00
			(2) (TC)	- 10.00 ~ +10.00
	L	%	%	0 ~ 100
	J	%	100%	0 ~ 300
	b	%	100% , 15	0 ~ 400
	T	%	100%	0 ~ 400
1	Low	Cy1	pulse 1 CCW "0" 가	0 ~ 99999
1	High	Cy2	100 pulse 1 CCW "0" 가	0 ~ 1310
ABS	LS	rev		- 32768 ~ 32767
	dC			0.0 ~ 300.0
	Pn	V	(P - N )	0 ~ 450

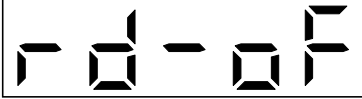
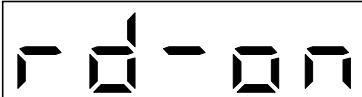
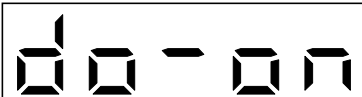


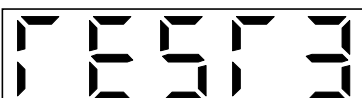








6.2.3

No.18 ,

/	/
/	/
/	/

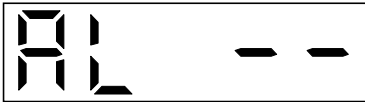
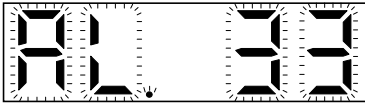






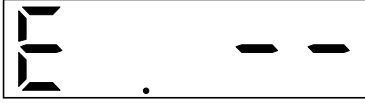
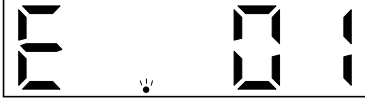
## 6. 3

			
			가 ON
		6.6	ON/OFF 가 가 No.43~49
(DO)			ON/OFF 6.7
	JOG		JOG 6.8.2
			1 (MRZJW3 - SETUP161E)가
			가 6.8.4
			MR Configurator( MRZJW3 - SETUP161E)가
Low			
High			

<p>VC</p>		<p>(VLA) 0V (VC) 가 0 NO.29 "SET" 1 "UP" "DOWN" 1 1 "SET" VC VLA ±0.4V</p>
<p>ID</p>		<p>"SET" ID MELSERVO</p>
<p>ID</p>		<p>"SET" ID MELSERVO</p>
<p>ID</p>		<p>"SET" ID MELSERVO</p>

6. 4

2 가 No.

		
		(AL.33)
		1 1(AL.50)
		2 (AL.33)
		3 (AL.10)
		4 (AL.31)가
		5
		6
		(AL.37)
		No.1

(1)

(2)

, 4

(3) ( , 10.2.1 .)

(a) OFF ON

(b) " SET "

(c) (RES) ON.

(4) No.16 .

(5) " SET " 2s .



(6) " UP " " DOWN " .

6. 5

\* 가 OFF ,  
 .5.1.2 .

(1)

, ( No.0) ,

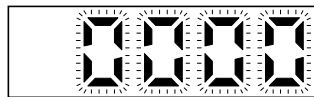
“MODE”



..... 파라미터 No.를 표시합니다.

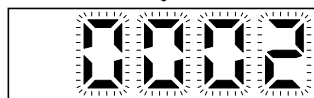
을 누르면 No.가 바뀝니다.  
 UP DOWN

을 2번 누릅니다.  
 SET



..... 지정한 파라미터 No.의 설정값이 점멸합니다.

을 2번 누릅니다.  
 UP



..... 점멸중에는 설정값을 변경할 수 있습니다.

을 사용 하십시오.  
 UP DOWN

(□□□2 : 속도제어 모드)

을 눌러서 확정합니다.  
 SET

No.0

“UP” “DOWN”

OFF ,

(2)

No.19( )

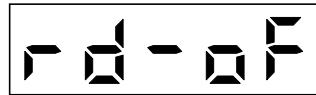
5.1.1 .

6. 6

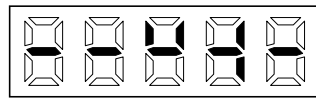
ON/OFF

(1)

“ MODE ”



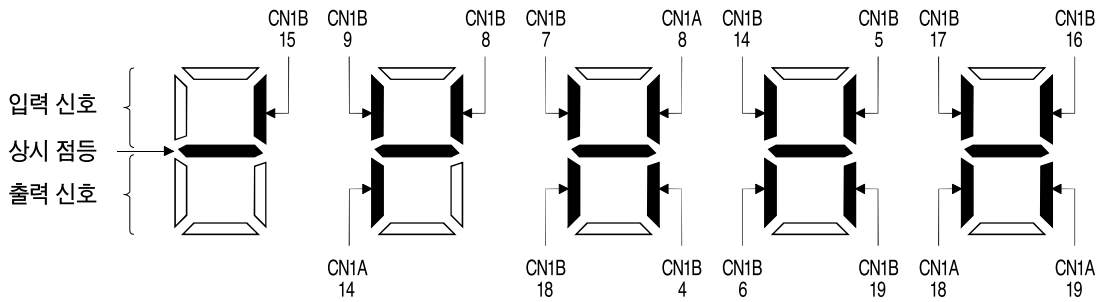
UP 버튼을 1번 누릅니다.



..... 외부 입출력 신호 표시 화면

(2)

7 LED



점등 : ON  
소등 : OFF

7 LED ON/OFF

가 , 가 가

(a)

	No.	( 1) I/O	( 2)						
			P	P/S	S	S/T	T	T/P	
CN1A	8	I	CR	CR/SP1	SP1	SP1	SP1	SP1/CR	No.43~48
	14	O	OP	OP	OP	OP	OP	OP	
	18	O	INP	INP/SA	SA	SA/ -		-/INP	No.49
	19	O	RD	RD	RD	RD	RD	RD	No.49
CN1B	( 3) 4	O	DO1	DO1	DO1	DO1	DO1	DO1	
	5	I	SON	SON	SON	SON	SON	SON	No.43~48
	6	O	TLC	TLC	TLC	TLC/VLC	VLC	VLC/TLC	No.49
	7	I		LOP	SP2	LOP	SP2	LOP	No.43~48
	8	I	PC	PC/ST1	ST1	ST1/RS2	RS2	RS2/PC	No.43~48
	9	I	TL	TL/ST2	ST2	ST2/RS1	RS1	RS1/TL	No.43~48
	14	I	RES	RES	RES	RES	RES	RES	No.43~48
	15	I	EMG	EMG	EMG	EMG	EMG	EMG	
	16	I	LSP	LSP	LSP	LSP/ -		-/LSP	
	17	I	LSN	LSN	LSN	LSN/ -		-/LSN	
	18	O	ALM	ALM	ALM	ALM	ALM	ALM	No.49
19	O	ZSP	ZSP	ZSP	ZSP	ZSP	ZSP	No.1 . 49	

( ) 1. I: , O:  
 2. P: , S: , T: , P/S: / , S/T: / , T/P: / ,  
 3. CN1A - 18 .

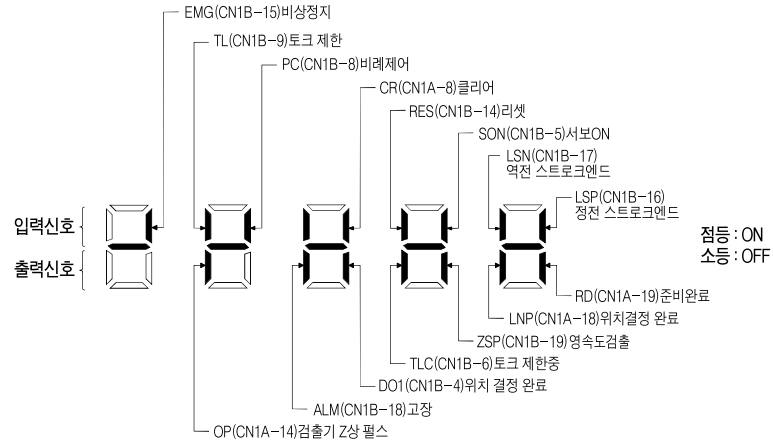
(b)

SON	ON	EMG	
LSP		LOP	
LSN		TLC	
CR		VLC	
SP1	1	RD	
SP2	2	ZSP	
PC		INP	
ST1		SA	
ST2		ALM	
RS1		WNG	
RS2		OP	Z ( )
TL		BWNG	
RES			

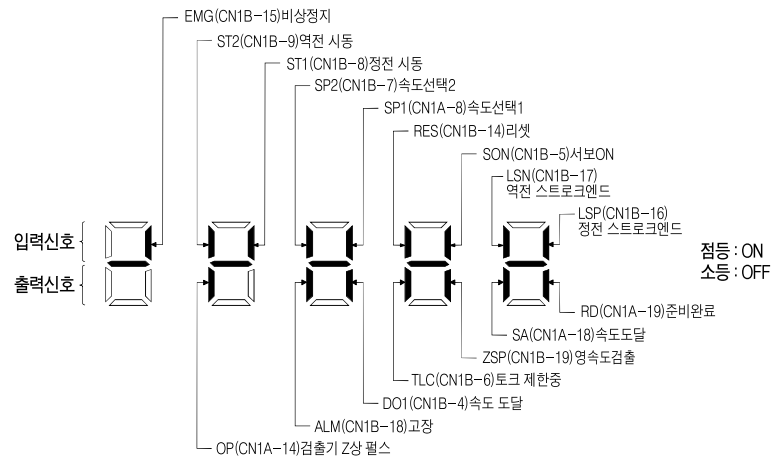


(3)

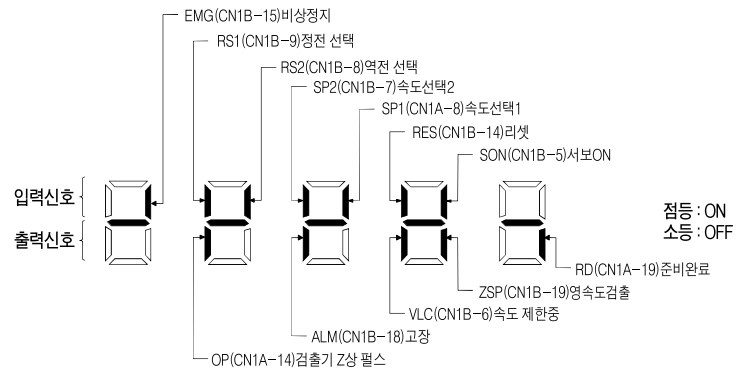
(a)



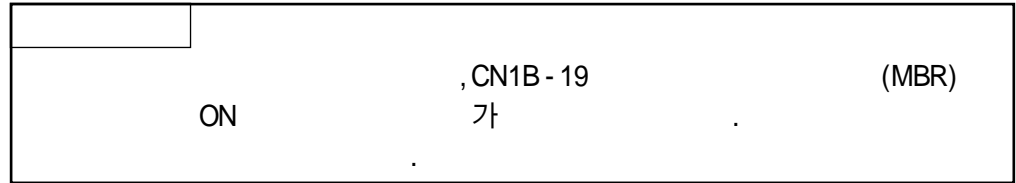
(b)



(c)

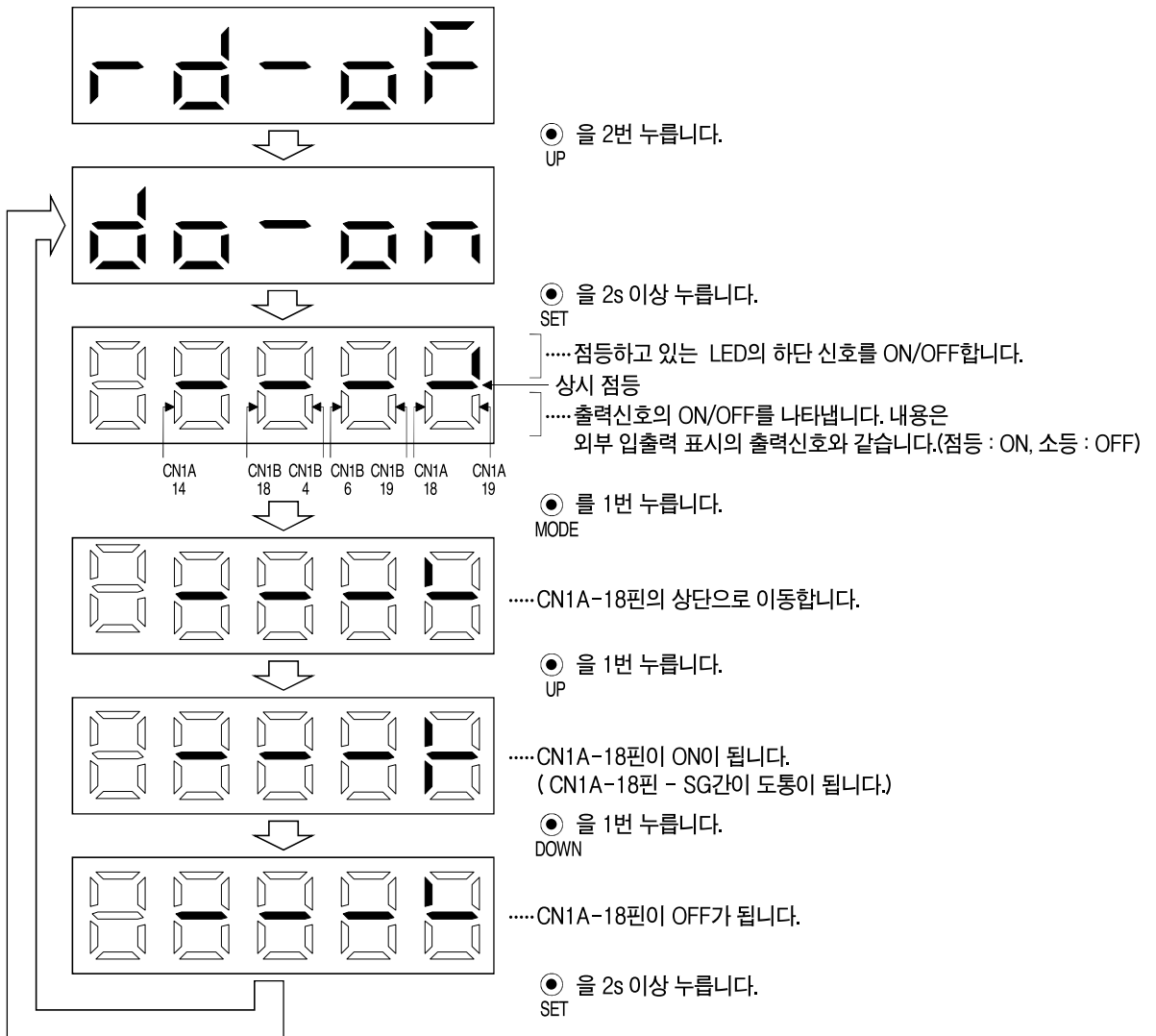


6.7 (DO)



ON/OFF  
OFF ( ON(SON) OFF)

“ MODE ”

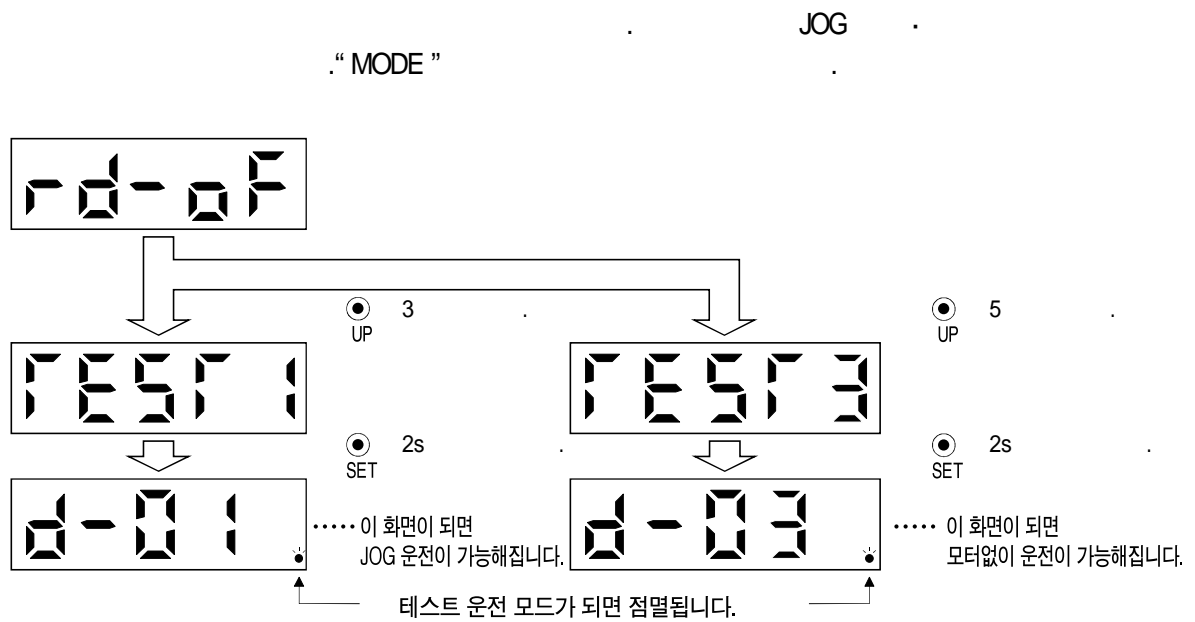


6. 8

⚠ 주의 (EMG)

“ ” No.1  
 MR Configurator( - )가  
 ON(SON) OFF

6.8.1



6.8.2 JOG

JOG

(1)

JOG , EMG - SG VDD - COM

“ UP ” “ DOWN ” 가

[r/min]	200	0~
가 [ms]	1000	0~50000

“ UP ”	CCW
“ DOWN ”	CW

MR Configurator( ) JOG

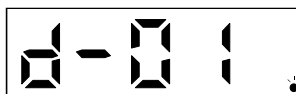
(2)

JOG  
 JOG 가 “ MODE ”  
 , JOG “ UP ” “ DOWN ”  
 “ MODE ” JOG 가  
 6.2

“ UP ” “ DOWN ”

(3) JOG

JOG 가, “ MODE ”  
 “ SET ” 2s



6.8.3

MR Configurator( )가

1

(1)

, EMG - SG

VDD - COM

MR Configurator( ) “ ” 가

[pulse]	10000	0~9999999
[r/min]	200	0~
가 [ms]	1000	0~50000

“ ”	CCW
“ ”	CW
“ ”	“ ”

(2)

6.8.4

- 가
- (1) SON - SG OFF 가
- (2) 가 "MODE" "MODE" 1 가 6.2 "UP" "DOWN"
- (3) OFF



7

--	--

7. 1

7.1.1

1

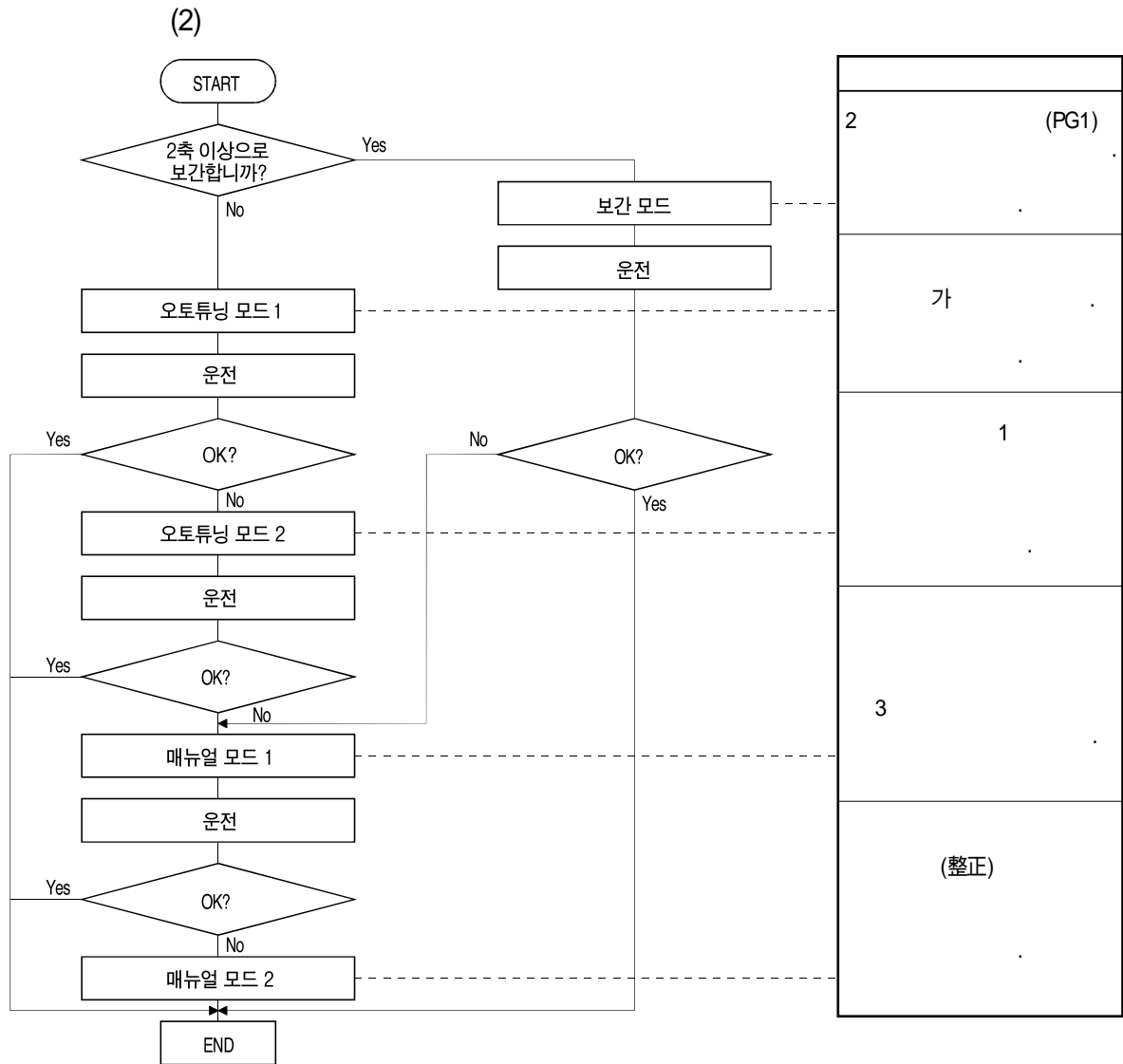
2, 1,

2

(1)

	No.2			
( ) 1	010		PG1( No.6) GD2( No.34) PG2( No.35) VG1( No.36) VG2( No.37) VIC( No.38)	No.2
2	020	No.34	PG1( No.6) PG2( No.35) VG1( No.36) VG2( No.37) VIC( No.38)	GD2( No.34) No.2
1	030		PG2( No.35) VG1( No.36)	PG1( No.6) GD2( No.34) VG2( No.37) VIC( No.38)
2	040		/	PG1( No.6) GD2( No.34) PG2( No.35) VG1( No.36) VG2( No.37) VIC( No.38)
	000		GD2( No.34) PG2( No.35) VG2( No.37) VIC( No.38)	PG1( No.6) VG1( No.36)





7.1.2 MR Configurator( - )

PC

	PC	가 가 ,
		(校正)
	PC	· PC

7. 2

7.2.1

( )

(1) 1 1

No.		
6	PG1	1
34	GD2	
35	PG2	2
36	VG1	1
37	VG2	2
38	VIC	

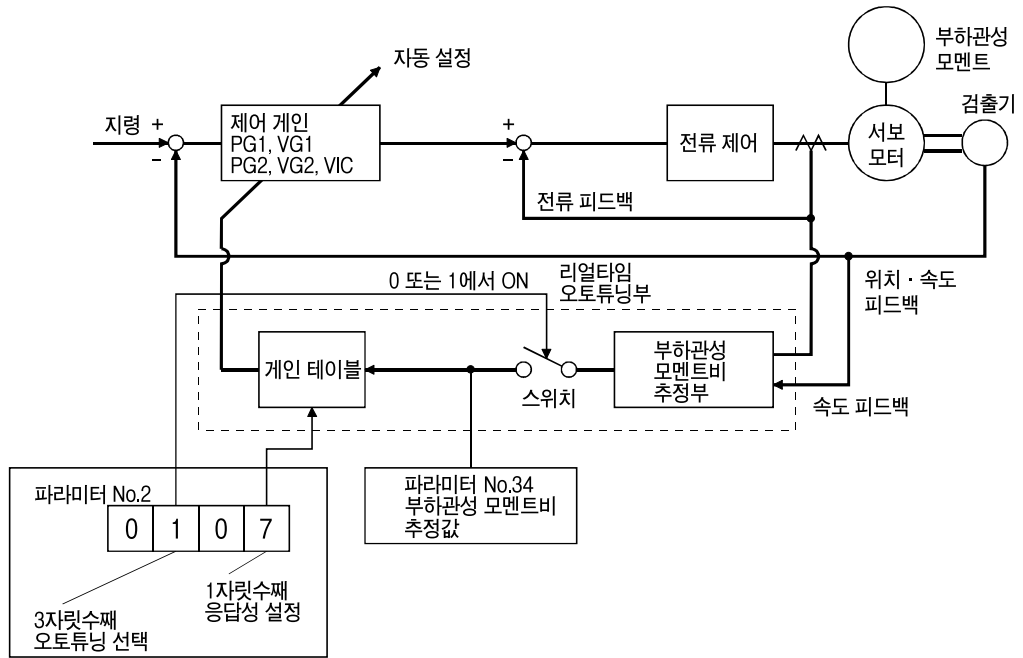
1	가
· 2000r/min	5s 가
· 가 150r/min	가100
· 가 가 10%	가
가 가가	가
2	1·2 가

(2) 2 2 1

( No.34)

No.		
6	PG1	1
35	PG2	2
36	VG1	1
37	VG2	2
38	VIC	

7.2.2

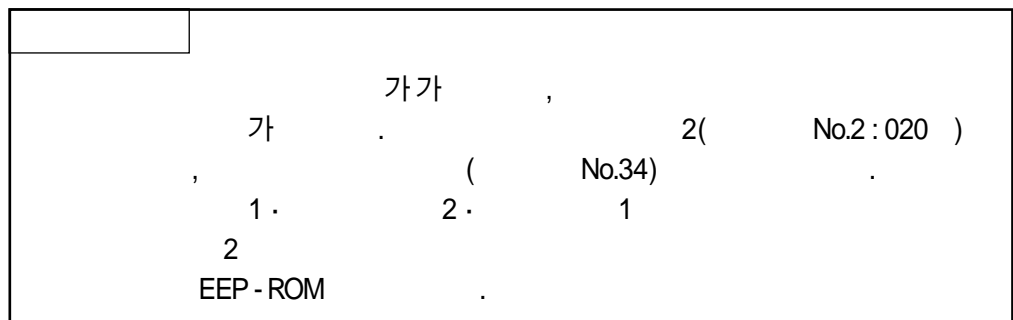


가

No.34(

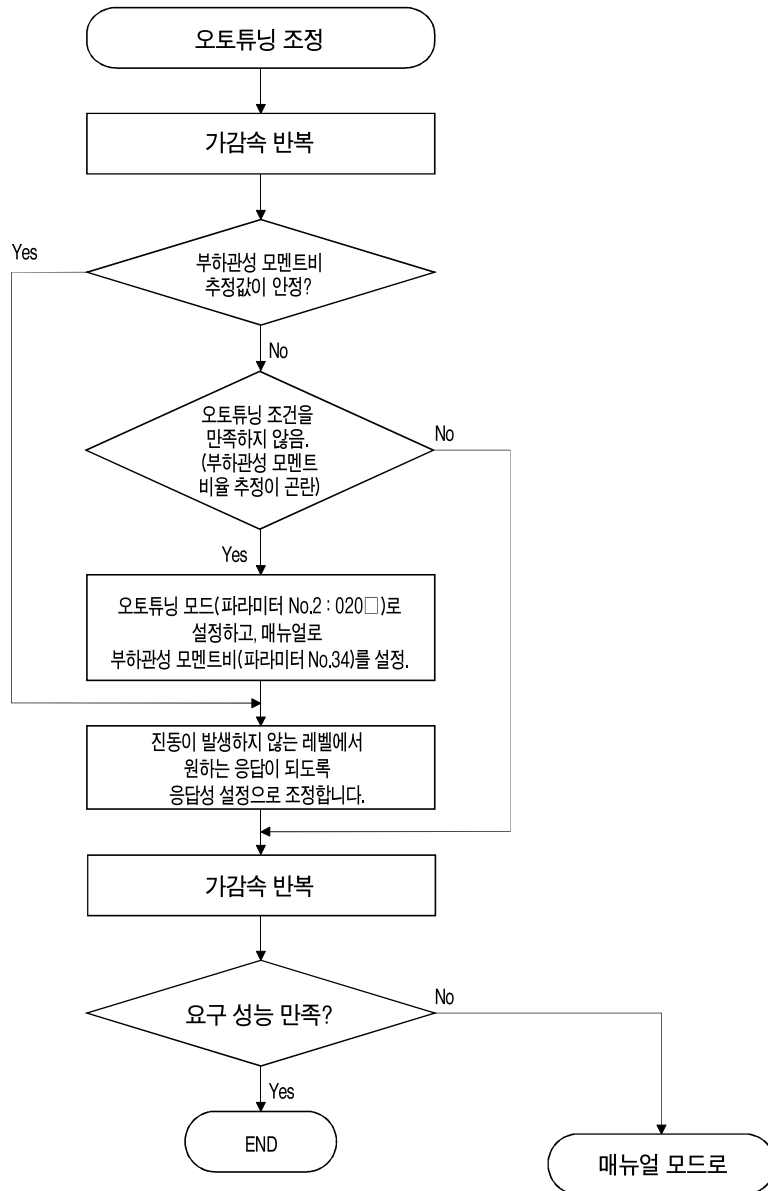
2" ( No.2: 2 ) , ( No.34 ) ( No.2 1 )

EEP - ROM 60 EEP - ROM



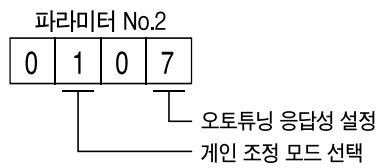
## 7.2.3

(1)



7.2.4

( No.2 1 )  
 100Hz ( No.66 ) ( No.58 - 59 )  
 8.1



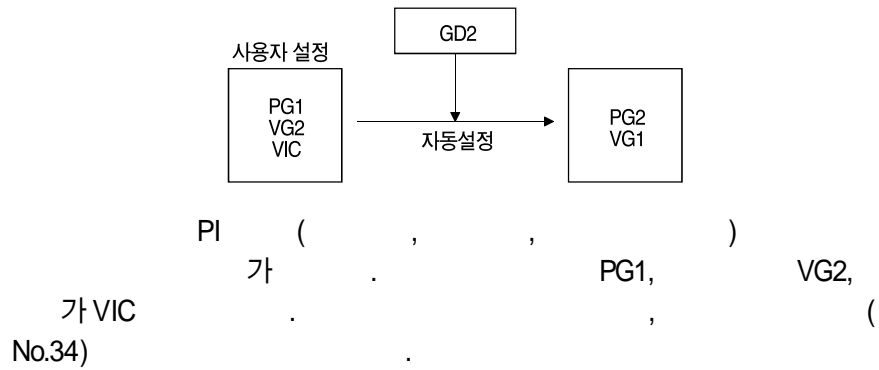
1		15Hz	
2		20Hz	
3		25Hz	
4		30Hz	
5		35Hz	
6		45Hz	
7		55Hz	
8		70Hz	
9		85Hz	
A		105Hz	
B		130Hz	
C		160Hz	
D		200Hz	
E		240Hz	
F		300Hz	

7.3 1 ( )

,3

7.3.1 1

1(PG1), 2(VG2), (VIC) 3



7.3.2 1

		( No.60 )	
	( No.58 · 59 ) ,		( 8.1 )

(1)

(a)

No.		
34	GD2	
37	VG2	2
38	VIC	

(b)

1	( No.34 )	
2	2( No.37 )	
3	( No.38 )	
4	가 , 2 · 3	8.2 · 8.3
5	( 修正 )	

(c)

2( No.37)

가

$$(Hz) = \frac{2}{(1+ ) \times 2}$$

(VIC: No.38)

가 , 가

(ms)

2000~3000

$$\frac{2}{(1+ ) \times 0.1}$$

(2)

(a)

No.		
6	PG1	1
34	GD2	
37	VG2	2
38	VIC	

(b)

1	( No.34)	
2	1( No.6)	
3	2( No.37)	
4	( No.38)	
5	1( No.6)	
6	가 , 3~5	8.1
7	(整正)	

(c)

1( No.6)

1

$$1 \frac{2}{(1+)} \times \left( \frac{1}{3} \sim \frac{1}{5} \right)$$

2( No.37)

가

$$(\text{Hz}) = \frac{2}{(1+)} \times 2$$

(VIC: No.38)

가

가  
가

(ms)

2000~3000

2 / (1+

× 0.1)





(3)

(a) 1( No.6)

1

가

$$(\text{pulse}) = \frac{(\text{r/min})}{60} \times 131072(\text{pulse})$$

(b) 1( No.36)

1

1

× 3

7. 5

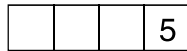
MELSERVO-J2

7.5.1

MELSERVO - J2 - Super

, MELSERVO - J2

파라미터 No.2



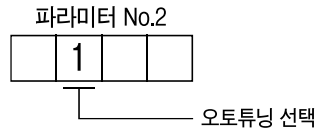
응답성 설정

MELSERVO-J2		MELSERVO-J2-Super	
		1	15Hz
1	20Hz	2	20Hz
		3	25Hz
		4	30Hz
		5	35Hz
2	40Hz	6	45Hz
		7	55Hz
3	60Hz	8	70Hz
4	80Hz	9	85Hz
5	100Hz	A	105Hz
		B	130Hz
		C	160Hz
		D	200Hz
		E	240Hz
		F	300Hz

7.5.2

MELSERVO - J2 - Super  
3

가  
1 가



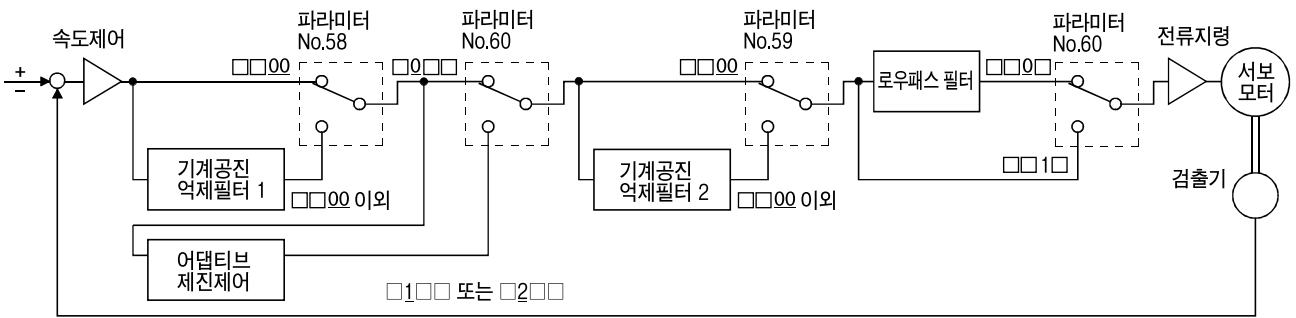
		MELSERVO-J2	MELSERVO-J2-Super	
		0	0	1
	1	1	1	
	2		2	
	1		3	
	2	2	4	

8



( ) 가 , , 가

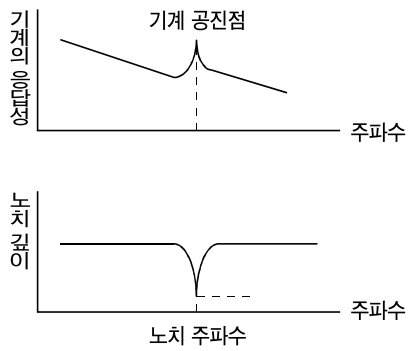
8. 1



8. 2

(1)

( ) . ( )





(2)

(a)

1( No.58)

1( No.58)

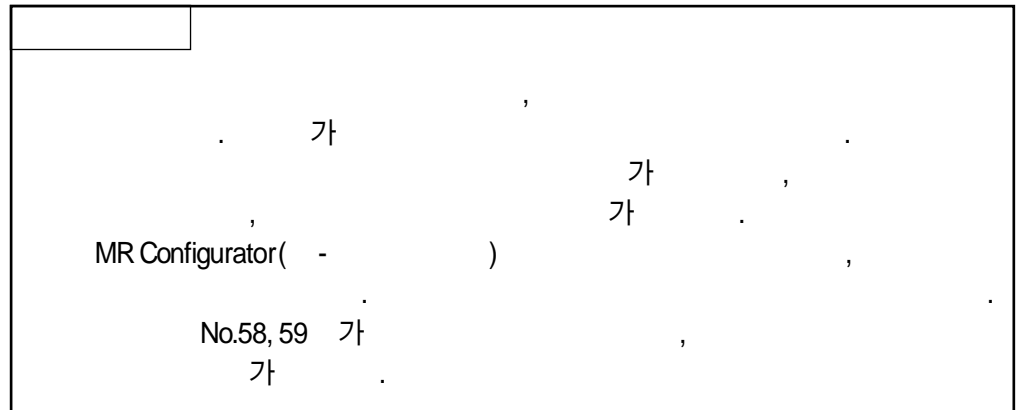
( No.60) “ ” “ ”

1 ( No.58 : 0000)

파라미터 No.58  
0

00		08	562.5	10	281.3	18	187.5
01	4500	09	500	11	264.7	19	180
02	2250	0A	450	12	250	1A	173.1
03	1500	0B	409.1	13	236.8	1B	166.7
04	1125	0C	375	14	225	1C	160.1
05	900	0D	346.2	15	214.3	1D	155.2
06	750	0E	321.4	16	204.5	1E	150
07	642.9	0F	300	17	195.7	1F	145.2

	( )
0	( - 40dB)
1	( - 14dB)
2	( - 8dB)
3	( - 4dB)



(b)

2( No.59)

2( No.59)

1(

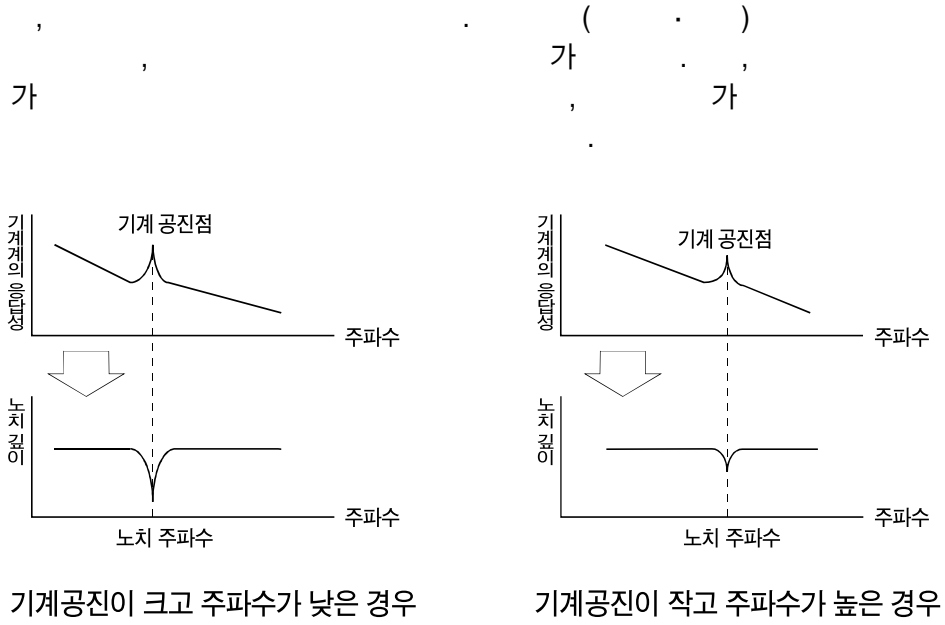
No.58)

2

8. 3

(1)

가



가 가 , 150~500Hz .

가 .

가 .

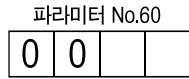
가 가

가 가

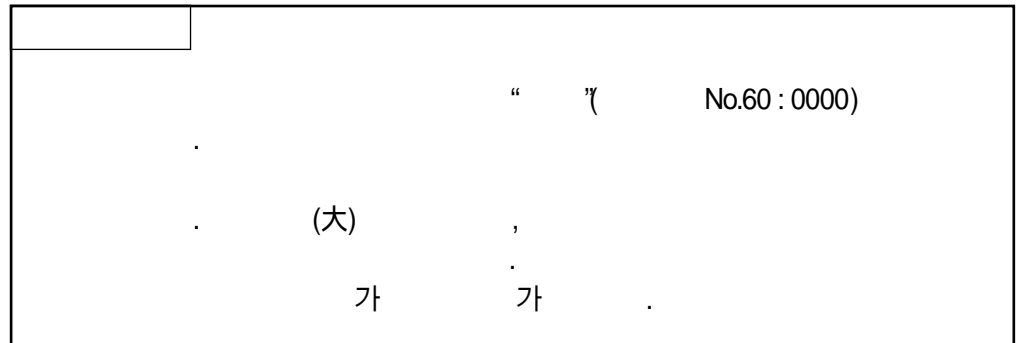
가 ( No.60: 2 ) ,

(2)

( No.60)



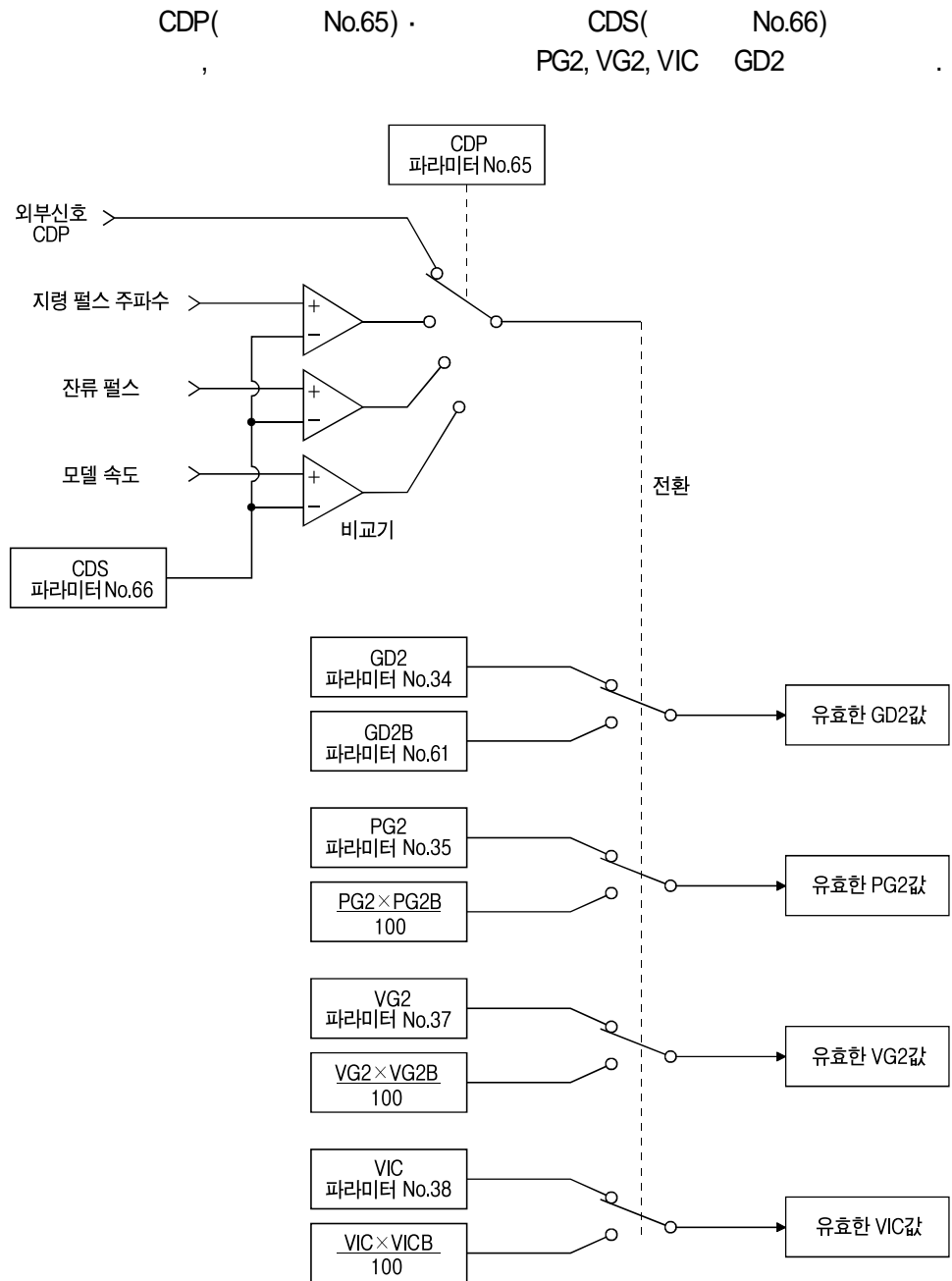
- 어댑티브 제진제어 선택  
어댑티브 제진제어 선택으로 "유효" 또는 "보존"을 선택하면,  
기계 공진제어 필터1(파라미터 No.58)은 무효가 됩니다.
- 0 : 무효
- 1 : 유효  
항시, 기계공진 주파수를 검출하고, 공진에 따라 필터를 생성하며,  
기계 진동의 억제를 합니다.
- 2 : 보존  
그때까지 생성된 필터의 특성을 보존한 그대로 기계 공진의  
검출을 정지합니다.
- 어댑티브 제진제어 감도 선택  
기계 공진을 검출하는 감도를 설정합니다.
- 0 : 통상
- 1 : 감도 높을 때(大)







8.5.2



8.5.3

No.2( ) “ 4 ”

No.				
6	PG1	1	rad/s	
36	VG1	1	rad/s	
34	GD2		0.1	
35	PG2	2	rad/s	
37	VG2	2	rad/s	
38	VIC		ms	
61	GD2B	2	0.1	
62	PG2B	2	%	2 2 (%)
63	VG2B	2	%	2 2 (%)
64	VICB		%	(%)
65	CDP			
66	CDS		kpps pulse r/min	
67	CDT		ms	

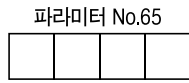
(1) No.6 · 34~38

2 · 2

(2) 2( No.61) 가  
( No.34)

(3) 2 ( No.62), 2 ( No.63), ( No.64) (%)  
 100% 가  
 $2 = 100,$   $2 = 2000,$   $= 20$   
 $2 = 180\%,$   $2 = 150\%,$   
 $= 80\%$   
 $2$   
 $= 2 \times 2 / 100 = 180\text{rad/s}$   
 $2$   
 $= 2 \times 2 / 100 = 3000\text{rad/s}$   
 $= \times / 100 = 16\text{ms}$

(4) ( No.65)  
 .1  
 “ 1 ” , (CDP)  
 (CDP) No.43~48 가



게인 전환 선택  
 다음 타이밍으로 파라미터 No.61~64의 설정에 의거하여  
 게인이 전환됩니다.  
 0 : 무효  
 1 : 게인 전환(CDP) 신호가 ON  
 2 : 지령 주파수가 파라미터 No.66의 설정값 이상  
 3 : 잔류 펄스가 파라미터 No.66의 설정값 이상  
 4 : 서보모터 회전속도가 파라미터 No.66의 설정값 이상

(5) ( No.66)  
 ( No.66) “ ” ” ” ”  
 , .

	kpps
	pulse
	r/min

(6) ( No.67)  
 1  
 가 , .

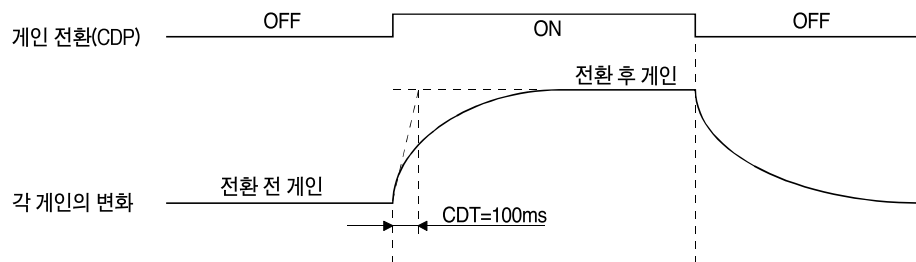
8.5.4

(1)

(a)

No.				
6	PG1	1	100	rad/s
36	VG1	1	1000	rad/s
34	GD2		40	0.1
35	PG2	2	120	rad/s
37	VG2	2	3000	rad/s
38	VIC		20	ms
61	GD2B	2	100	0.1
62	PG2B	2	70	%
63	VG2B	2	133	%
64	VICB		250	%
65	CDP		0001 (CN 1 A - 8 ON/OFF )	
67	CDT		100	ms

(b)



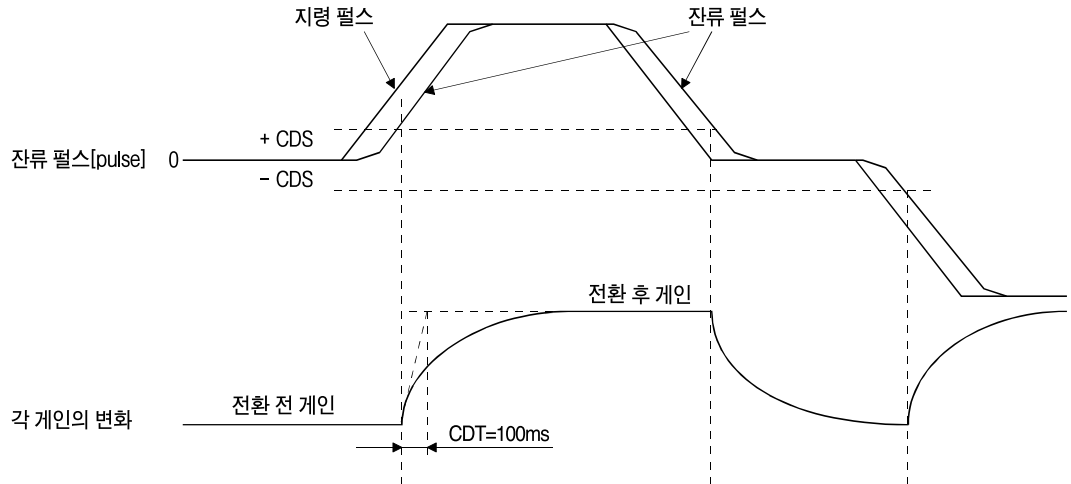
1		100	
1		1000	
	4.0	10.0	4.0
2	120	84	120
2	3000	4000	3000
	20	50	20

(2)

(a)

No.				
6	PG1	1	100	rad/s
36	VG1	1	1000	rad/s
34	GD2		40	0.1
35	PG2	2	120	rad/s
37	VG2	2	3000	rad/s
38	VIC		20	ms
61	GD2B		100	0.1
62	PG2B	2	70	%
63	VG2B	2	133	%
64	VICB		250	%
65	CDP		0001 (CN 1 A - 8 ON/OFF )	
66	CDS		50	pulse
67	CDT		100	ms

(b)



1			100	
1			1000	
	4.0	10.0	4.0	10.0
2	120	84	120	84
2	3000	4000	3000	4000
	20	50	20	50



9

<p>⚠ 위험</p>	<p>가 , OFF , 15                  가 , P-N                  :                  :</p> <p style="text-align: right;">( )</p>
-------------	--

	<p>가 ( )</p>
--	--------------

(1)

- (a) 가 ?
- (b) ? ,가

(2)

가 ( )

	10
	10
	1~3 (2~3 )
	15.2

(a)

10

(b)

10 가

(c)

1~3

2~3

가





10

10. 1

주의

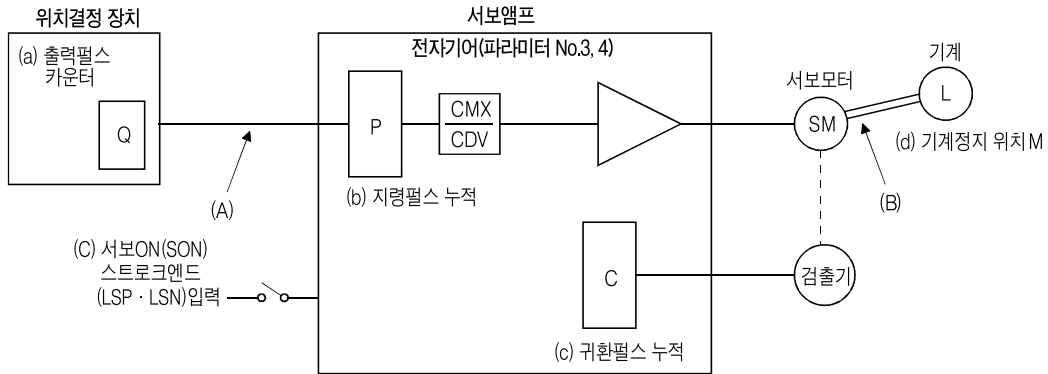
MR Configurator(                    )                    ,                    가

10.1.1

(1)

No.					
1		<ul style="list-style-type: none"> <li>· LED가</li> <li>· LED가</li> </ul>	CN1A · CN1B · CN2 · CN3	<ul style="list-style-type: none"> <li>1.</li> <li>2.</li> </ul>	/
			CN1A · CN1B	CN1	
			CN2	<ul style="list-style-type: none"> <li>1.</li> <li>2.</li> </ul>	
			CN3	CN3	
			10.2		10.2
2	ON(SON) ON	(                    )	10.2		10.2
			<ul style="list-style-type: none"> <li>1.</li> <li>2. ON(SON) 가ON</li> </ul>	<ul style="list-style-type: none"> <li>1. ON 가 (                    )</li> <li>2.COM DC24V</li> </ul>	6.6
3	(                    )	가		<ul style="list-style-type: none"> <li>1. (a)                    , OPC DC24V가</li> <li>(b) LSP - SG , LSN - SG</li> <li>2. 가</li> </ul>	6.2
		가		<ul style="list-style-type: none"> <li>1.</li> <li>2. No.54</li> </ul>	5
4		)                    (                    )	<ul style="list-style-type: none"> <li>1.                   </li> <li>2.가                    3,4                    ,</li> </ul>		7
		가                    ,                    가                    가	<ul style="list-style-type: none"> <li>3,4                    가                    가</li> </ul>		7
5					(2)

(2)



(d) (a) (b) (c)

(A)(B)(C) 가 (A)

$$Q = P \left( \frac{CMX(No.3)}{CDV(No.4)} \times C \right) = M$$

Q P 가 (A)

$$P \cdot \frac{CMX}{CDV} \cdot C = M$$

ON (SON), (LSP·LSN) OFF  
 (CR), (RES) ON (C)  
 가 가 , (No.1)

Cx M , (B)

10.1.2

1		· LED가 · LED가	CN1A · CN1B · CN2 · CN3	1. 2.	
			CN1A · CN1B	CN1	
			CN2	1. 2.	
			CN3	CN3	
			10.2		10.2
2	ON(SON) ON	( )	10.2		10.2
			1. 2. ON(SON) 가 ON	1. ON 가 ( ) 2.COM DC24V	6.6
3	(ST1) (ST2) ON	가	(VC)	0V	6.2
			ON/OFF	LSP · LSN · ST1 · ST2가 OFF	6.6
			1~7( No.8~10 · 72~75)	0	5.1.2 (1)
			1( No.28)		
		가 (TLA)가 가			
4		) (	1. 2.가 3,4		7
			가 , 3,4 가 가		7

10.1.3

1		· LED가 · LED가	CN1A · CN1B · CN2 · CN3	1. 2.	
			CN1A · CN1B	CN1	
			CN2	1. 2.	
			CN3	CN3	
			10.2		10.2
2	ON(SON) ON		10.2		10.2
			ON/OFF	1. ON 가 ( ) 2. COM DC24V	6.6
3	(RS1)  (RS2) ON	가	(TC)	0V	6.2
			ON/OFF	RS1 · RS2가 OFF	6.6
			1~7( No.8~10,72~75)	0	5.1.2 (1)
			( No.26)		
1( No.28)	0				

10.2 가

	(ALM)	ON(SON) OFF

10.2.1

가  
 , 10.2.2 , 10.2.3  
 ALM - SG  
 No.49 “ 1 ”  
 SG ON/OFF (AL.92~AL.EA)  
 (CN1B - 19 : ZSP, CN1A - 18 : INP SA, CN1A - 19 : RD)

\*

		( 2 )				OFF ON	"SET"	(RES)
		CN1B 19	CN1A 18	CN1A 19				
AL.10	0	1	0					
AL.12	0	0	0	1				
AL.13	0	0	0					
AL.15	0	0	0	2				
AL.16	1	1	0	1				
AL.17	0	0	0					
AL.19	0	0	0	3				
AL.1A	1	1	0					
AL.20	1	1	0	2				
AL.24	1	0	0					
AL.25	1	1	0					
AL.30	0	0	1		( 1 )	( 1 )	( 1 )	
AL.31	1	0	1					
AL.32	1	0	0					
AL.33	0	0	1					
AL.35	1	0	1					
AL.37	0	0	0					
AL.45	0	1	1		( 1 )	( 1 )	( 1 )	
AL.46	0	1	1		( 1 )	( 1 )	( 1 )	
AL.50	0	1	1	1	( 1 )	( 1 )	( 1 )	
AL.51	0	1	1	2	( 1 )	( 1 )	( 1 )	
AL.52	1	0	1					
AL.8A	0	0	0					
AL.8E	0	0	0					
88888	0	0	0					
AL.92	/							
AL.96								
AL.9F								
AL.E0								
AL.E1								
AL.E3								
AL.E5				ABS				
AL.E6								
AL.E9				OFF				
AL.EA				ABS ON				

( ) 1. , 30  
 2. 0 : OFF  
 1 : ON

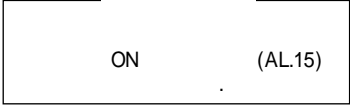
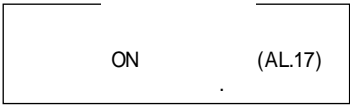
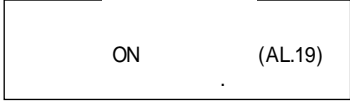
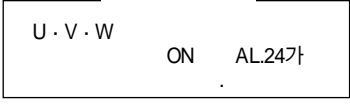
10.2.2

⚠ 주의 (AL.25) ON(SON) OFF

OFF ON  
 , 30  
 (AL.30)  
 1(AL.50)  
 2(AL.51)  
 OFF ON, " SET "  
 (RES) ON 10.2.1

(ALM)가 OFF 가  
 No. MR Configurator( )

AL.10		MR - J2S - A : 160V MR - J2S - A1 : 83V	1.	
			2. 60ms	
			3.	
			4. DC200V OFF 5s ON ( )	
			5. ON (AL.10)	
AL.12	1	RAM		
AL.13			ON 가) (AL.12	



AL.15	2	EEP-ROM	1.  2. EEPROM      가 10	
AL.16	1		1.      (CN2)가 2. 3. (      )	
AL.17		CPU  U · V · W U · V · W가	1.  2. U · V · W      ,      U · V · W U · V · W	
AL.19	3	ROM		
AL.1A				
AL.20	2	가	1.      (CN2)가 2. 3. (      .) 4.      가      1.      2 2.      .	
AL.24		(U · V · W)	1.      (TE1) 2. 3.      가 	



AL.25			1.	2~3 가
			2.	
			3.	
			4. 가	2~3 가
AL.30			1. No.0	
			2.	
			3.	1. 2. 3.
			4. MR - J2S - A : 260V MR - J2S - A1 : 135V	
			5.	
			6. 가	
AL.31		가	1. 가	
			2.가 가 가	가
			3. 가	1. 2.  가
			4. ( No.3, 4)	
			5.	

AL.32		(AL.32)가 OFF/ON (AL.32) (IPM·IGBT)가 OFF/ON 2. .)	1. U·V·W	
			2. (IPM)  <div style="border: 1px solid black; padding: 5px; display: inline-block;">                     U·V·W (AL.32)가 ON                 </div>	
			3. U·V·W	
			4. 가	
		가 (MR-J2S-500A )	5.	
AL.33		400V 가	1.	
			2. No. 00 ( )가	
			3.	1. 2.
			4. 가	
			5.	1. 2.
			6.	가
			7.	
			8. U·V·W가	
			9. FR-BU2 BUE-SD	BUE-SD
AL.35		가	1. 가	
			2. 가	
			3.	

AL.37			1.		
			2.	No.0	No.0
			3.	EEP - ROM 가 10	
			4.	( 49)	
			5.	CN1B - 19 (interlock)(MBR) No.49)	CN1B - 19 (interlock)(MBR)
AL.45		가	1.		
			2.	ON/OFF	
			3.		1. 2.
AL.46		가 가	1.	가 40	가 0~40 가
			2.	가 가	1. 2. 3.
			3.	가	

AL50	1	300% : 2.5s 200% : 100s	1. 가	1. 2. 3.
			2. 가	1.가 2. 3. OFF
			3.	1. 2.
			4. U·V·W U·V·W가	
			5. 	
AL51	2	: 1s 가	1.	1. 2.
			2. U·V·W U·V·W가	
			3. 가	1.가 2. 3. OFF
			4. 	

AL.52	( )	가2.5 (1.2 )	1.가 가 .	가
			2. ( No.28)	
			3.	1. 2.
			4. 1( No.6)	
			5.	1. 2. 3.
			6.	1. 2.
			7.	
			8. U·V·W U·V·W가	
AL.8A		RS-232C RS422 No.56	1.	
			2. No.56 가	
			3.	
AL.8E		(PC )	1. ( .)	
			2. (PC )	(PC )
88888		CPU .	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">                 CN1A · CN1B CN3 ON (88888)             </div>	

. 2.5

B0

B0

( )가 10

10.2.3

**⚠ 주의** (AL.E3)가

가 OFF/ON  
 OFF/ON ,30  
 • (AL.E0)  
 • (AL.E1)

(AL.E6) ABS ON (AL.EA)가 OFF 가

MR Configurator( - )

가

AL.92			1. 2. 2.8V	
AL.96			1. 가 2. , 가 3. 가	
AL.9F			3.2V	
AL.E0		가	85%가 <input type="text"/>	1. 2. 3.
AL.E1		1.2가 가	1.2 85% 가 <input type="text"/> AL.50, AL.51	AL.50 · AL.51
AL.E3		(多)	1. 가 2. 3. 32767 -32768	
AL.E5	ABS		1. 2. (ST2) · (TLC)	

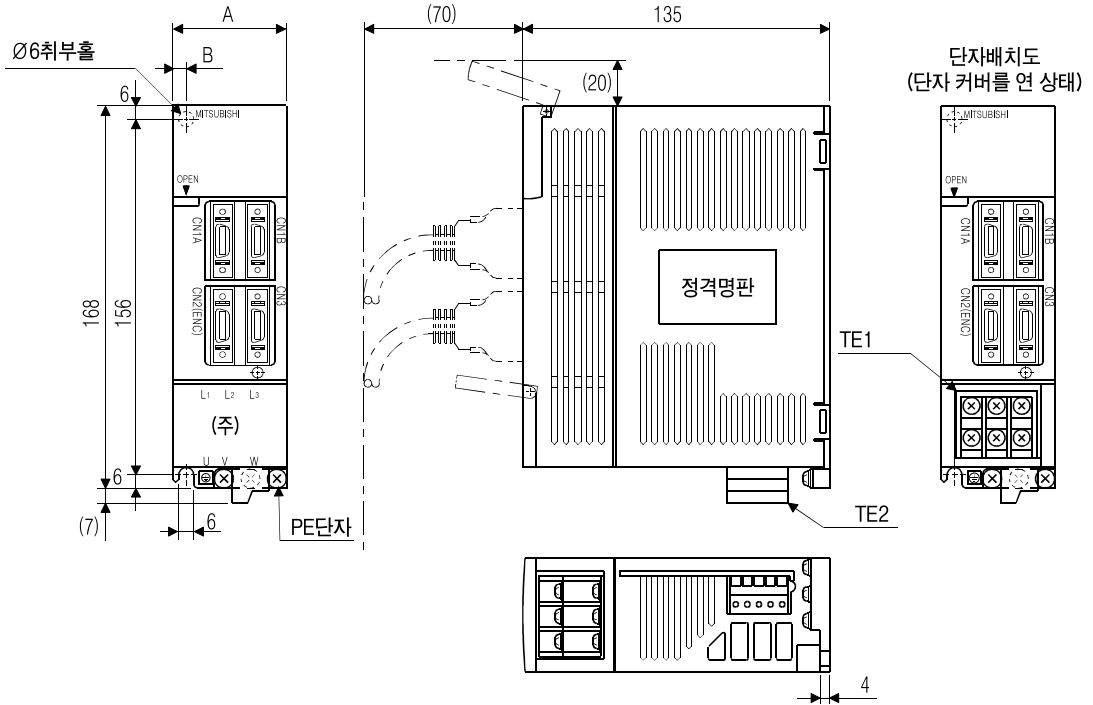
ALE6		EMG - SG	가 (EMG - SG .)	
ALE9	OFF	ON OFF (SON) ON		ON
ALEA	ABS ON	1s ON	가 ON (SON)	1.
				2. ON(SON)

11

11. 1

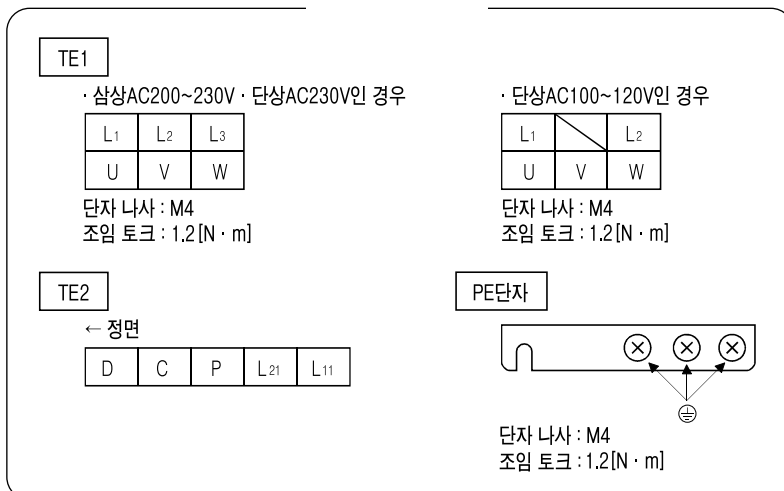
(1) MR-J2S-10A ~ MR-J2S-60A  
MR-J2S-10A1 ~ MR-J2S-40A1

[ :mm]



서보앰프	변환치수		질량 [kg]
	A	B	
MR-J2S-10A(1)	50	6	0.7
MR-J2S-20A(1)			
MR-J2S-40A(1)	70	22	1.1
MR-J2S-60A			

(주) 삼상AC200~230V · 단상AC230V전원인 경우입니다.

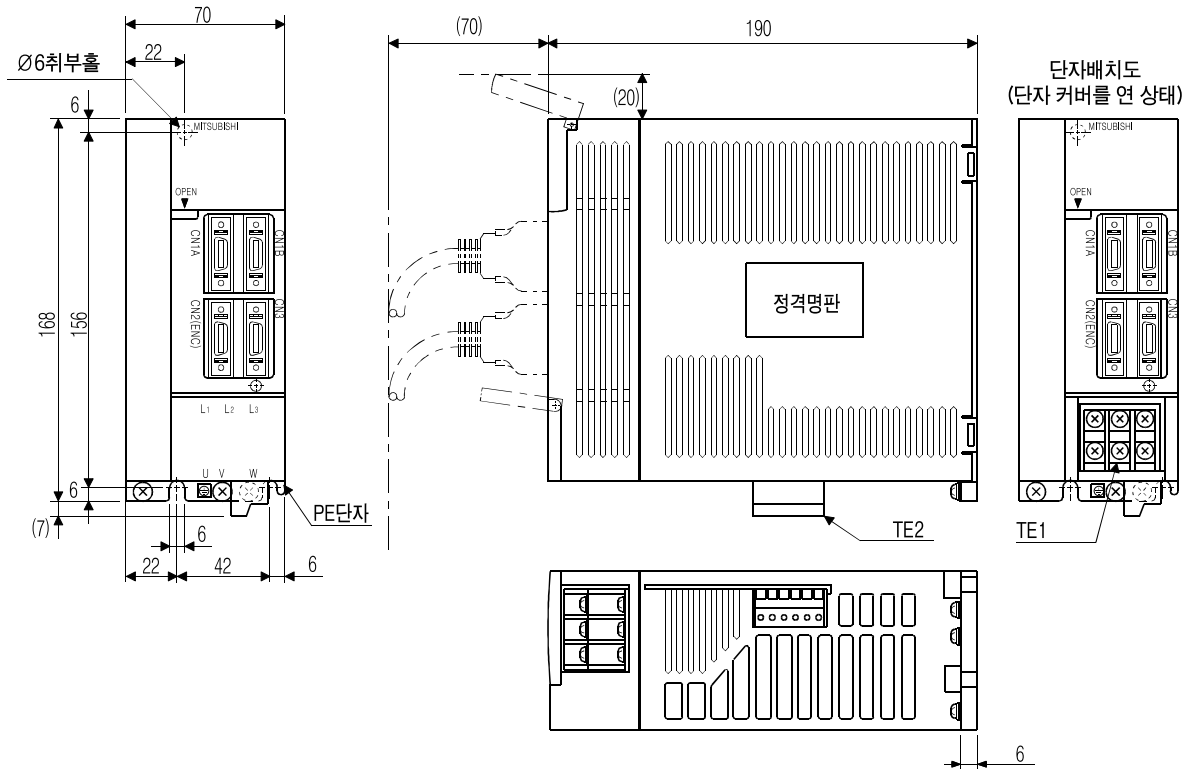


: M5  
: 3.24[N · m]

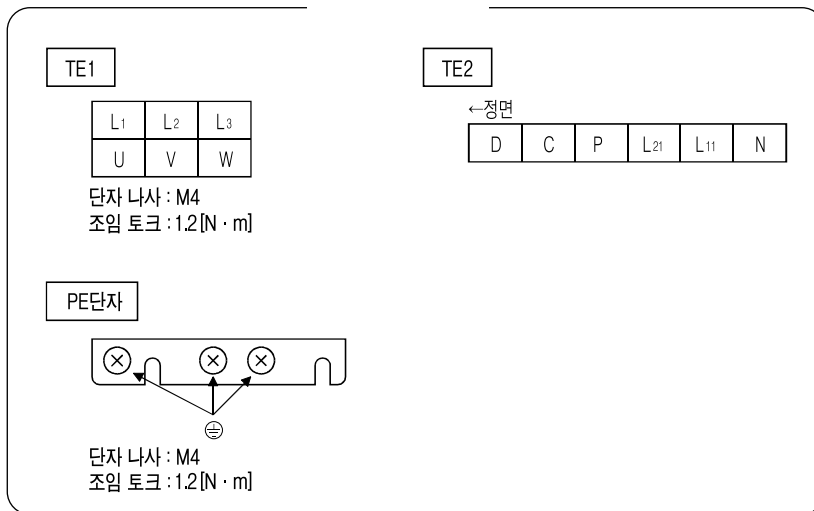


(2) MR-J2S-70A · MR-J2S-100A

[ : mm]



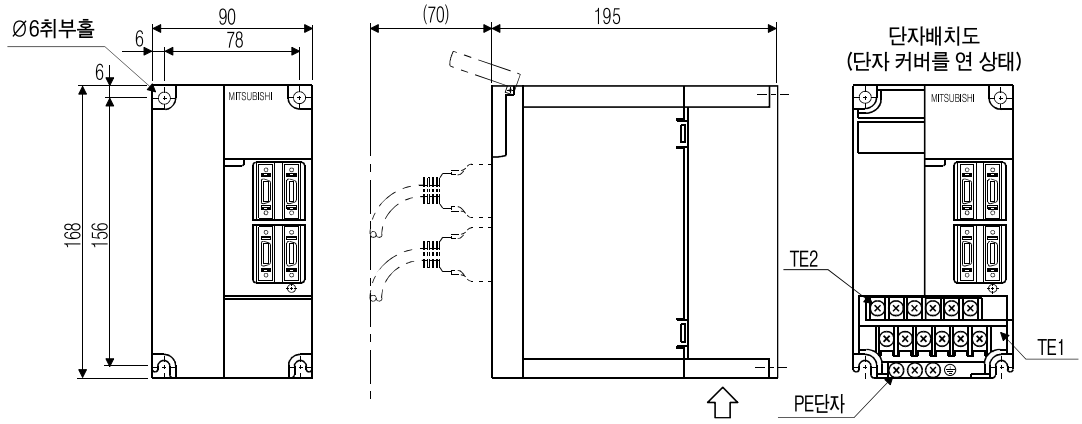
서보앰프	질량 [kg]
MR-J2S-70A	1.7
MR-J2S-100A	



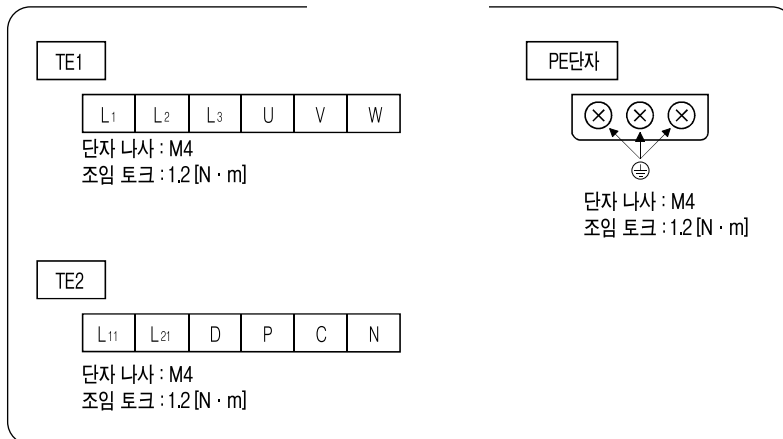
: M5  
: 3.24 [N · m]

(3) MR-J2S-200A · MR-J2S-350A

[ : mm]



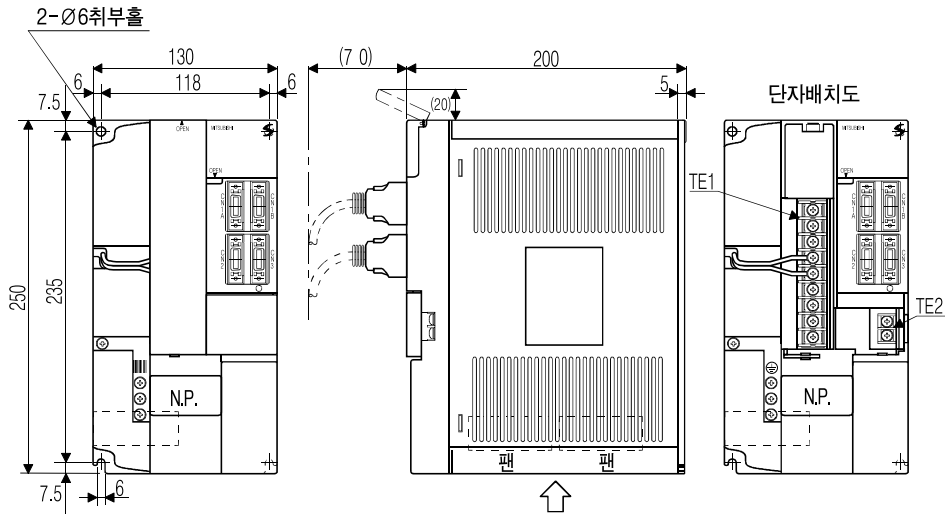
서보앰프	질량 [kg]
MR-J2S-200A	2.0
MR-J2S-350A	



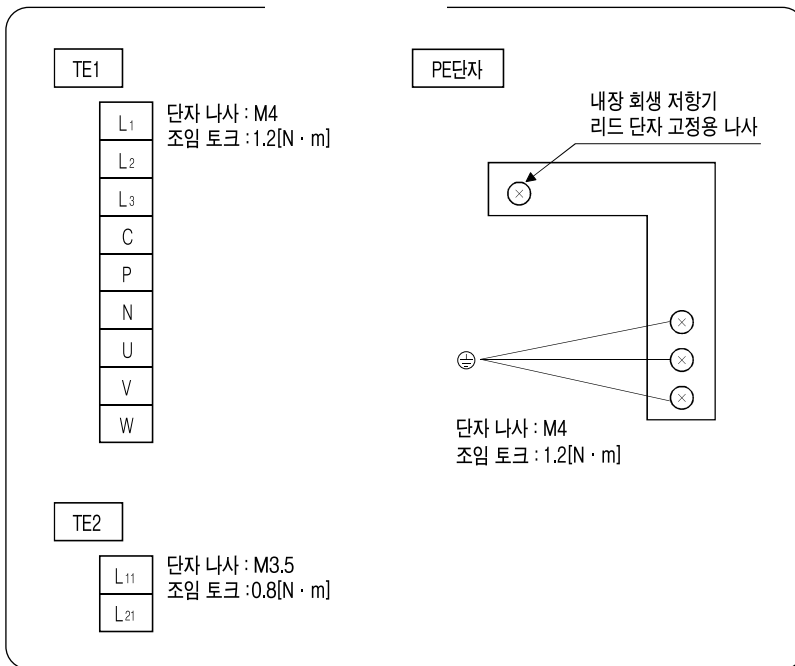
: M5  
: 3.24[N · m]

(4) MR-J2S-500A

[ : mm]

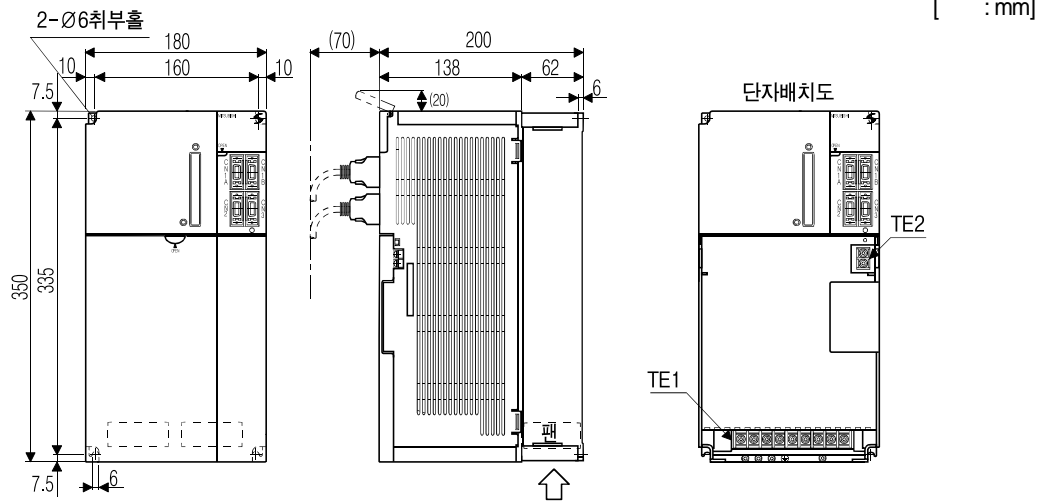


서보앰프	질량 [kg]
MR-J2S-500A	4.9

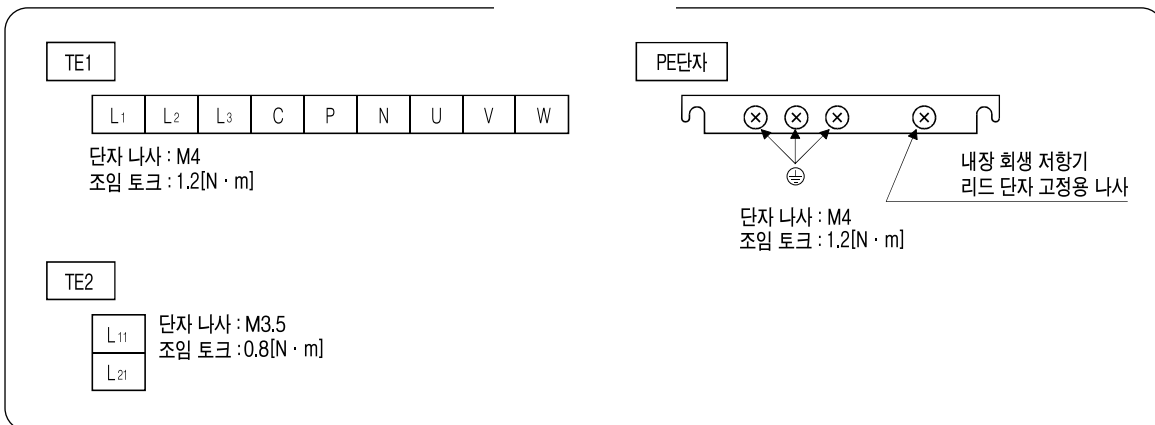


: M5  
: 3.24[N·m]

(5) MR-J2S-700A



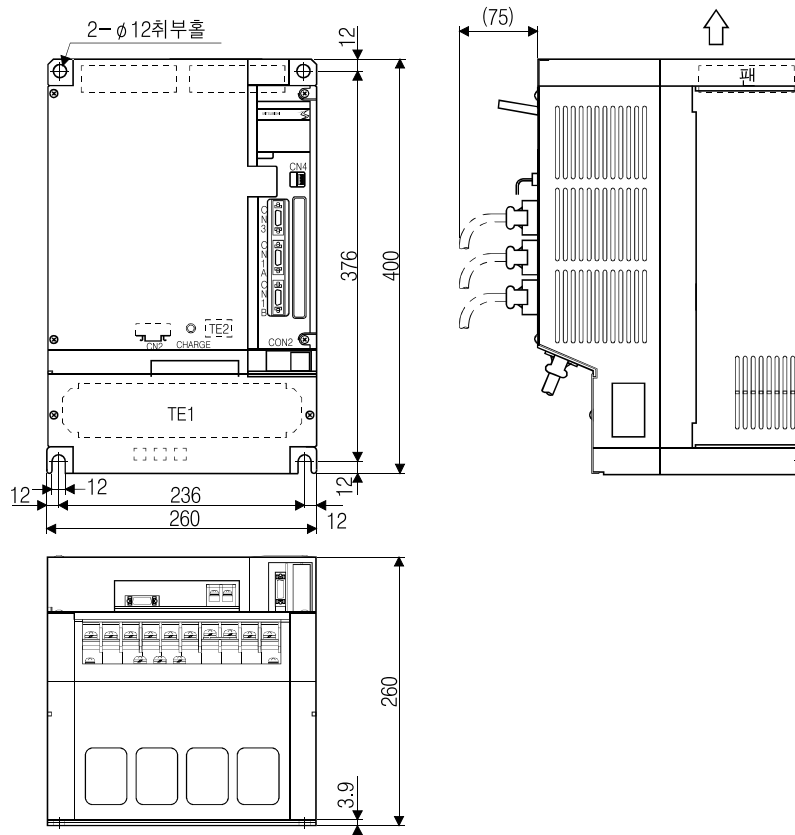
서보앰프	질량 [kg]
MR-J2S-700A	7.2



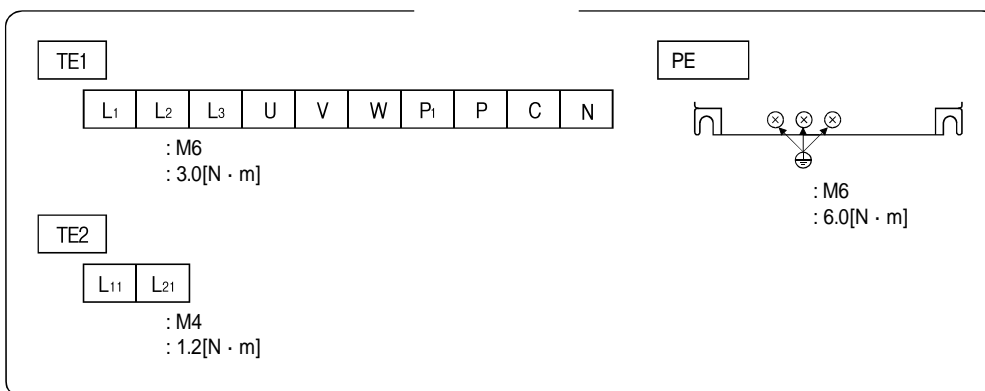
M5 :  
3.24[N·m]

(6) MR-J2S-11KA · 15KA

[ : mm]



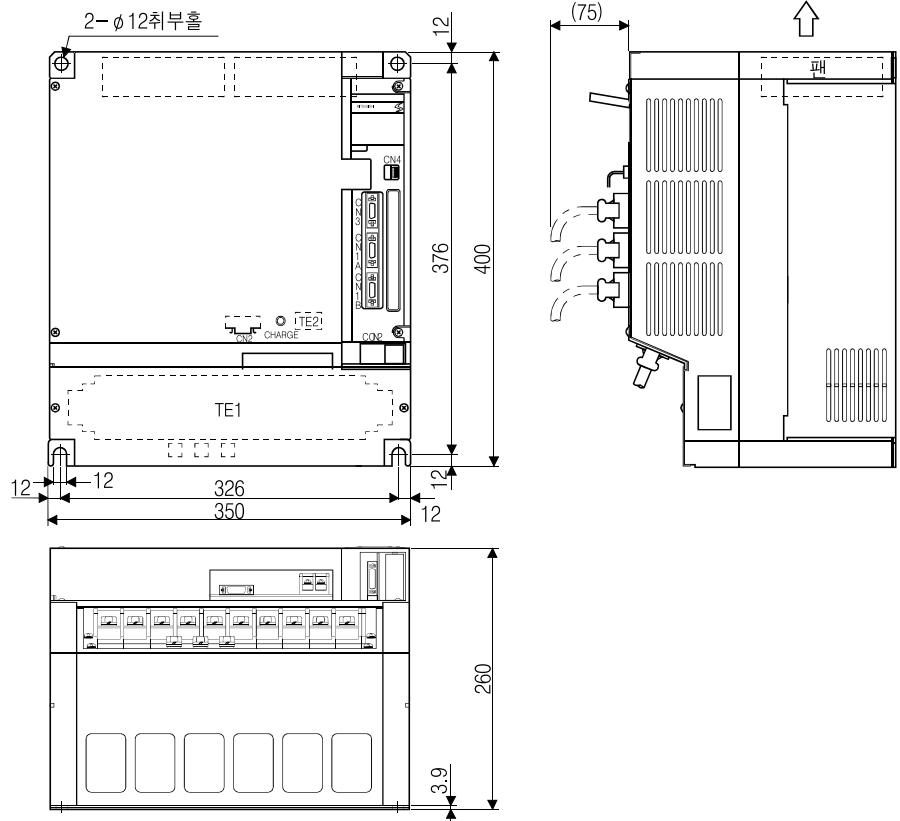
	[kg]
MR - J2S - 11KA	15
MR - J2S - 15KA	16



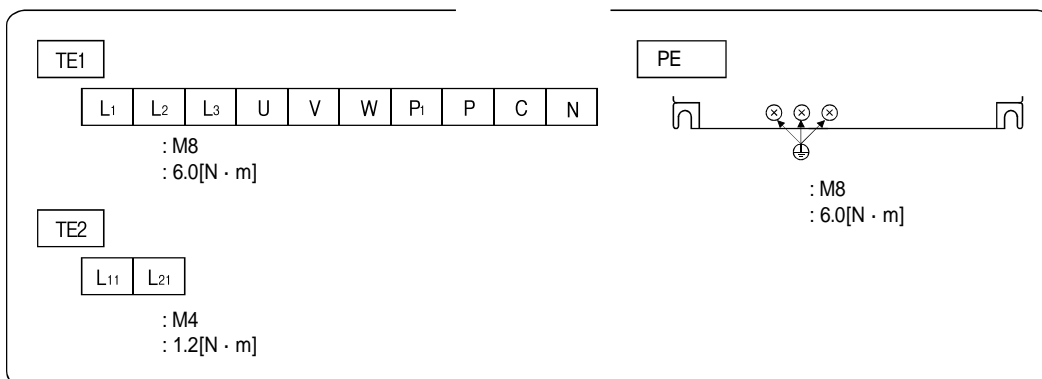
: M10  
: 26.5[N · m]

(7) MR-J2S-22KA

[ : mm]



	[kg]
MR - J2S - 22KA	20



: M10  
: 26.5[N · m]

12. 2

(1)

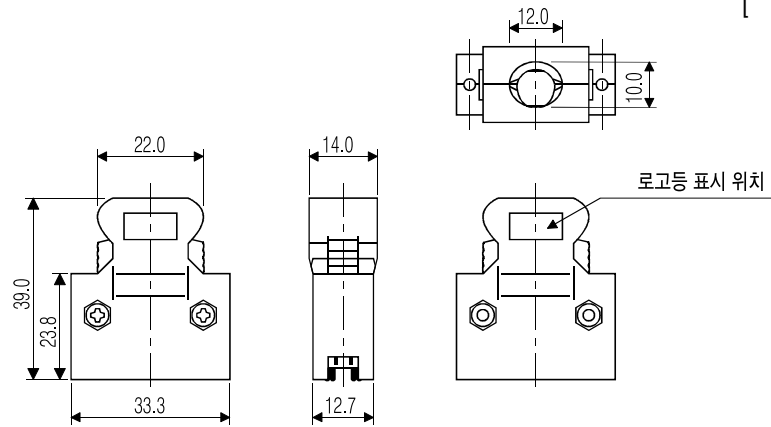
<3M>

(a)

: 10120 - 3000VE

: 10320 - 52F0 - 008

[ :mm]



		A	B
10120 - 3000VE	10320 - 52F0 - 008	22.0	33.3

(b)

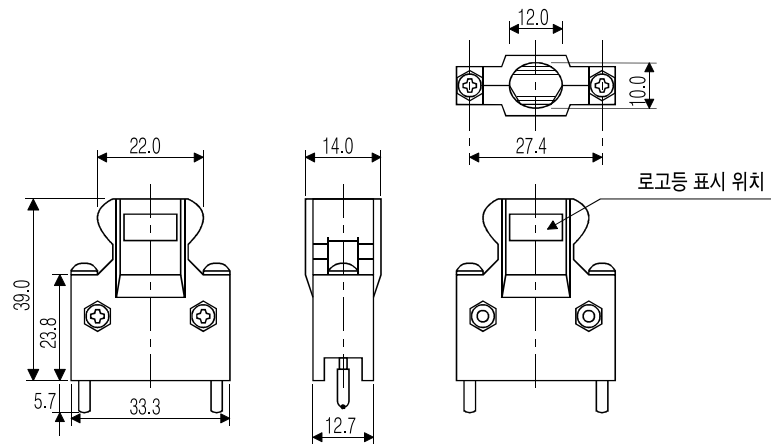
: 10120 - 3000VE

: 10320 - 52A0 - 008

( )

가

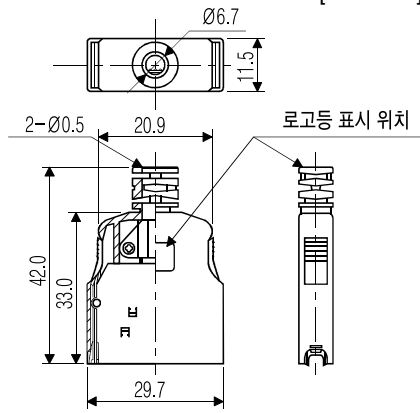
[ :mm]



(c)

: 10120 - 6000EL  
 : 10320 - 3210 - 000

[ : mm]

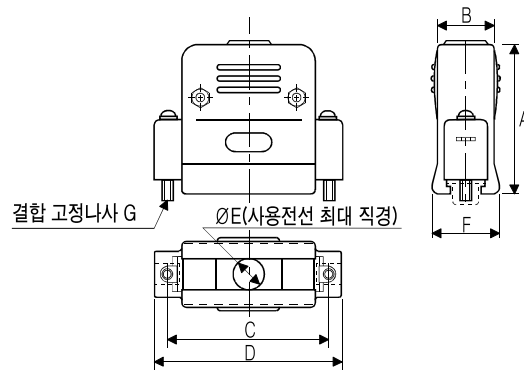


(2)

<

>

[ : mm]



형명	A ±1	B ±1	C ±0.25	D ±1	ØE	F 참고	G
DE-C1-J6-S6	34.5	19	24.99	33	6	18	#4-40





12

12. 1

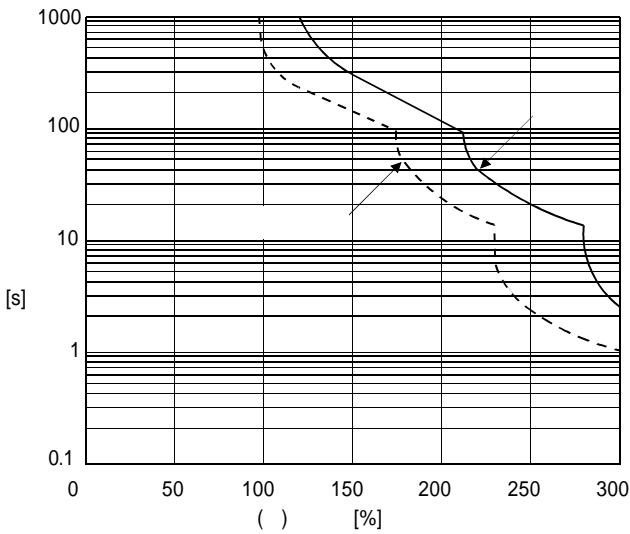
12.1  
(AL.50),

가 , 2 (AL.51)

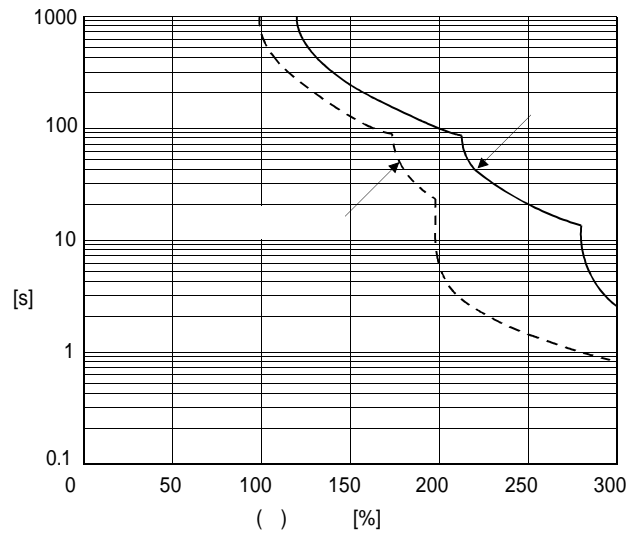
70%

가

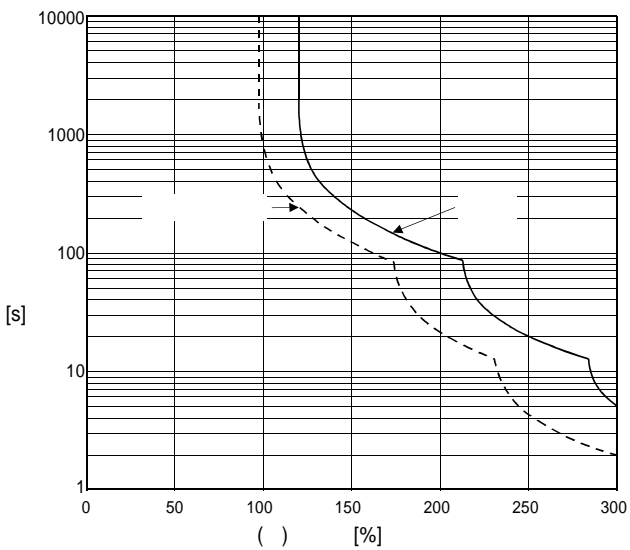
가



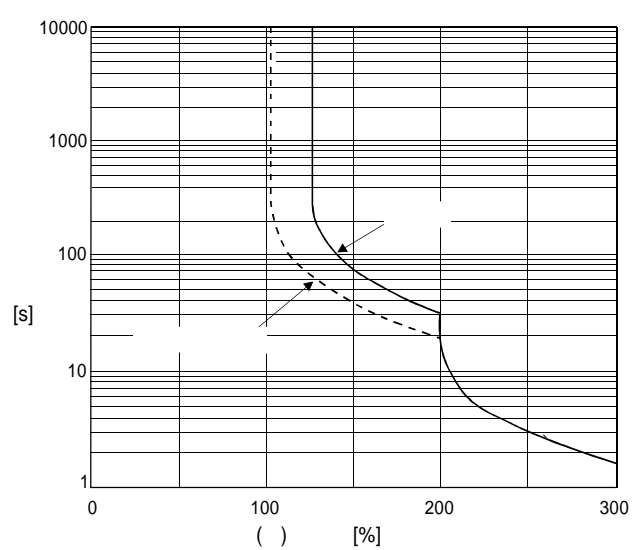
a. MR-J2S-10A~MR-J2S-100A



b. MR-J2S-200A~MR-J2S-350A



c. MR-J2S-500A~MR-J2S-700A



d. MR-J2S-11KA~MR-J2S-22KA

( ) , 30 r/min  
가 가

100%

## 12. 2

(1)

12.1

OFF

12.1

1

		( 1 ) [kVA]	( 2 )		[m <sup>3</sup> ]
				[w] OFF	
MR - J2S - 10A(1)	HC - KFS053 · 13	0.3	25	15	0.5
	HC - MFS053 · 13	0.3	25	15	0.5
MR - J2S - 20A(1)	HC - UFS13	0.3	25	15	0.5
	HC - KFS23	0.5	25	15	0.5
	HC - MFS23	0.5	25	15	0.5
MR - J2S - 40A(1)	HC - UFS23	0.5	25	15	0.5
	HC - KFS43	0.9	35	15	0.7
	HC - MFS43	0.9	35	15	0.7
MR - J2S - 60A	HC - UFS43	0.9	35	15	0.7
	HC - SFS52	1.0	40	15	0.8
	HC - SFS53	1.0	40	15	0.8
MR - J2S - 70A	HC - LFS52	1.0	40	15	0.8
	HC - KFS73	1.3	50	15	1.0
	HC - MFS73	1.3	50	15	1.0
MR - J2S - 100A	HC - UFS72 · 73	1.3	50	15	1.0
	HC - SFS81	1.5	50	15	1.0
	HC - SFS102 · 103	1.7	50	15	1.0
MR - J2S - 200A	HC - LFS102	1.7	50	15	1.0
	HC - SFS121	2.1	90	20	1.8
	HC - SFS201	3.5	90	20	1.8
	HC - SFS152 · 153	2.5	90	20	1.8
	HC - SFS202 · 203	3.5	90	20	1.8
	HC - RFS103	1.8	50	15	1.0
	HC - RFS153	2.5	90	20	1.8
	HC - UFS152	2.5	90	20	1.8
MR - J2S - 350A	HC - LFS152	2.5	90	20	1.8
	HC - SFS301	4.8	120	20	2.7
	HC - SFS352 · 353	5.5	130	20	2.7
	HC - RFS203	3.5	90	20	1.8
	HC - UFS202	3.5	90	20	1.8
MR - J2S - 500A	HC - LFS202	3.5	90	20	1.8
	HC - SFS502	7.5	195	25	3.9
	HC - RFS353	5.5	135	25	2.7
	HC - RFS503	7.5	195	25	3.9
	HC - UFS352	5.5	195	25	3.9
	HC - UFS502	7.5	195	25	3.9
	HC - LFS302	4.5	120	25	2.4
	HA - LFS502	7.5	195	25	3.9

		( 1 ) [kVA]	( 2 )		[m <sup>3</sup> ]
				[w] OFF	
MR - J2S - 700A	HC - SFS702	10.0	300	25	6.0
	HA - LFS702	10.6	300	25	6.0
MR - J2S - 11KA	HA - LFS11K2	16.0	530	45	11.0
	HA - LFS801	12.0	390	45	7.8
	HA - LFS12K1	18.0	580	45	11.6
	HA - LFS11K1M	16.0	530	45	11.0
MR - J2S - 15KA	HA - LFS15K2	22.0	640	45	13.0
	HA - LFS15K1	22.0	640	45	13.0
	HA - LFS15K1M	22.0	640	45	13.0
MR - J2S - 22KA	HA - LFS22K2	33.0	850	55	17.0
	HA - LFS20K1	30.1	775	55	15.5
	HA - LFS25K1	37.6	970	55	19.4
	HA - LFS22K1M	33.0	850	55	17.0

) 1.

2.

13.1.1

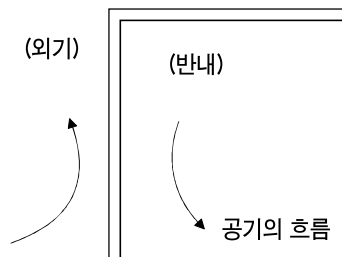
(2)

가 40  
 +10 가 ( ) ,  
 5 ) . ( 가 55  
 (12.1) .

$$A = \frac{P}{K \cdot T} \dots\dots\dots (12.1)$$

- A : [m<sup>2</sup>]
- P : [W]
- T : [ ]
- K : [5~6]

(12.1) P  
 12.1 . A  
 , ,  
 .  
 (對流)가  
 가 ,  
 . 12.1 40  
 ( ) .

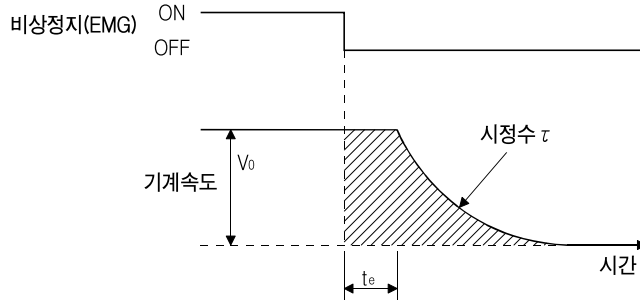


12.2

가 . 가 가

12. 3

(12.2) 13.3  
 (. ( 12.4 ) )

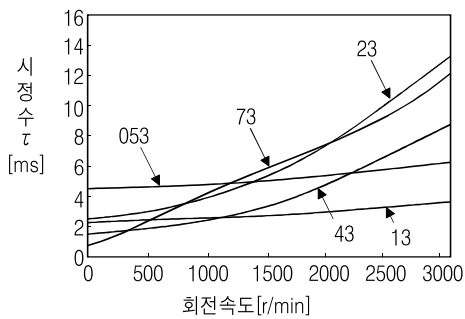


12.3

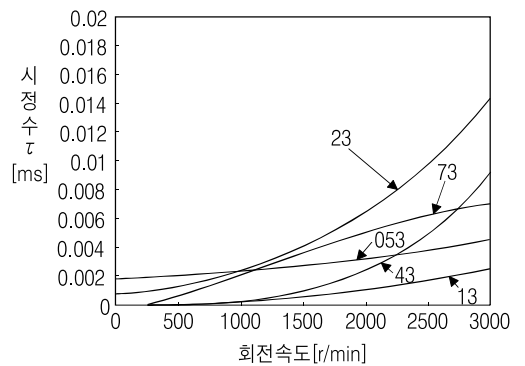
$$L_{max} = \frac{V_0}{60} \cdot \left\{ t_e + \left( 1 + \frac{J_L}{J_M} \right) \right\} \dots\dots\dots (12.2)$$

- $L_{max}$  : ..... [mm]
- $V_0$  : ..... [mm/min]
- $J_M$  : ..... [kg · cm<sup>2</sup>]
- $J_L$  : ..... [kg · cm<sup>2</sup>]
- : ..... [s]
- $t_e$  : ..... [s]

7kW , 30 ms  
 11kW~22kW , 100ms



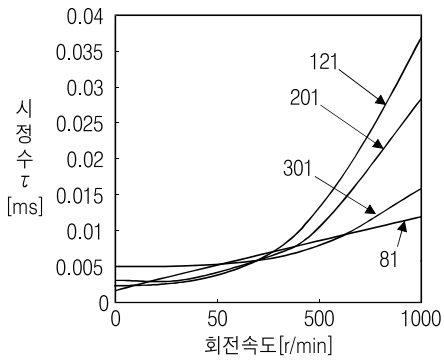
a. HC-KFS시리즈



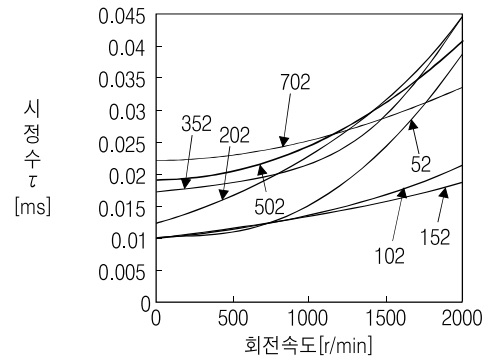
b. HC-MFS시리즈

12.4

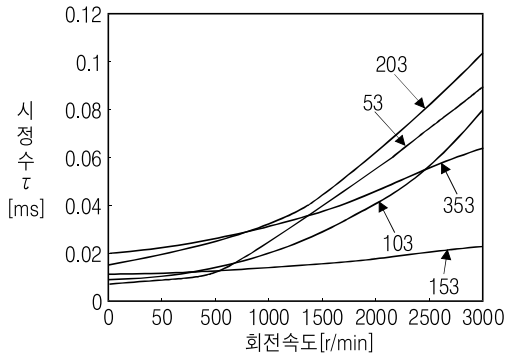
1



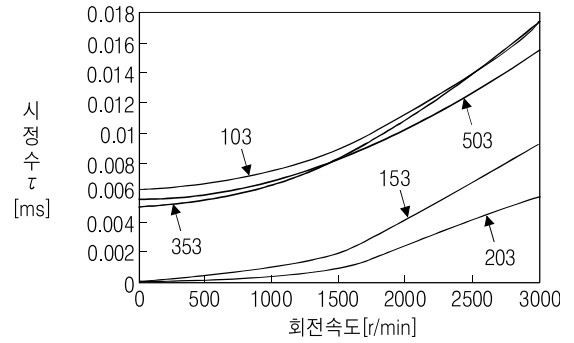
c. HC-SFS 1000r/min시리즈



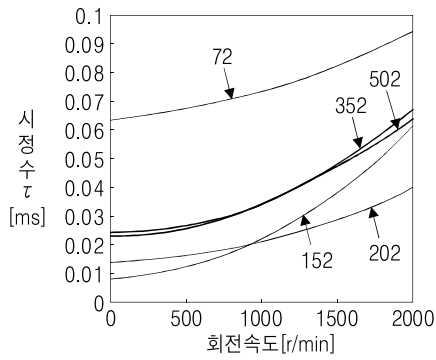
d. HC-SFS2000r/min시리즈



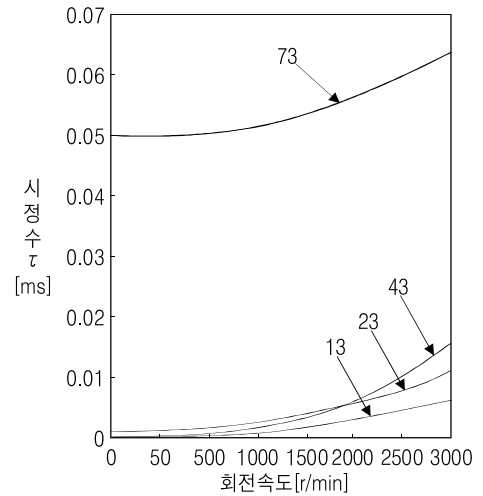
e. HC-SFS 3000r/min시리즈



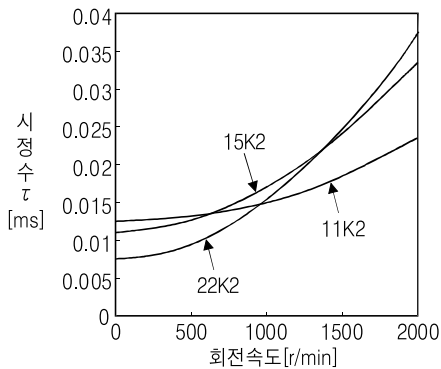
f. HC-RFS시리즈



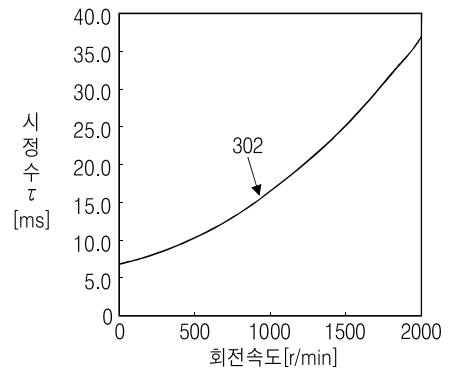
g. HC-UFS 2000r/min시리즈



h. HC-UFS3000r/min시리즈



i. HA-LFS시리즈



j. HC-LFS시리즈

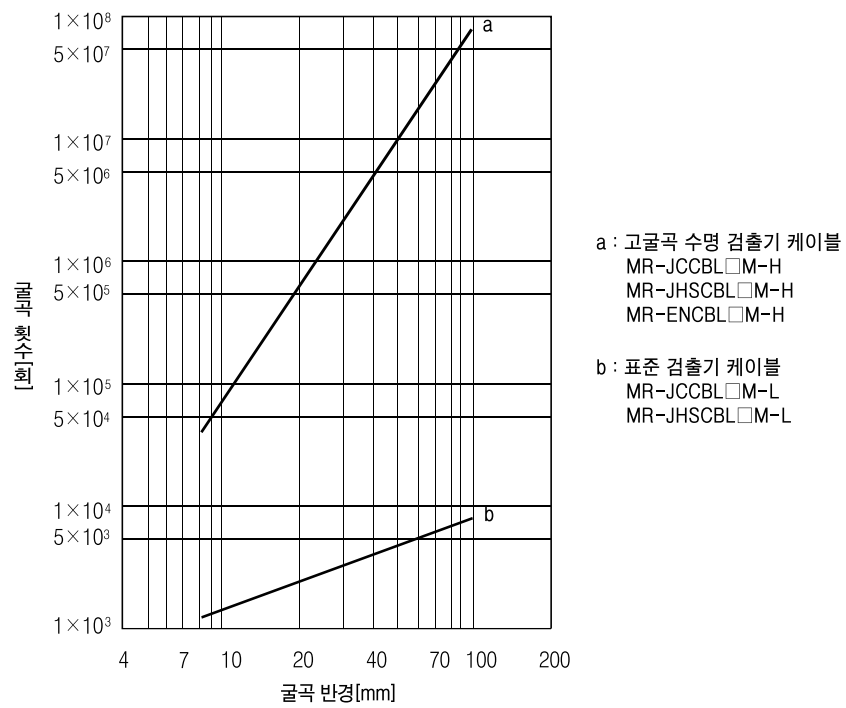
가 , 가

	[ ]
MR - J2S - 10A ~ MR - J2S - 200A MR - J2S - 10A1 ~ MR - J2S - 40A1	30
MR - J2S - 350A	16
MR - J2S - 500A MR - J2S - 700A	15
MR - J2S - 11KA ~ MR - J2S - 22KA	( ) 30

)

12. 4

가





12. 5

2500kVA, 1m (AC253V) 가  
( )

	(A0-P)	
	(L1, L2, L3)	(L1, L2)
MR - J2S - 10A · 20A	30A(10ms 5A )	70~100A(0.5~1ms 0A )
MR - J2S - 40A · 60A	30A(10ms 5A )	
MR - J2S - 70A · 100A	54A(10ms 12A )	
MR - J2S - 200A · 350A	120A(20ms 12A )	100~130A(0.5~1ms 0A )
MR - J2S - 500A	44A(20ms 20A )	30A( ms 0A )
MR - J2S - 700A	88A(20ms 20A )	
MR - J2S - 11KA	235A(20ms 20A )	
MR - J2S - 15KA		
MR - J2S - 22KA		
MR - J2S - 10A1 · 20A	159A (4ms 5A )	100~130A(0.5~1ms 0A )
MR - J2S - 40A	172A (4ms 5A )	

가 ,  
(13.2.2 )

13

가 , OFF ,15  
 가 , P-N  
 :  
 :

⚠ 위험

⚠ 주의

13. 1

13.1.1

⚠ 주의

(1)

	[W]							
		MR-RB032 [40 ]	MR-RB12 [40 ]	MR-RB32 [40 ]	MR-RB30 [13 ]	( )MR-RB50 [13 ]	MR-RB31 [6.7 ]	( )MR-RB51 [6.7 ]
MR - J2S - 10A(1)		30						
MR - J2S - 20A(1)	10	30	100					
MR - J2S - 40A(1)	10	30	100					
MR - J2S - 60A	10	30	100					
MR - J2S - 70A	20	30	100	300				
MR - J2S - 100A	20	30	100	300				
MR - J2S - 200A	100				300	500		
MR - J2S - 350A	100				300	500		
MR - JS2 - 500A	130				300	500		
MR - J2S - 700A	170						300	500

)

	( ) [W]			
	( )	MR-RB65 [8 ]	MR-RB66 [5 ]	MR-RB67 [4 ]
MR - J2S - 11KA	500(800)	500(800)		
MR - J2S - 15KA	850(1300)		850(1300)	
MR - J2S - 22KA	850(1300)			850(1300)

) ( )

(2)  
(a)

5.1

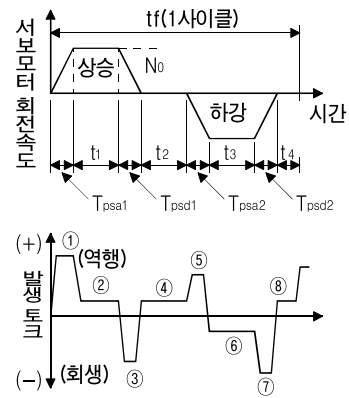
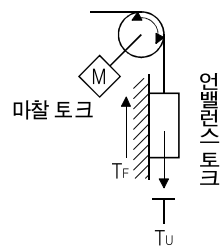
가

$$= \frac{\left( \frac{5.1}{(m+1)} \right)}{m = \quad /} \times \left( \frac{\quad}{\quad} \right)^2 [ \quad / \quad ]$$

< [ / ]  
(1)

(b)

a.



	[N · m]	E [J]
	$T_1 = \frac{(J_L+J_M) \cdot N_0}{9.55 \times 10^4} \cdot \frac{1}{T_{psa1}} + T_U + T_F$	$E_1 = \frac{0.1047}{2} \cdot N_0 \cdot T_1 \cdot T_{psa1}$
	$T_2 = T_U + T_F$	$E_2 = 0.147 \cdot N_0 \cdot T_2 \cdot t_1$
	$T_3 = \frac{(J_L+J_M) \cdot N_0}{9.55 \times 10^4} \cdot \frac{1}{T_{psd1}} + T_U + T_F$	$E_3 = \frac{0.1047}{2} \cdot N_0 \cdot T_3 \cdot T_{psd1}$
	$T_4 = T_U$	$E_4 = 0( \quad )$
	$T_5 = \frac{(J_L+J_M) \cdot N_0}{9.55 \times 10^4} \cdot \frac{1}{T_{psa2}} - T_U + T_F$	$E_5 = \frac{0.1047}{2} \cdot N_0 \cdot T_5 \cdot T_{psa2}$
	$T_6 = T_U + T_F$	$E_6 = 0.147 \cdot N_0 \cdot T_6 \cdot t_3$
	$T_7 = \frac{(J_L+J_M) \cdot N_0}{9.55 \times 10^4} \cdot \frac{1}{T_{psd2}} - T_U + T_F$	$E_7 = \frac{0.1047}{2} \cdot N_0 \cdot T_7 \cdot T_{psd2}$

(負)

(Es)

b.

	[%]	C [J]		[%]	C [J]
MR - J2S - 10A	55	9	MR - J2S - 100A	80	18
MR - J2S - 10A1	55	4	MR - J2S - 200A	85	40
MR - J2S - 20A	70	9	MR - J2S - 350A	85	40
MR - J2S - 20A1	70	4	MR - J2S - 500A	90	45
MR - J2S - 40A	85	11	MR - J2S - 700A	90	70
MR - J2S - 40A1	85	12	MR - J2S - 11KA	90	120
MR - J2S - 60A	85	11	MR - J2S - 15KA	90	170
MR - J2S - 70A	80	18	MR - J2S - 22KA	90	250

( ): ( )

10%

C (Ec) :

C

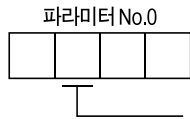
$$ER[J] = \cdot Es - Ec$$

1 tf[s]

$$PR[W] = ER/tf \dots\dots\dots (13.1)$$

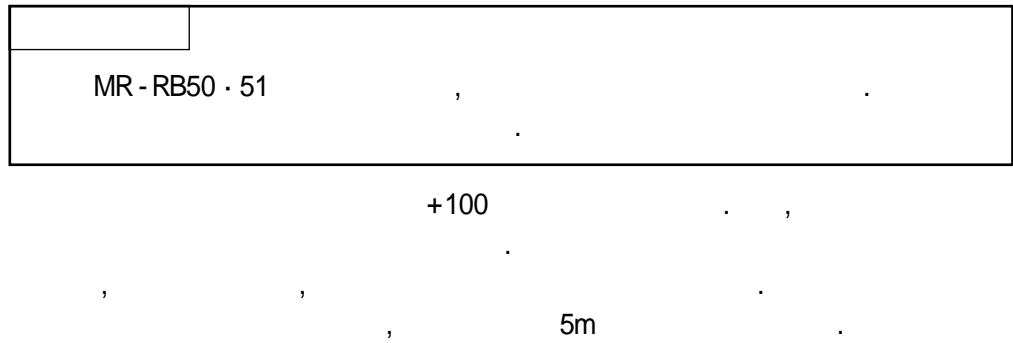
(3)

0  
 MR - RB65, 66, 67 , GRZG400 - 2 , GRZG400 - 1 , GRZG400 - 0.8  
 GRZG400 - 2 , GRZG400 - 1 , GRZG400 - 0.8 (11kW  
 )



- 00 : - 7kW
- 01 : - 11kW
- 02 : MR-RB032
- 03 : MR-RB12
- 04 : MR-RB32
- 05 : MR-RB30
- 06 : MR-RB50( )
- 08 : MR-RB31
- 09 : MR-RB51( )
- 0E : 11k~22kW , UP

(4)

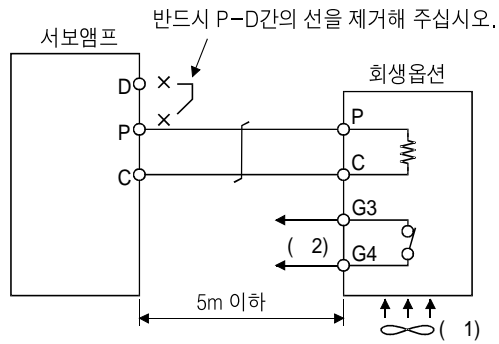


(a) MR - J2S - 350A

P - D  
G3, G4

P - C

G3 - G4

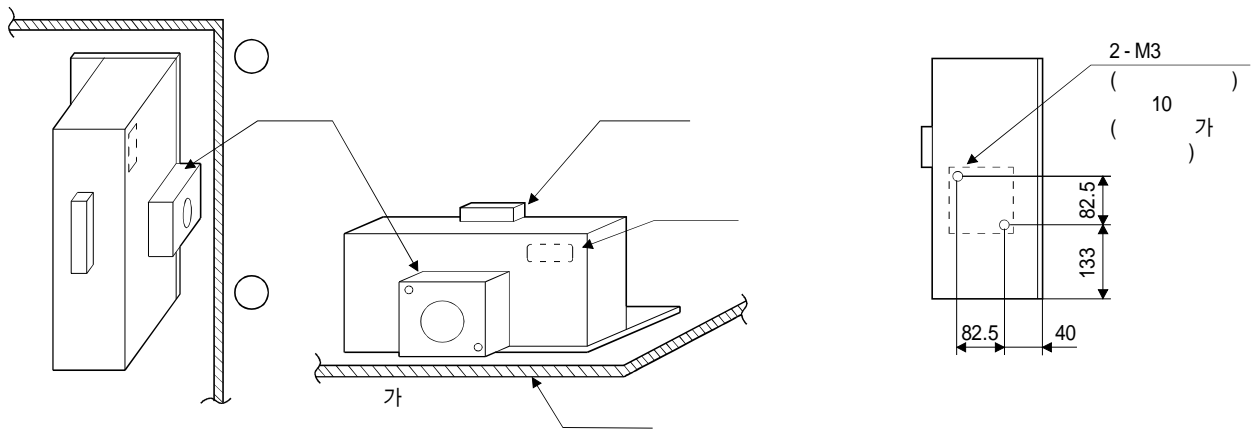


- ( ) 1. MR - RB50
- 2. G3 - G4

(1.0 m3/min, 92 )  
(MC)

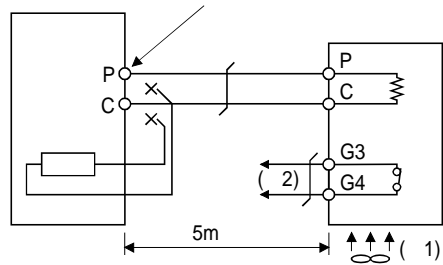
- : 120V AC/DC
- : 0.5A/4.8VDC
- : 2.4VA

MR - RB50



(b) MR - J2S - 500A · MR - J2S - 700A

P - C (P - C )  
 . G3, G4  
 G3 - G4

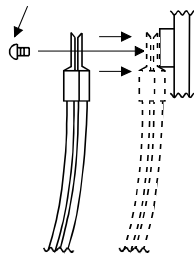


( ) 1. MR - RB50 · MR - RB51 (1.0m³/min, 92 )

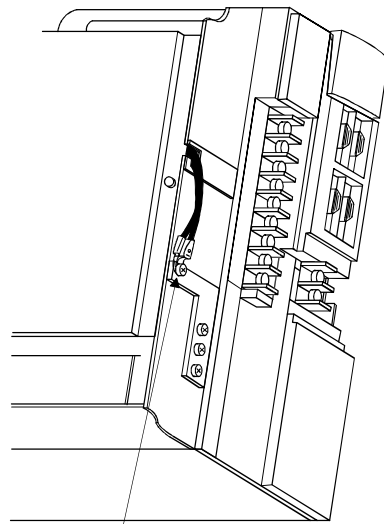
2. (MC)  
 G3 - G4

- : 120V AC/DC
- : 0.5A/4.8VDC
- : 2.4VA

(P - C )

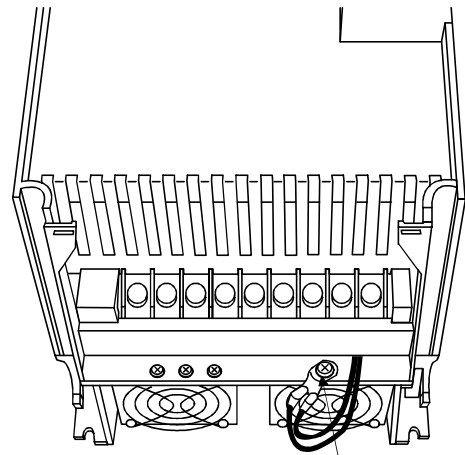


MR-J2S-500A의 경우



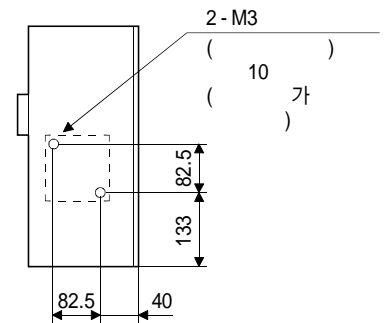
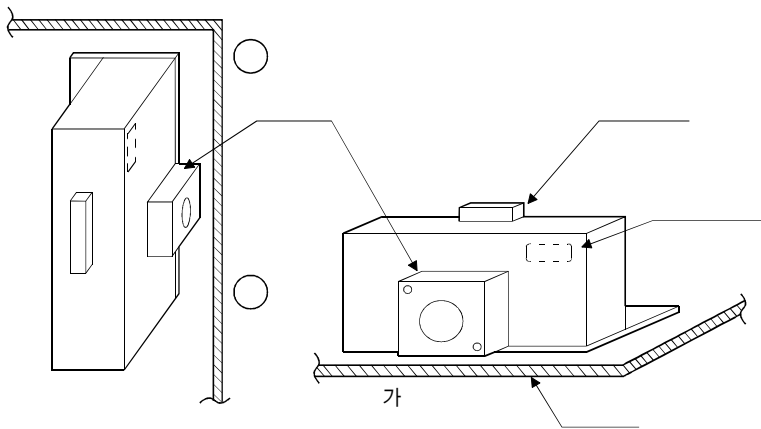
부속 나사

MR-J2S-700A의 경우



부속 나사

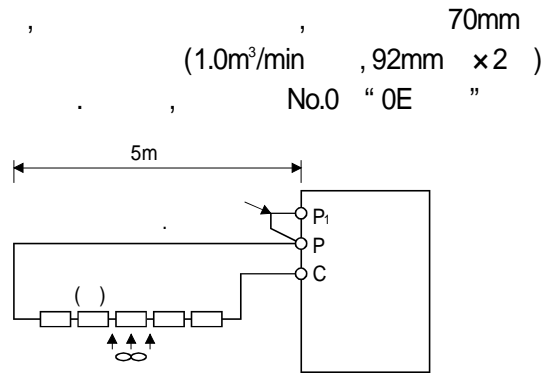
MR - RB50 · MR - RB51





(c) MR - J2S - 11KA~MR - J2S - 22KA( )

(4 5 )



( )

가

(MR - RB65, 66, 67)

		[W]		[ ]	
MR - J2S - 11KA	GRZG400 - 2	500	800	8	4
MR - J2S - 15KA	GRZG400 - 1	850	1300	5	5
MR - J2S - 22KA	GRZG400 - 0.8	850	1300	4	5

(d) MR - J2S - 11KA - PX ~ MR - J2S - 22KA - PX( )  
 MR - J2S - 11KA - PX ~ MR - J2S - 22KA - PX

MR - RB65, 66,

67

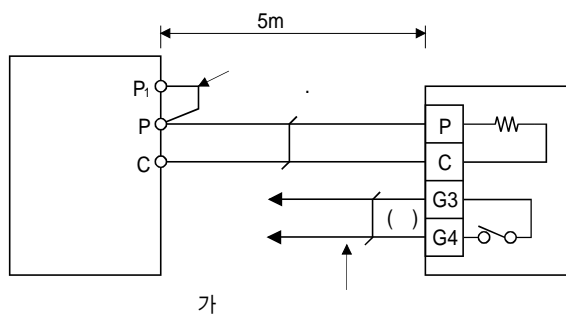
MR - RB65, 66, 67 GRZG400 - 2 , GRZG400 - 1 , GRZG400 - 0.8

GRZG400 - 2 , GRZG400 - 1 , GRZG400 - 0.8

(11kW

. G3, G4

G3 - G4

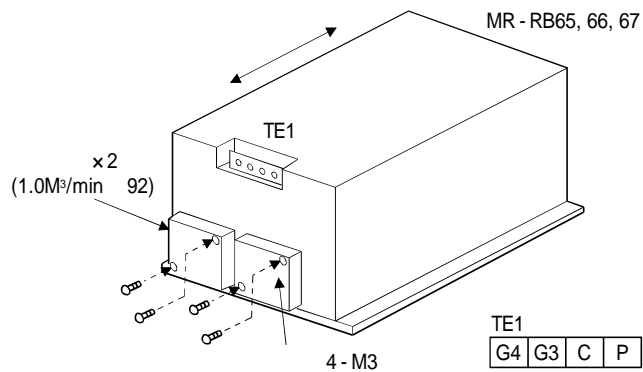


( ) G3 - G4

- : 120V AC/DC
- : 0.5A/4.8VDC
- : 2.4VA

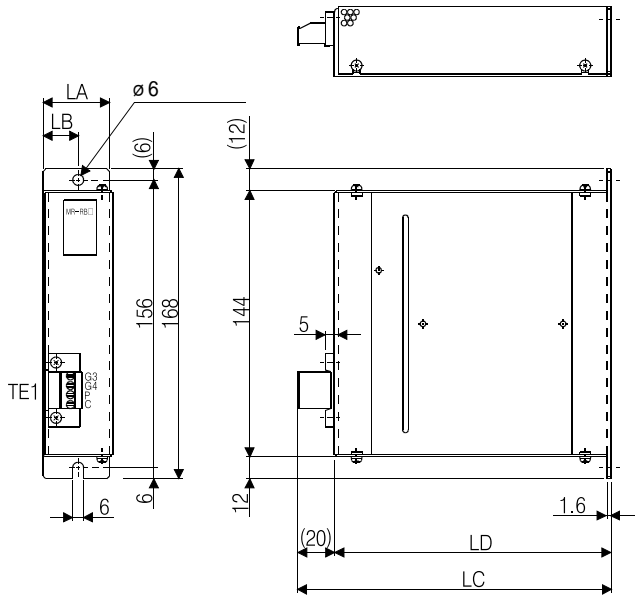
		[ ]	[W]	
MR - J2S - 11KA - PX	MR - RB65	8	500	800
MR - J2S - 15KA - PX	MR - RB66	5	850	1300
MR - J2S - 22KA - PX	MR - RB67	4	850	1300

No.0 "OE"



(5)

(a) MR-RB032 · MR-RB12



• TE1 [ : mm]

G3
G4
P
C

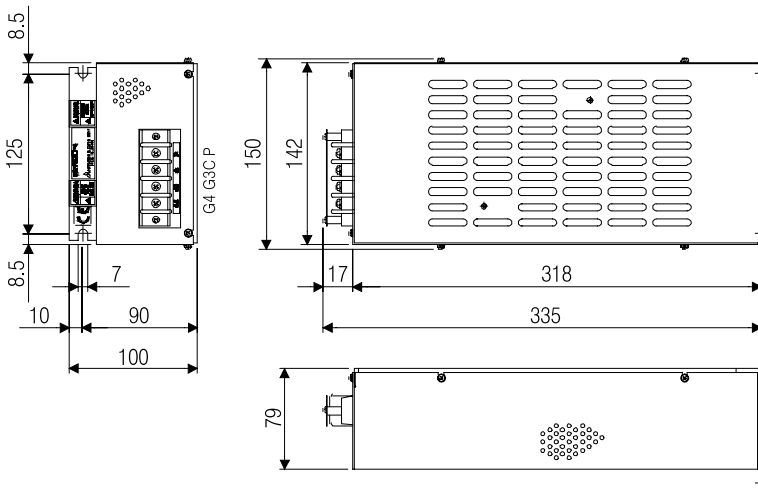
: M3  
: 0.5~0.6[N · m]

• : M5  
: 3.2[N · m]

					[kg]
	LA	LB	LC	LD	
MR-RB032	30	15	119	99	0.5
MR-RB12	40	15	169	149	1.1

(b) MR-RB30 · MR-RB31 · MR-RB32

[ : mm]



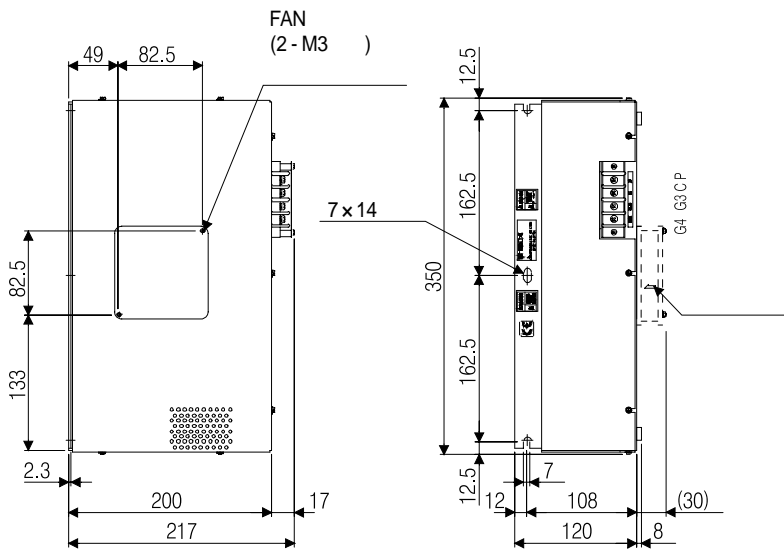
P
C
G3
G4

: M4  
: 1.2[N · m]

• : M6  
: 5.4[N · m]

	[kg]
MR-RB30	2.9
MR-RB31	
MR-RB32	

(c) MR - RB50 · MR - RB51



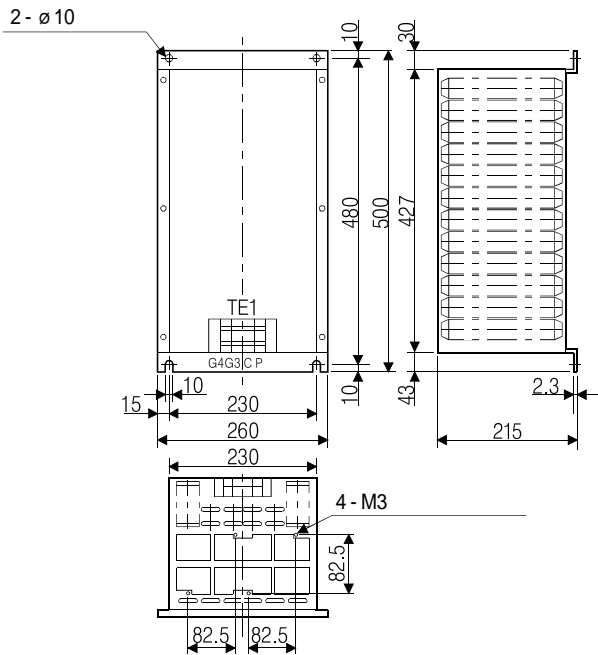
[ : mm]

P	: M4
C	: 1.2[N · m]
G3	
G4	

• : M6  
: 5.4[N · m]

	[kg]
MR-RB50	5.6
MR-RB51	

(d) MR - RB65 · MR - RB66 · MR - RB67



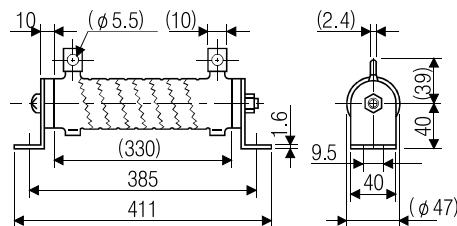
[ : mm]

G4	G3	C	P	: M5
				: 2.0[N · m]

• : M8  
: 13.2[N · m]

	[kg]
MR-RB65	10
MR-RB66	11
MR-RB67	11

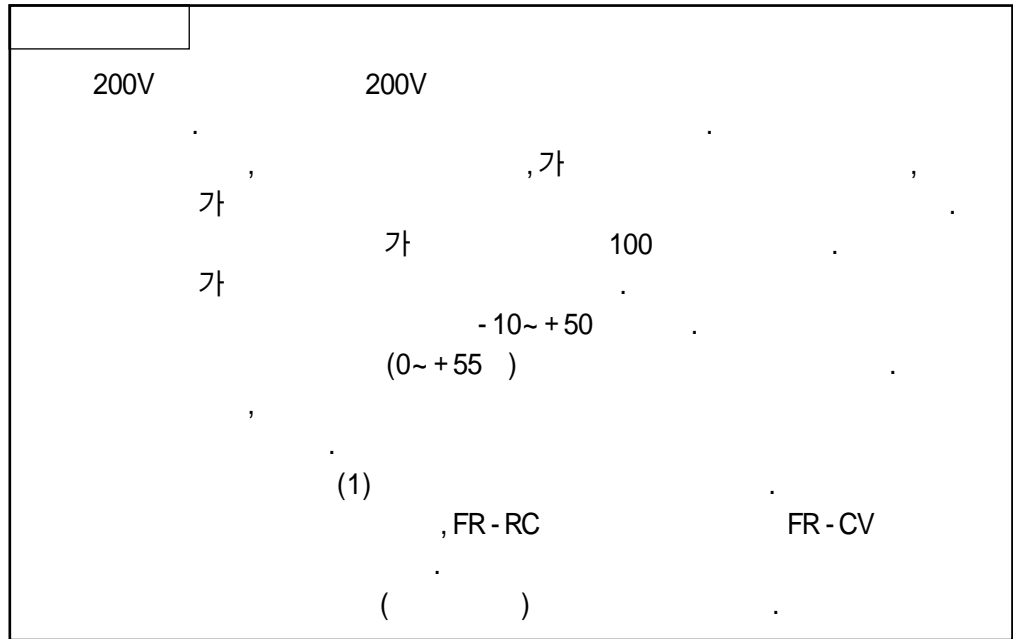
(e) GRZG400 - 2 · GRZG400 - 1 · GRZG400 - 0.8 ( )



[ : mm]

• : M8  
: 13.2[N · m]

13.1.2



. MR - RB

, No.0 " 01 " , FR - BU2 - (H)

(1)

			[kW]	[ ]	
FR - BU2 - 15K	FR - BR - 15K	1	0.99	8	MR - J2S - 350A MR - J2S - 500A
FR - BU2 - 30K	FR - BR - 30K	1	1.99	4	MR - J2S - 500A MR - J2S - 700A MR - J2S - 11KA MR - J2S - 15KA
FR - BU2 - 55K	FR - BR - 55K	1	3.91	2	MR - J2S - 11KA MR - J2S - 15KA MR - J2S - 22KA
	MT - BR5 - 55K	1	5.5	2	MR - J2S - 22KA

(2)

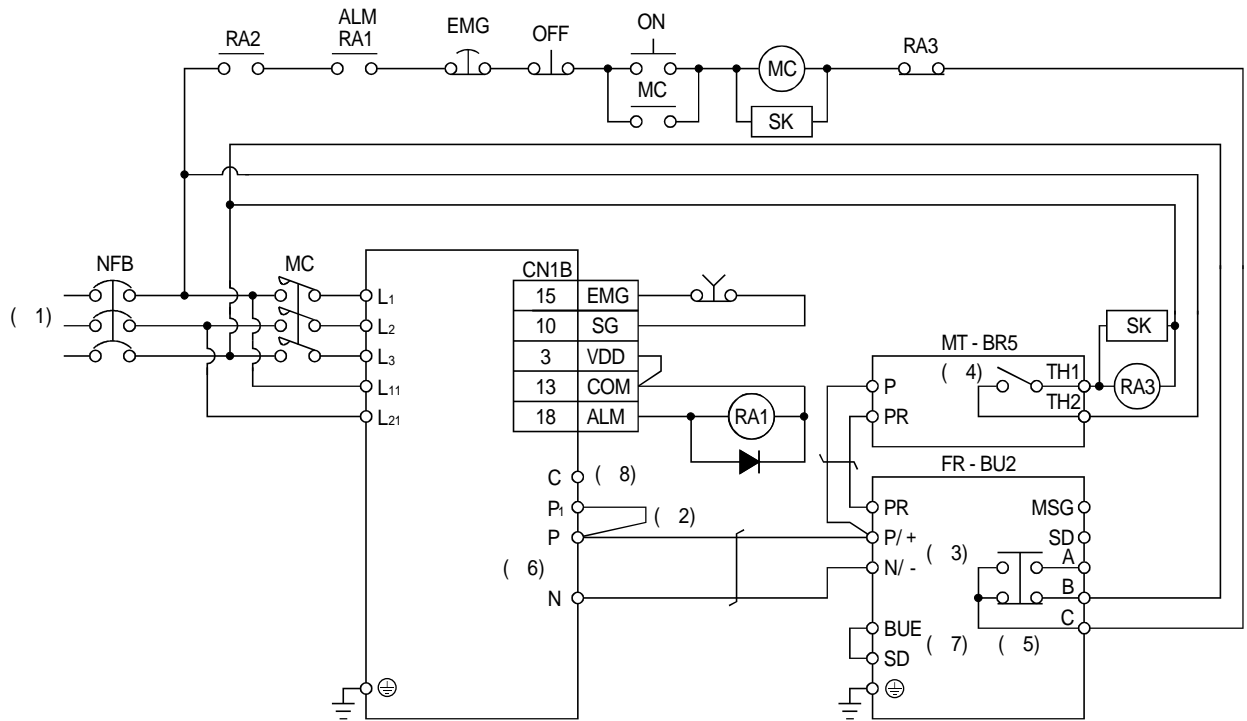
FR - BU2

가

No.		가	
0		가	
1		가	FR - BU2 - (H)
2	1	가	
3	2		
77			
78			
CLr			
ECL			
C1			



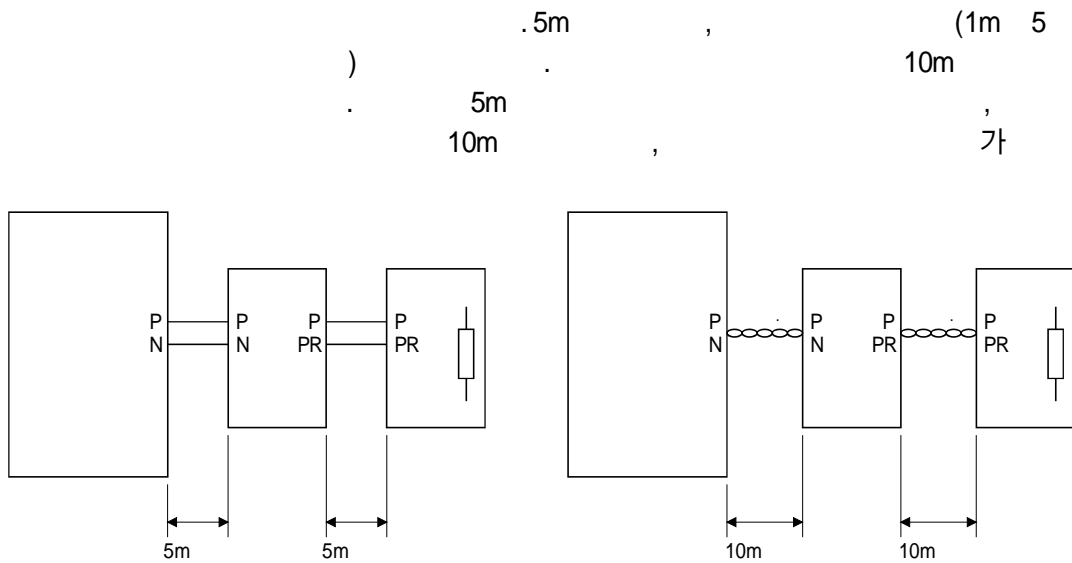
(b) MT - BR5



- ( ) 1. , 1,3
- 2. P1 - P . ( ) DC , 12.13
- 3. P/+ , N/-
- 4. : 1a , AC110V\_5A/AC220V\_3A  
: TH1 - TH2 , : TH1 - TH2
- 5. : AC230V\_0.3A/DC30V\_0.3A  
: B - C /A - C , : B - C /A - C
- 6. P , N
- 7. BUE - SD . ( )
- 8. 22kW , P C

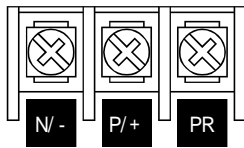


(c)

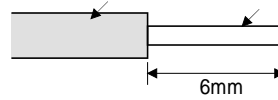
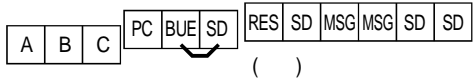
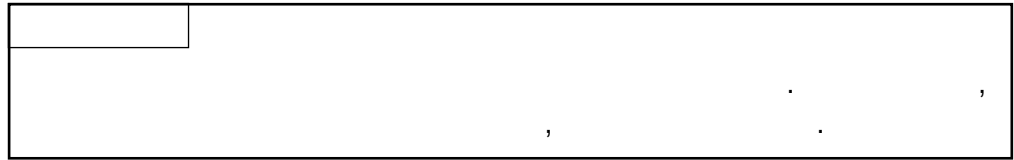


(d)

, HIV (600V 2 )



		N/-, P/+ PR, ⊖	[N · m]	N/-, P/+, PR, ⊖	
				HIV [mm <sup>2</sup> ]	AWG
FR-BU2-15K	M4	5.5-4	1.5	3.5	12
FR-BU2-30K	M5	5.5-5	2.5	5.5	10
FR-BU2-55K	M6	14-6	4.4	14	6



- : M3
- : 0.5N · m~0.6N · m
- : 0.3mm<sup>2</sup>~0.75mm<sup>2</sup>
- : ( )
- ( : 0.4mm/ : 2.5mm)

(e) P , N



			( )	( )
MR - J2S - 350A	FR - BU2 - 15K	1	FVD5.5 - S4( )	b
MR - J2S - 500A	FR - BU2 - 15K	1		
	FR - BU2 - 30K	1		
MR - J2S - 700A	FR - BU2 - 30K	1	FVD5.5 - 6( )	b
MR - J2S - 11KA	FR - BU2 - 30K	1	FVD14 - 6( )	a
	FR - BU2 - 55K	1	FVD5.5 - 6( )	b
MR - J2S - 15KA	FR - BU2 - 30K	1	FVD14 - 6( )	a
	FR - BU2 - 55K	1	FVD14 - 8( )	a
MR - J2S - 22KA	FR - BU2 - 55K	1		

( )

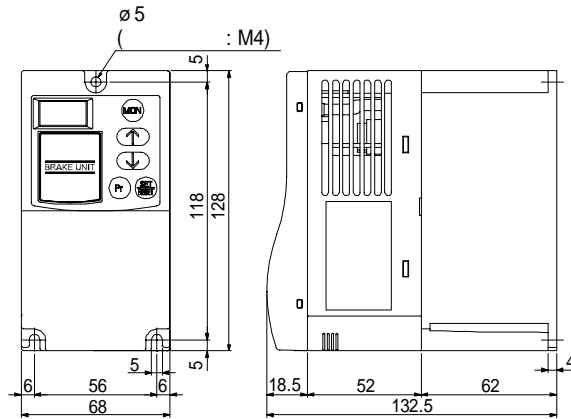
a	YF - 1 · E - 4 YNE - 38 DH - 112 · DH - 122
b	YNT - 1210S

(4)

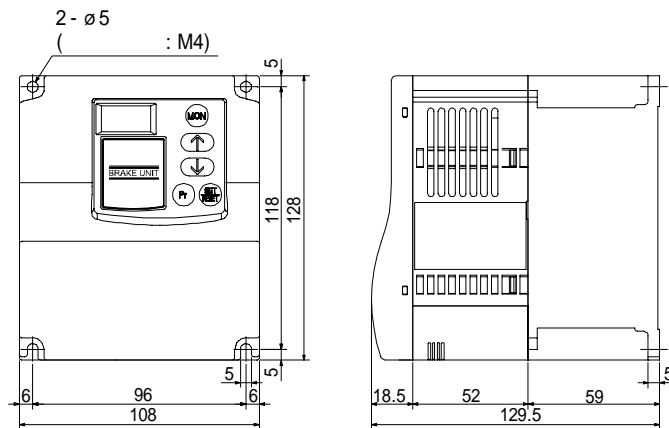
(a) FR-BU2

[ : mm]

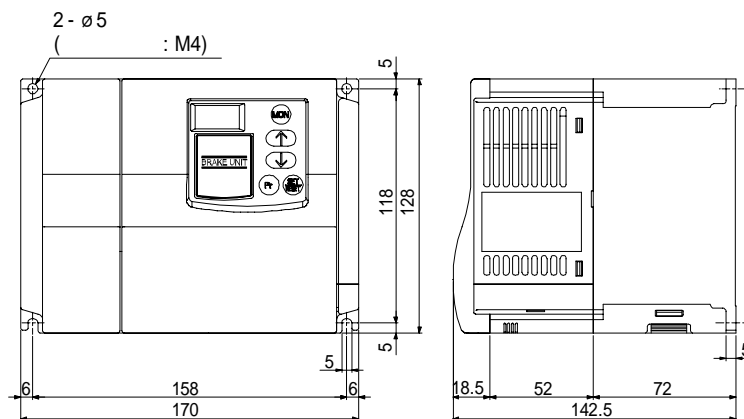
FR-BU2-15K



FR-BU2-30K

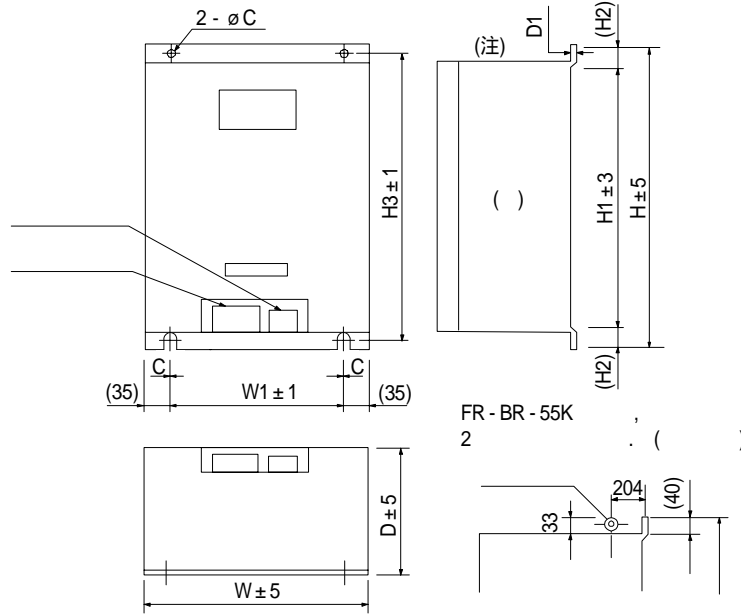


FR-BU2-55K



(b) FR - BR

[ : mm]

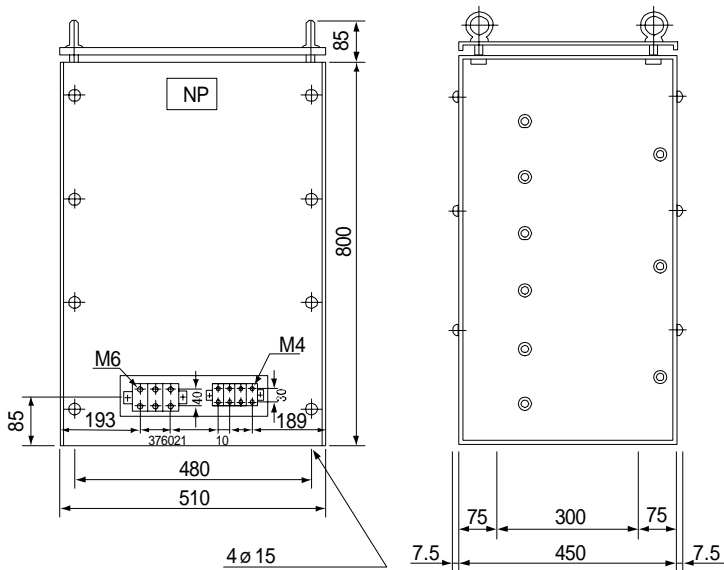


( ) 가

	W	W1	H	H1	H2	H3	D	D1	C	[Kg]
FR - BR - 15K	170	100	450	410	20	432	220	3.2	6	15
FR - BR - 30K	340	270	600	560	20	582	220	4	10	30
FR - BR - 55K	480	410	700	620	40	670	450	3.2	12	70

(c) MT - BR5

[ : mm]



		[Kg]
MT - BR5 - 55K	2.0	50

13.1.3

No.0 “01”

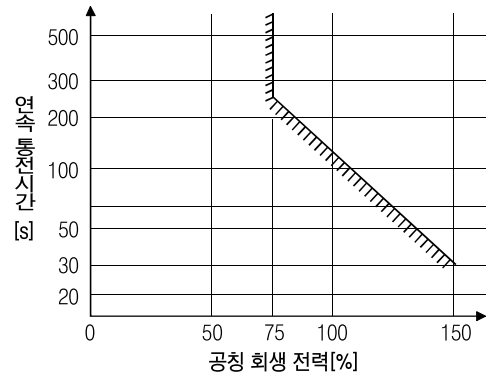
(1)

75%

가

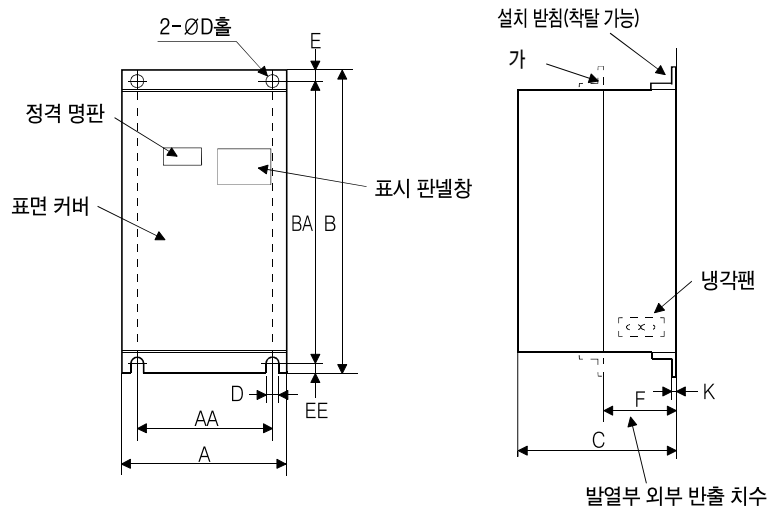
. MR - J2S - 500A~MR - J2S - 22KA

	[kW]	
FR - RC - 15K	15	MR - J2S - 500A MR - J2S - 700A
FR - RC - 30K	30	MR - J2S - 11KA MR - J2S - 15KA
FR - RC - 55K	55	MR - J2S - 22KA





(3)



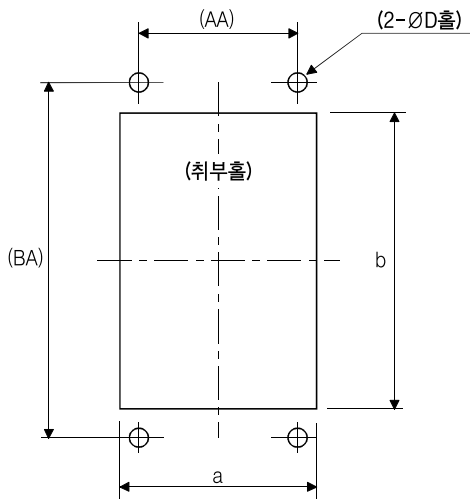
[ :mm]

	A	AA	B	BA	C	D	E	EE	K	F	[kg]
FR - RC - 15K	270	200	450	432	195	10	10	8	3.2	87	19
FR - RC - 30K	340	270	600	582	195	10	10	8	3.2	90	31
FR - RC - 55K	480	410	700	670	250	12	15	15	3.2	135	55

(4) 가

가

[ :mm]



	a	b	D	AA	BA
FR - RC - 15K	260	412	10	200	432
FR - RC - 30K	330	562	10	270	582
FR - RC - 55K	470	642	12	410	670

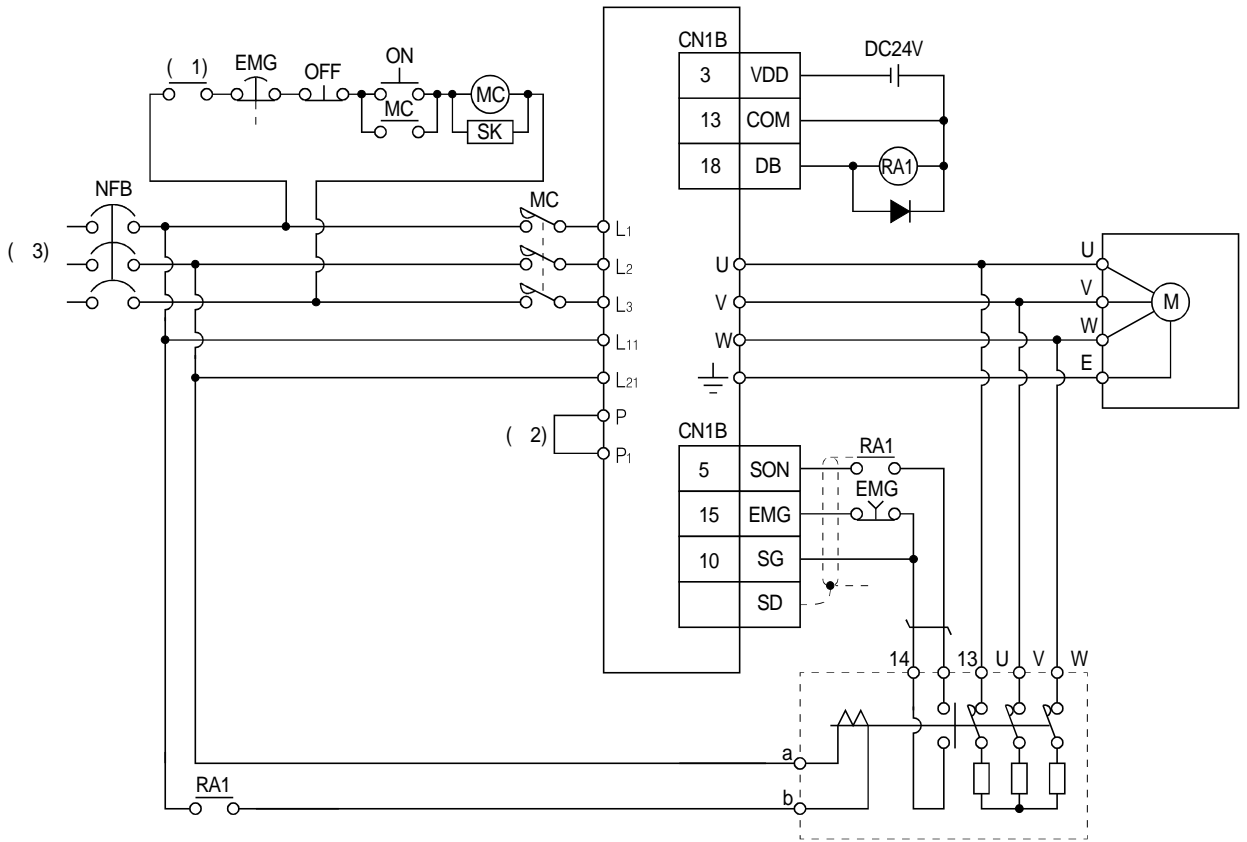
13.1.4

(1)

가  
 ,7kW .11kW  
 No.1 “ 1 ”

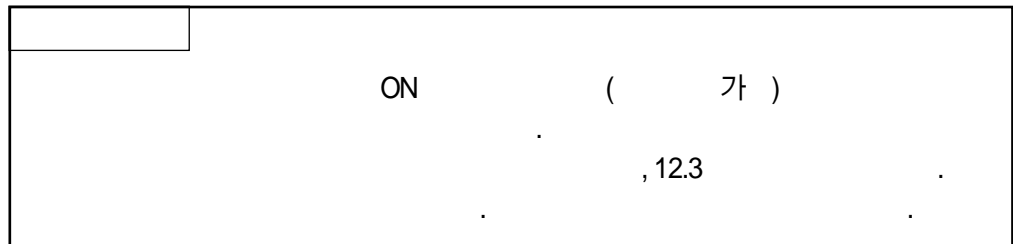
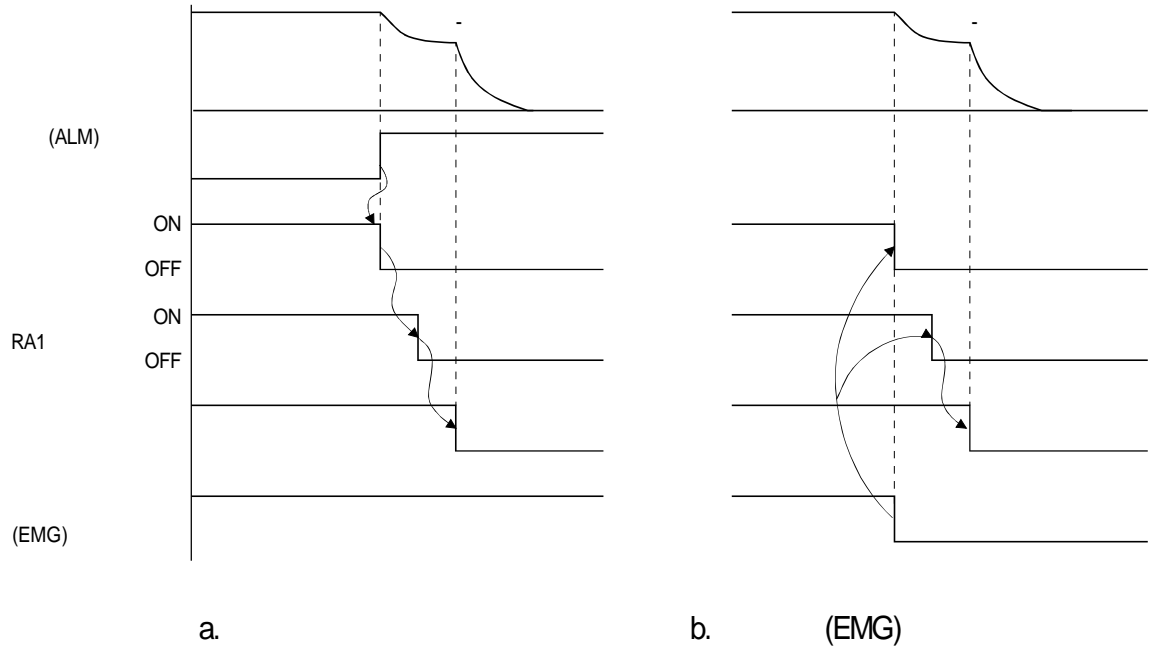
MR - J3 - 11KA	DBU - 11K
MR - J3 - 15KA	DBU - 15K
MR - J3 - 22KA	DBU - 22K

(2)



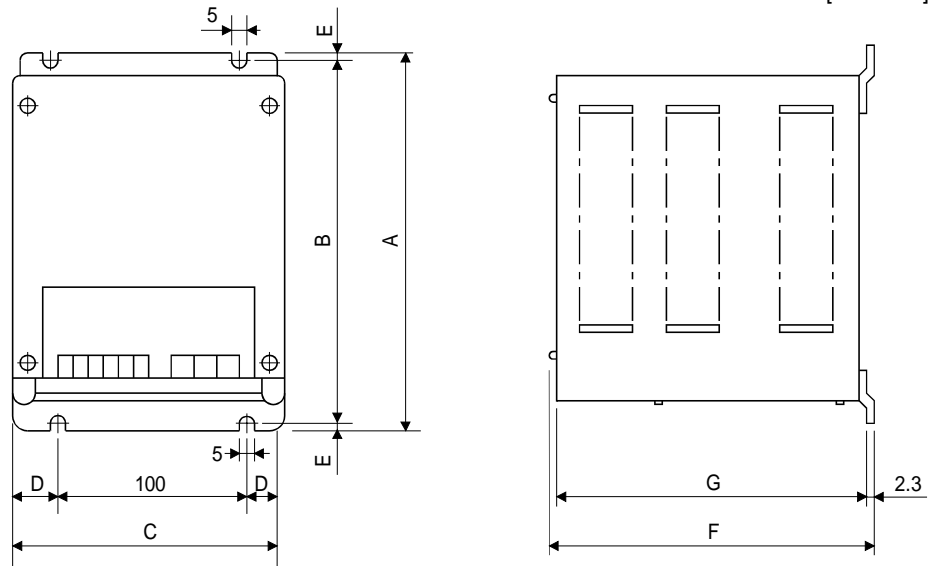
- 1.
- 2. 11k~22kW , P-P1 .( .)
- 3. DC ,13.2.4 ,1.3





(3)

[ : mm]



E (GND)	a	b	13	14
------------	---	---	----	----

: M3.5  
: 0.8[N · m]

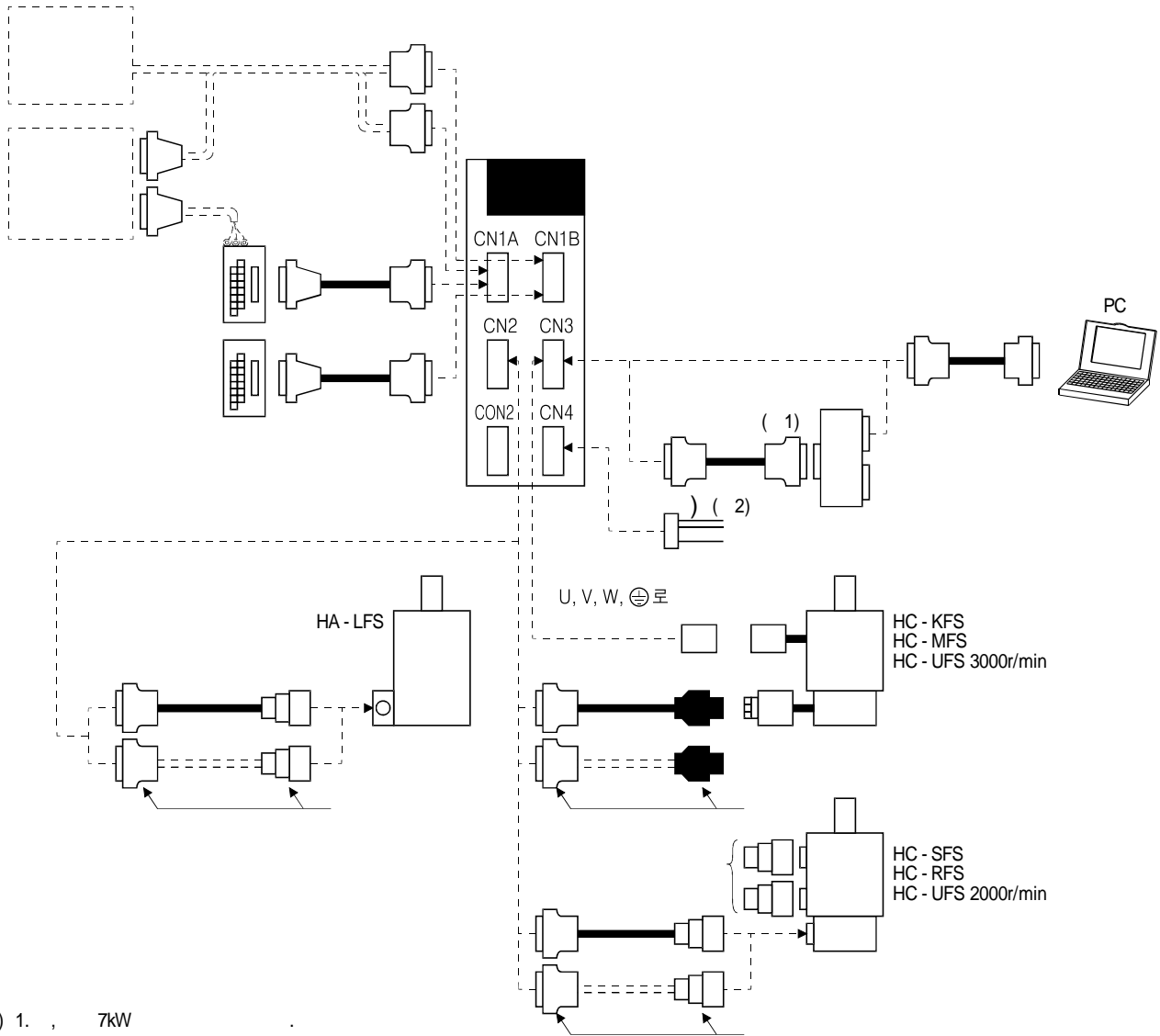
U	V	W
---	---	---




: M4  
: 1.2[N · m]










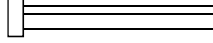
	A	B	C	D	E	F	G	[kg]	[mm <sup>2</sup> ]
DBU - 11K	200	190	140	20	5	170	163.5	2	5.5
DBU - 15K, 22K	250	238	150	25	6	235	228	6	5.5

13.1.5

(1)

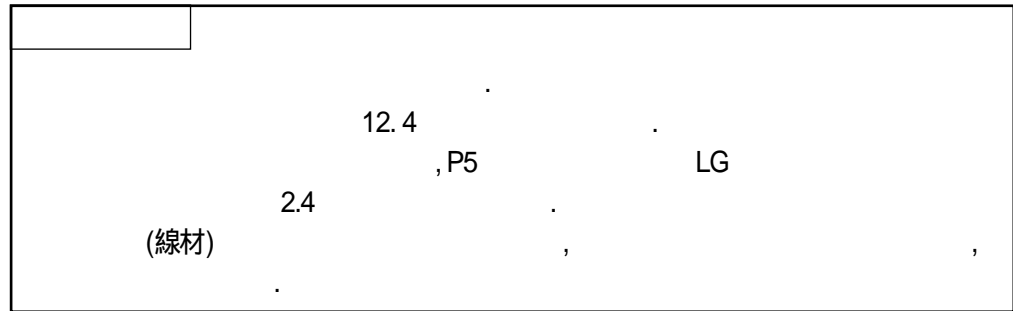


		MR-JCCBL M-L (2)	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: 1 - 172161 - 9 : 170359 - 1 : MT1 - 0002 ( , )	IP20
		MR-JCCBL M-H (2)			IP20
		MR-JHSCBL M-L (2)	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: MS3106B20 - 29S : MS3057 - 12A ( , )	IP20
		MR-JHSCBL M-H (2)			IP20
	IP65	MR-ENCBL M-H (2)	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: MS3106A20 - 29S(D190) : CE3057 - 12A - 3(D265) : CE02 - 20BS - S ( , )	IP65 IP67
		MR-J2CNM	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: 1 - 172161 - 9 : 170359 - 1 : MT1 - 0002 ( , )	IP20
		MR-J2CNS	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: MS3106B20 - 29S : MS3057 - 12A ( , )	IP20
		MR-ENCNS	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )	: MS3106A20 - 29S(D190) : CE3057 - 12A - 3(D265) : CE02 - 20BS - S ( , )	IP65 IP67
		MR-J2CN1	: 10120 - 3000VE : 10320 - 52F0 - 008 (3M )		: 2

		MR-J2TBL M 13.1.6	: HIF3BA - 20D - 2.54R ( ) 	: 10120 - 6000EL : 10320 - 3210 - 000 (3M )	
		MR - TB20	13.1.5		
		MR - J2HBUS M 13.1.7		: 10120 - 6000EL : 10320 - 3210 - 000 (3M )	: 10120 - 6000EL : 10320 - 3210 - 000 (3M )
		MR - J2CN3TM	13.1.6		
		MR - CPCATCBL3M (3)		: 10120 - 6000EL : 10320 - 3210 - 000 (3M )	: DE - 9SF - N : DE - C1 - J6 - S6 ( , )
		MR - PWCNS1		: CE05 - 6A22 - 23SD - B - BSS : CE3057 - 12A - 2(D265) ( , )	EN
		MR - PWCNS2		: CE05 - 6A22 - 10SD - B - BSS : CE3057 - 16A - 2(D265) ( , )	IP65
		MR - PWCNS3		: CE05 - 6A22 - 17SD - B - BSS : CE3057 - 20A - 2(D265) ( , )	IP67
		MR - BKCN		: MS3106A20 - 29S(D190)(DDK) : YS010 - 5 - 8( , )	EN IP65 IP67
		MR - PWCNK1		: 55559 - 04P - 210 : 5558PBT3L(AWG16 )(6 ) ( , Molex)	IP20
		MR - PWCNK2		: 55559 - 06P - 210 : 5558PBT3L(AWG16 )(8 ) ( , Molex)	IP20
)		MR - H3CBL1M		: 171822 - 4	

(2)

**⚠ 주의**



가 가

(a) MR - JCCBL M - L · MR - JCCBL M - H  
HC - KFS · HC - MFS · HC - UFS 3000r/min

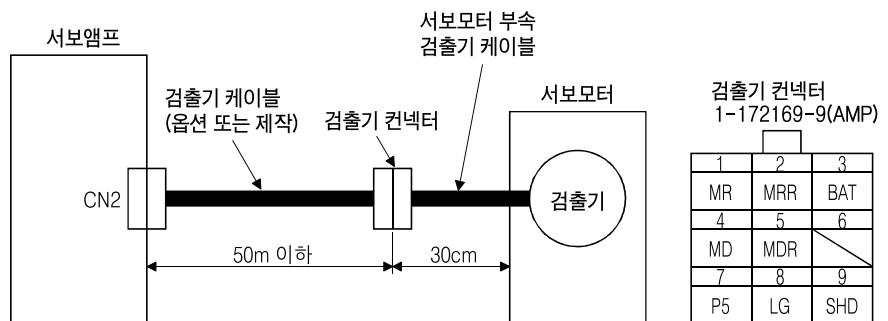
형명 : MR - J C C B L □ M - □

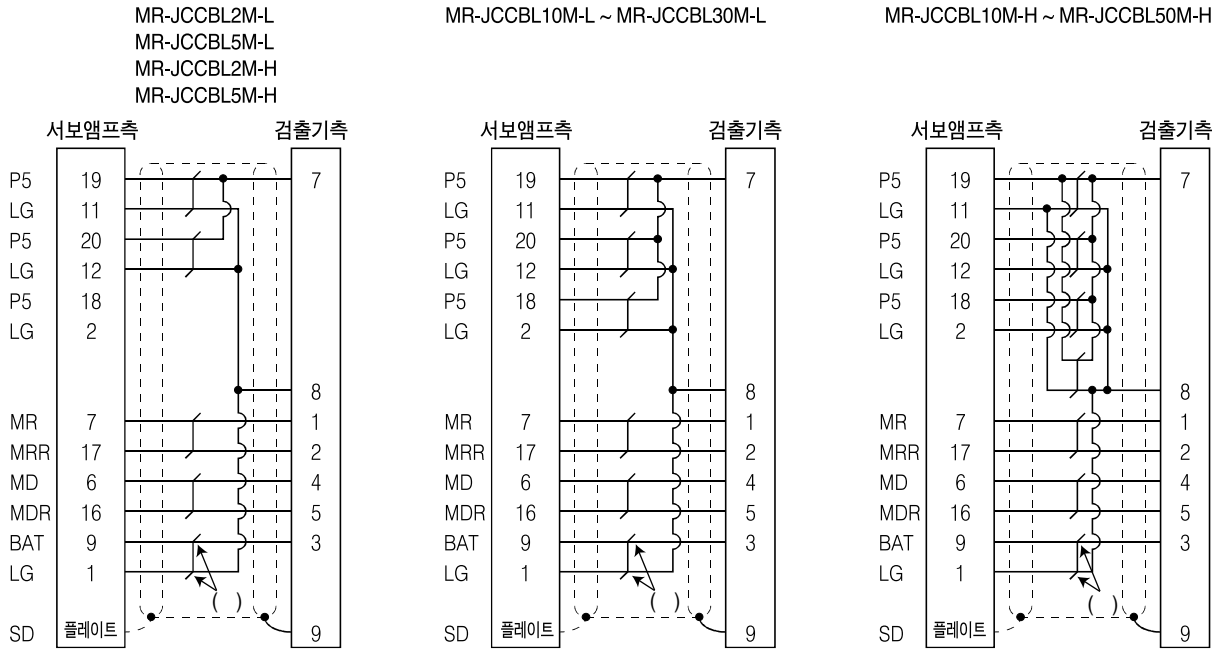
기호	(주)케이블 길이[m]
2	2
5	5
10	10
20	20
30	30
40	40
50	50

기호	사양
L	표준 굴곡수명
H	고굴곡수명

(주) MR-JCCBL□M-L에는 40, 50m는 없습니다.

3.3.1





)

13.2.1  
MR-J2CNM

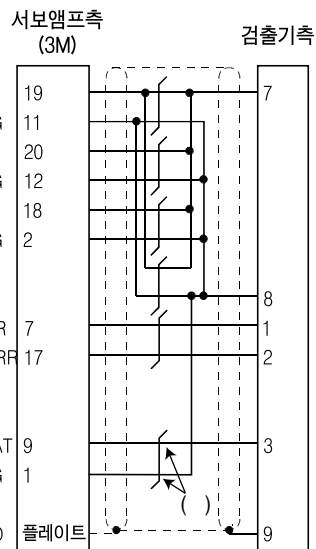
가

, MD MDR

50m

3

AWG24를 사용할 경우



)

(b) MR - JHSCBL M - L · MR - JHSCBL M - H · MR - ENCBL M - H  
 HC - SFS · HC - RFS · HC - UFS 2000r/min

형명 : MR - JHSCBL □ M - □

기호	(주)케이블 길이[m]
2	2
5	5
10	10
20	20
30	30
40	40
50	50

기호	사양
L	표준 굴곡 수명
H	고굴곡 수명

(주) MR-JHSCBL□M-L에는 40, 50m는 없습니다.

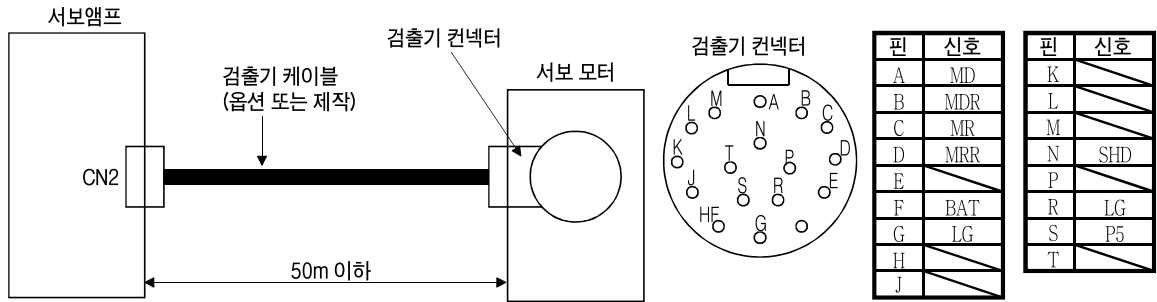
형명 : MR - ENCBL □ M - H

기호	케이블 길이[m]
2	2
5	5
10	10
20	20
30	30
40	40
50	50

고굴곡 수명



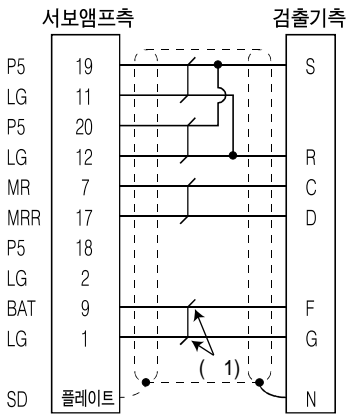
3.3.1



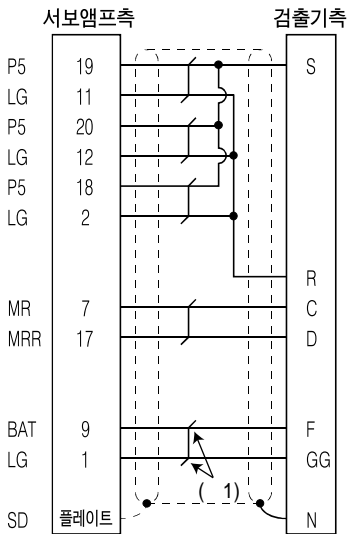
MR-JHSCBL2M-L  
MR-JHSCBL5M-L  
MR-JHSCBL2M-H  
MR-JHSCBL5M-H  
MR-ENCBL2M-H  
MR-ENCBL5M-H

MR-JHSCBL10M-L ~ MR-JHSCBL30M-L

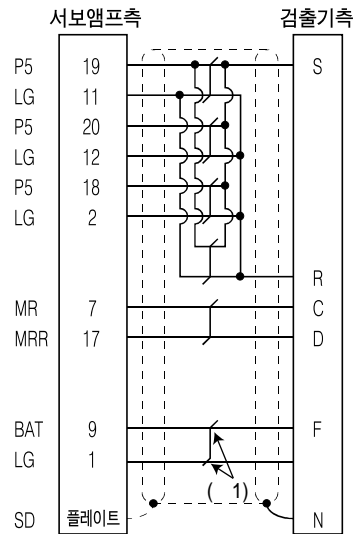
MR-JHSCBL10M-H ~ MR-JHSCBL50M-H  
MR-ENCBL10M-H ~ MR-ENCBL50M-H



( 2 ) AWG24를 사용  
(10m 미만의 경우)



AW22를 사용  
(10~50m의 경우)



AW22를 사용  
(10~50m의 경우)

) 1.

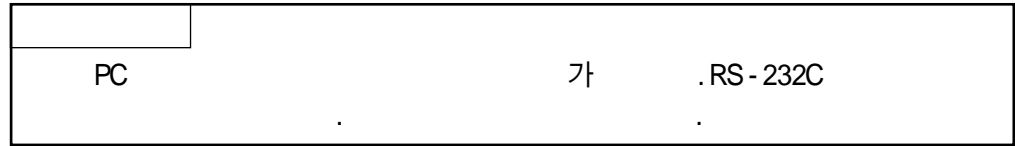
2. 5m

AWG28

, 13.2.1

MR - J2CNS  
50m

(3)



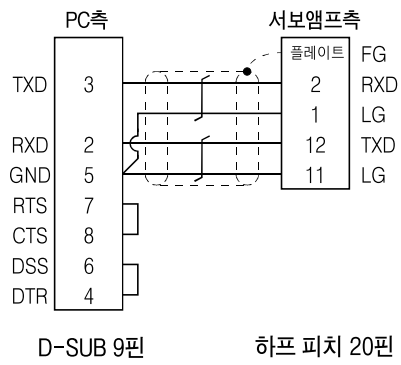
(a)

형명 : MR - CPCATCBL3M

케이블 길이[3m]

(b)

· MR-CPCATCBL3M



(多芯)

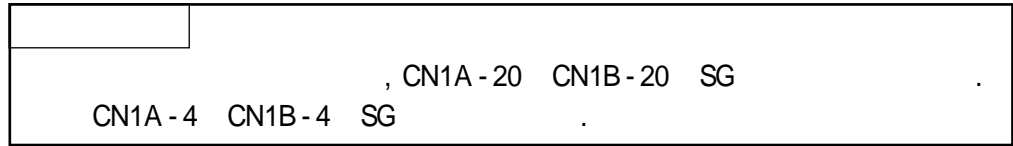
FG

가

15m

.가

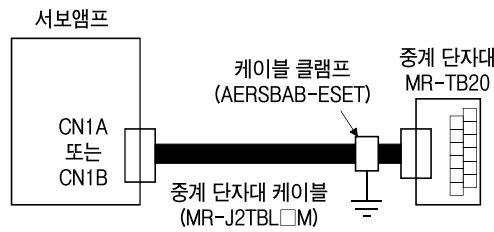
13.1.6 (MR-TB20)



(1)

(MR-TB20)

(MR-J2TBL M)



ESET)

(AERSBAN -  
13.2.6 (2)(c)

(2)

, MR-J2S-A(MR-J2-A) 2

No.43~48

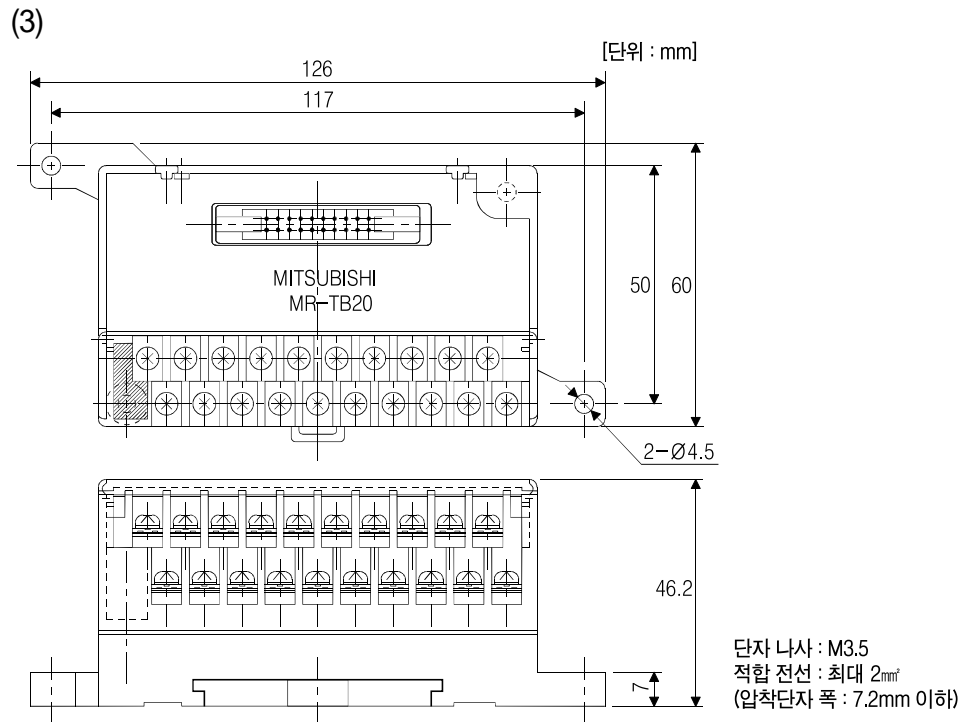
(4) 3.3

CN1A

10	LG	11	PP	12	LZ	13	LB	14	COM	15	OPC	16	PG	17	LZR	18	LBR	19	RD
0	NP	1	P15R	2	LA	3	CR	4	SG	5	NG	6	OP	7	LAR	8	INP	9	SD

CN1B

10	LG	11	VDD	12	SON	13		14	TL	15	P15R	16	COM	17	EMG	18	LSN	19	ZSP
0	VC	1	DO1	2	TLC	3	PC	4	SG	5	TLA	6	RES	7	LSP	8	ALM	9	SD



(4) (MR-J2TBL M)

형명 : MR - J 2 T B L □ M

기호	케이블 길이[m]
05	0.5
1	1

중계 단자대측 컨넥터(히로세 전기)  
HIF3BA-20D-2.54R(컨넥터)

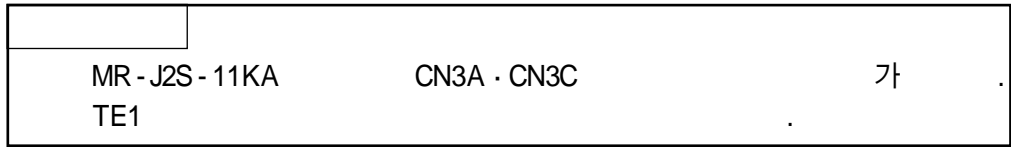
서보앰프측(CN1A · CN1B) 컨넥터(3M)  
10120-6000EL(컨넥터)  
10320-3210-000(셸킷)

(주)신호 약칭						중계 단자대 단자대 No.	핀 No.		핀 No.
위치제어 모드	속도제어 모드		토크제어 모드						
CN1A용	CN1B용	CN1A용	CN1B용	CN1A용	CN1B용				
LG	LG	LG	LG	LG	LG	10	B1		1
NP	VC		VC		VLA	0	A1		2
PP	VDD		VDD		VDD	11	B2		3
P15R	DO1	P15R	DO1	P15R	DO1	1	A2		4
LZ	SON	LZ	SON	LZ	SON	12	B3		5
LA	TLC	LA	TLC	LA	VLC	2	A3		6
LB		LB	SP2	LB	SP2	13	B4		7
CR	PC	SP1	ST1	SP1	RS2	3	A4		8
COM	TLC	COM	ST2	COM	RS1	14	B5		9
SG	SG	SG	SG	SG	SG	4	A5		10
OPC	P15R		P15R		P15R	15	B6		11
NG	TLA		TLA		TC	5	A6		12
PG	COM		COM		COM	16	B7		13
OP	RES	OP	RES	OP	RES	6	A7		14
LZR	EMG	LZR	EMG	LZR	EMG	17	B8		15
LAR	LSP	LAR	LSP	LAR		7	A8		16
LBR	LSN	LBR	LSN	LBR		18	B9		17
INP	ALM	SA	ALM		ALM	8	A9		18
RD	ZSP	RD	ZSP	RD	ZSP	19	B10		19
SD	SD	SD	SD	SD	SD	9	A10		20

플레이트

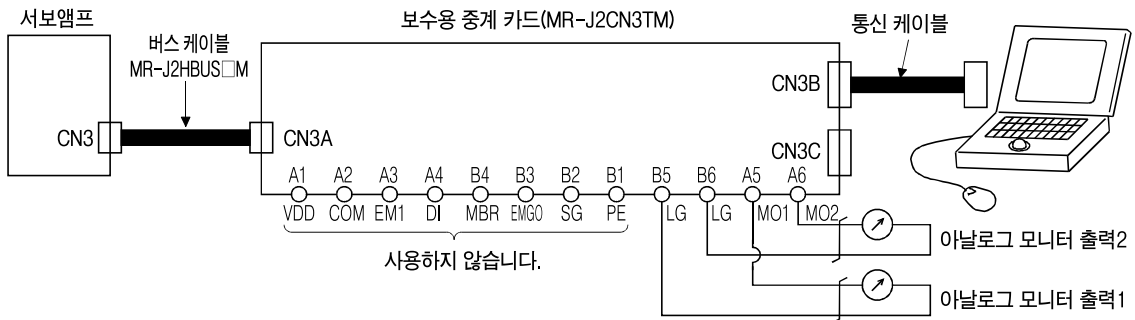
13.1.7

(MR-J2CN3TM)

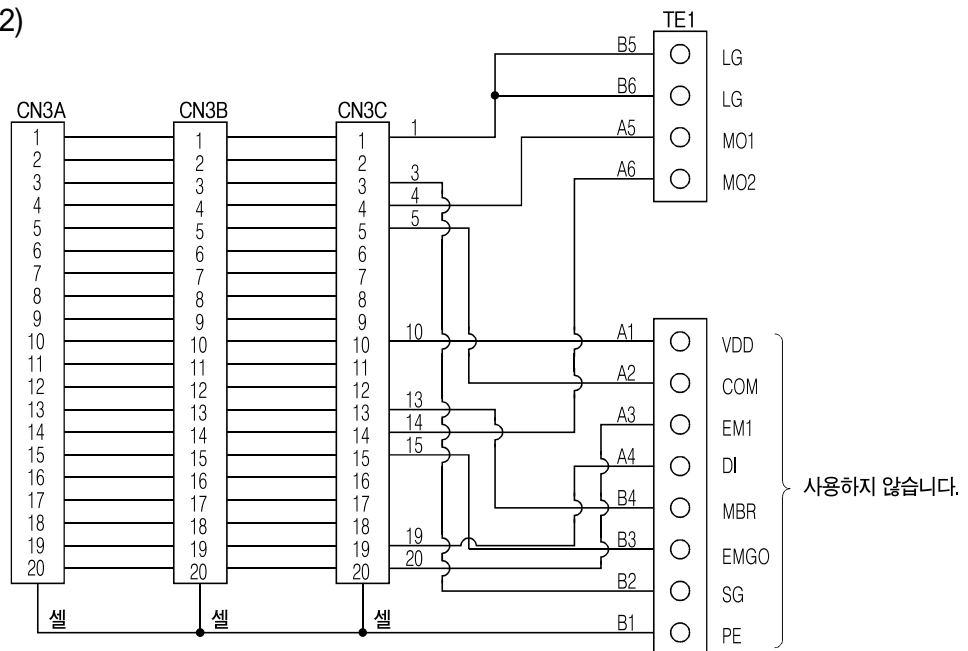


(1)

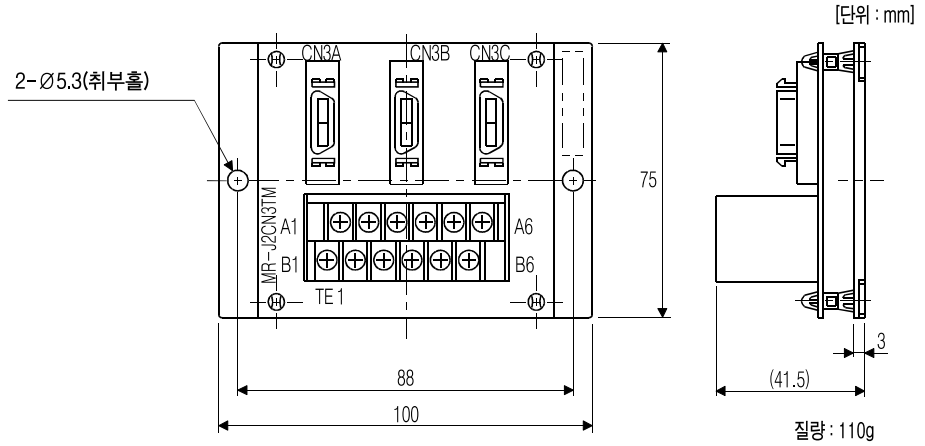
(MR-J2CN3TM) PC



(2)



(3)



(4) (MR-J2HBUS M)

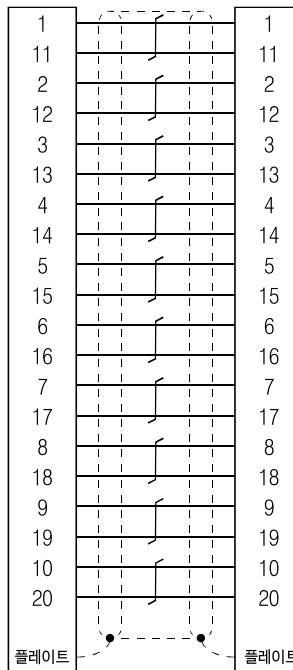
형명 : MR - J 2 H B U S □ M

기호	케이블 길이[m]
05	0.5
2	2
5	5

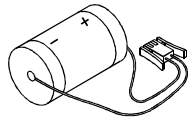
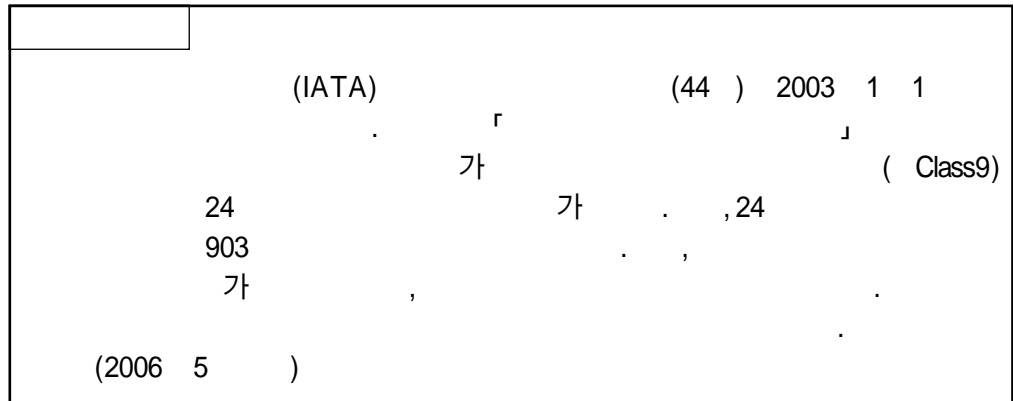
MR-J2HBUS05M  
MR-J2HBUS1M  
MR-J2HBUS5M

10120-6000EL(컨넥터)  
10320-3210-000(셸킷)

10120-6000EL(컨넥터)  
10320-3210-000(셸킷)



13.1.8 (MR-BAT · A6BAT)



13.1.9 MR Configurator( - )

MR Configurator( - MRZJW3 - SETUP151 E1 )  
 , PC .

(1)

	RS - 232C
(bps)	57600 · 38400 · 19200 · 9600
	(PC .)
	ON · ABS
	VC
	JOG

(2)

(a)

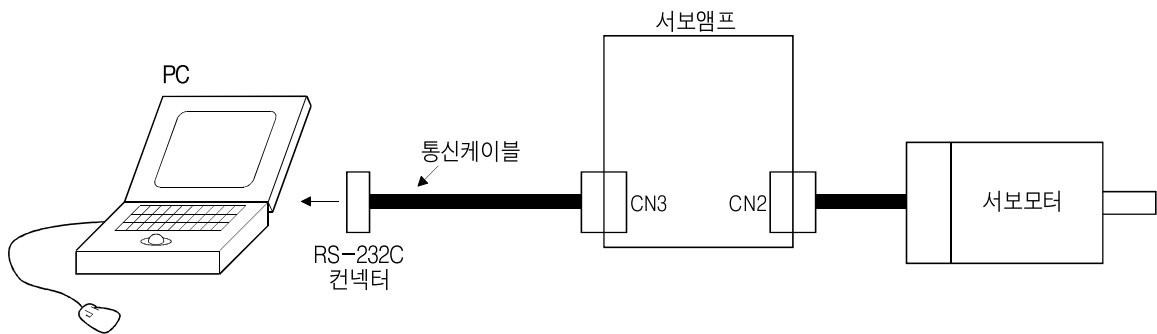
MR Configurator( )

	( 1 )
( 2 ) PC	Windows 95, Windows 98, Windows Me, Windows NT Workstation 4.0, Windows 2000 Professional IBM PC/AT : Pentium 133MHz (Windows 95, Windows 98, Windows NT Workstation 4.0, Windows 2000 Professional) Pentium 150 MHz (Windows Me) : 16MB (Windows 95), 24MB (Windows 98) 32MB (Windows Me, Windows NT Workstation 4.0, Windows 2000Professional) : 30MB
OS	Windows 95, Windows 98, Windows Me, Windows NT Workstation 4.0, Windows 2000 Professional
	800 × 600 , High Color(16bit) 가가 . 가 .
	가 .
	가 . ,
	가 .
	MR - CPCATCBL3M 13.15
RS - 232C/RS - 422	RS - 422 -

1. Windows, Windows NT Microsoft Corporation . Pentium Intel Corporation  
2. , MR Configurator( )가 가 .

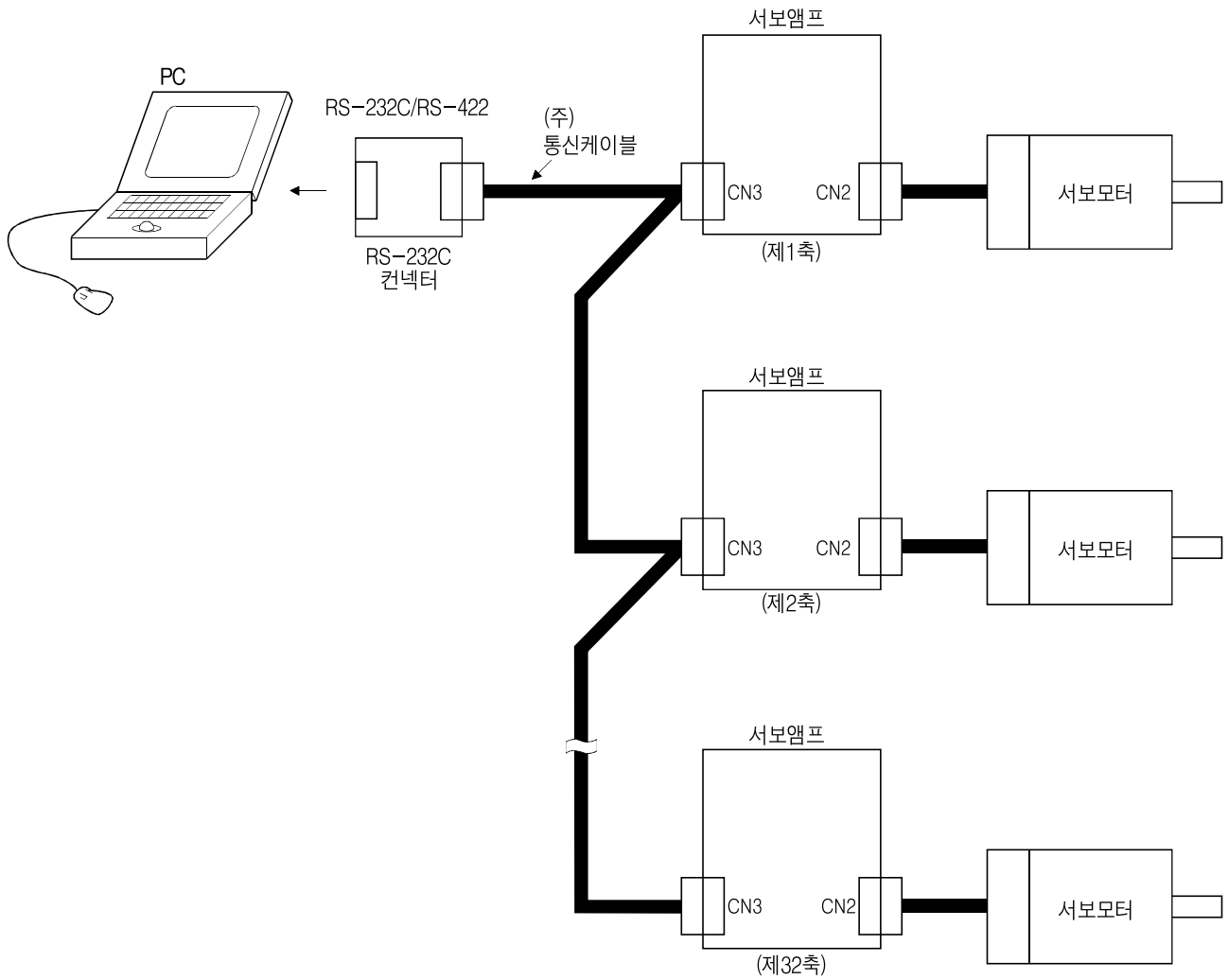
(a)

RS - 232C



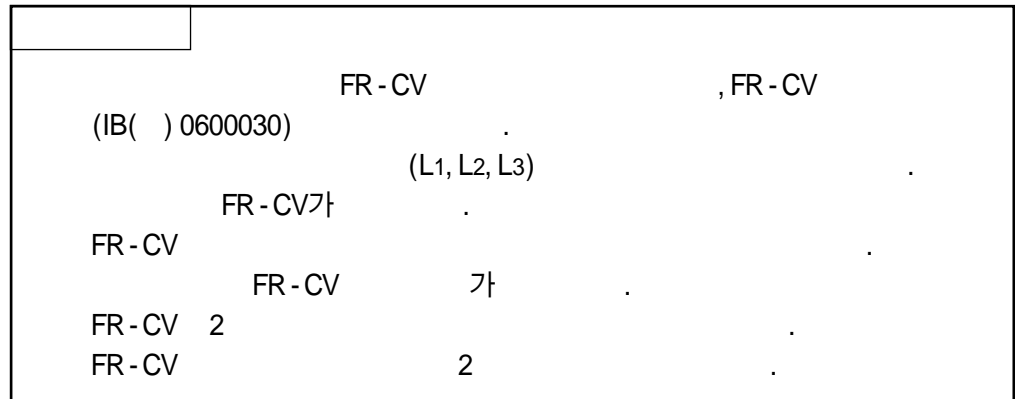


RS-422  
32



14.1.1

13.1.10



No.0 "01"

(1)

FR - CV 750W~22kW

FR - CV

(a) FR - CV 1 6

(b) FR - CV [W] FR - CV [W] × 2

(c) , FR - CV [A]

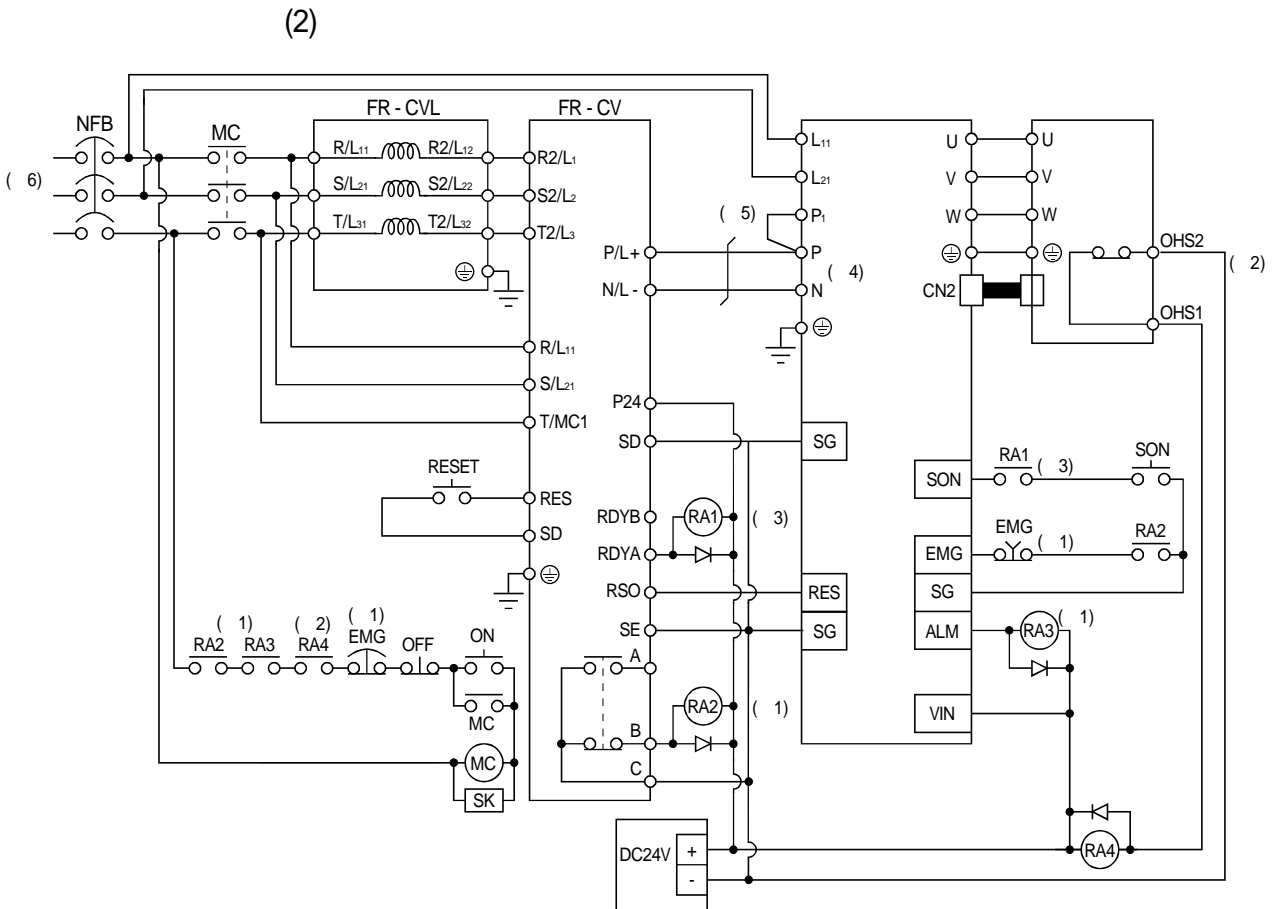
(d) FR - CV 가 [W]

	FR-CV-						
	7.5K	11K	15K	22K	30K	37K	55K
	6						
가 [kW]	3.75	5.5	7.5	11	15	18.5	27.5
가 [A]	33	46	61	90	115	145	215
[kW]	3.5	5	7	11	15	15	22

FR - CV

(FR - CVL)

FR - CV - 7.5K (- AT)	FR - CVL - 7.5K
FR - CV - 11K (- AT)	FR - CVL - 11K
FR - CV - 15K (- AT)	FR - CVL - 15K
FR - CV - 22K (- AT)	FR - CVL - 22K
FR - CV - 30K (- AT)	FR - CVL - 30K
FR - CV - 37K	FR - CVL - 37K
FR - CV - 55K	FR - CVL - 55K



- ( ) 1. •FR - CV  
 2. FR - CV가 ON  
 3. 7kW (3.5kW : P - D , 5k - 7kW : PC )  
 4. 11k~22kW P - P1  
 5. 1.3  
 6.

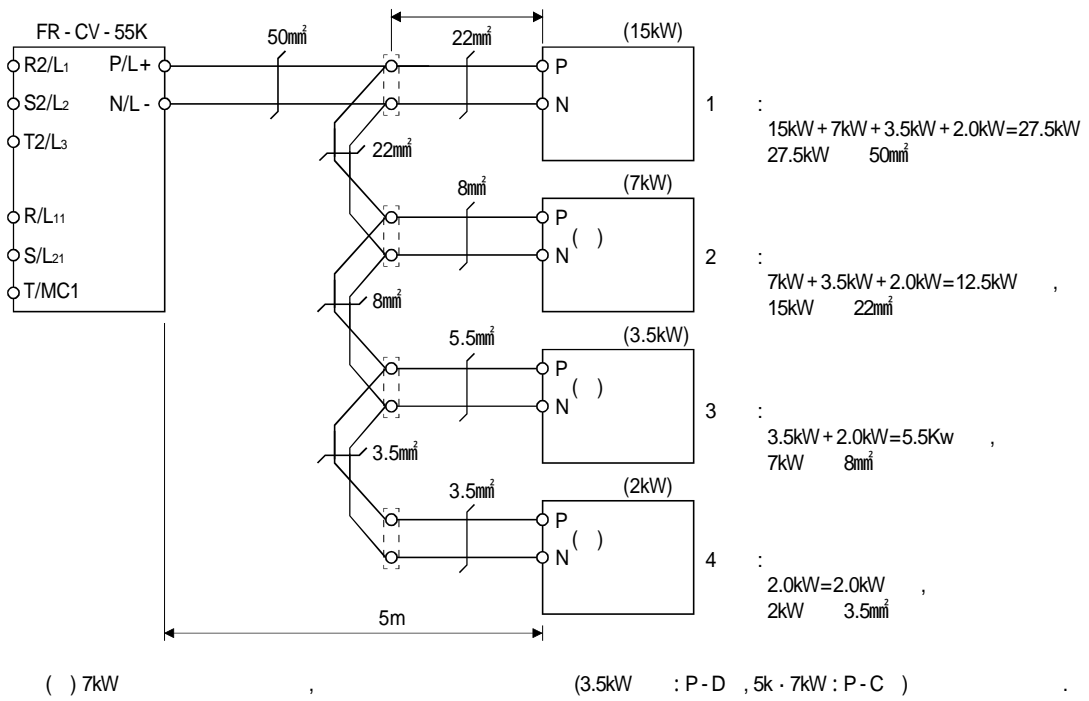
(3)  
 (a)  
 P - P, N - N  
 FR - CV (P, N )  
 600V

[kW]	[mm <sup>2</sup> ]
1	2
2	3.5
5	5.5
7	8
11	14
15	22
22	50

	[mm <sup>2</sup> ]
FR - CV - 7.5K~FR - CV - 15K	14
FR - CV - 22K · FR - CV - 30K	22
FR - CV - 37K · FR - CV - 55K	38

(b)

P, N



(4)

(a) FR - CVL  
FR - BAL, FR - BEL

(b) FR - CV ( ) 가  
(AM ) 가  
(FR - BIF)  
(FR - BSF01, FR - BLF) 가

(c) FR - CV 5m ,

(6)

FR-CV-		7.5K	11K	15K	22K	30K	37K	55K
가	[kW]	3.75	5.5	7.5	11	15	18.5	27.5
	[kW]	3.5	5	7	11	15	15	22
가	[A]	33	46	61	90	115	145	215
		300% 60s ( 1 )						
		100%						
		200~220V 50Hz, 200~230V 60Hz						
		170~242V 50Hz, 170~253V 60Hz						
		±5%						
( 2 )	[kVA]	17	20	28	41	52	66	100
(JEM 1030),		(IP00),						
		-10 ~+50 ( )						
		90%RH ( 가 )						
		( 가 . 가 . 가 )						
		1000m , 5.9m/s <sup>2</sup> (JISC 0040 )						
		30AF 30A	50AF 50A	100AF 75A	100AF 100A	225AF 125A	225AF 125A	225AF 175A
		S - N20	S - N35	S - N50	S - N65	S - N95	S - N95	S - N125

) 1. FR - CV  
2. 가

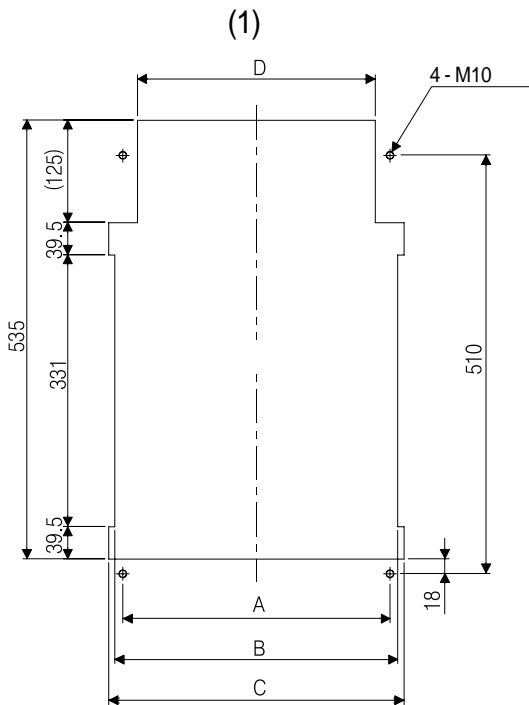
12.1

13.1.11 (MR-JACN)

가

가

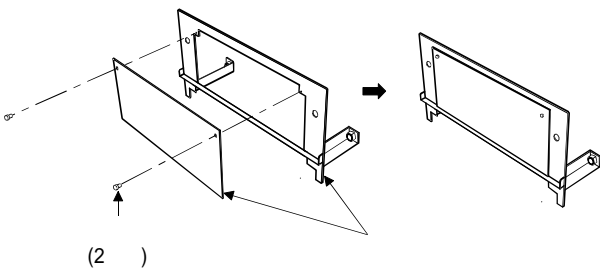
( 4 )



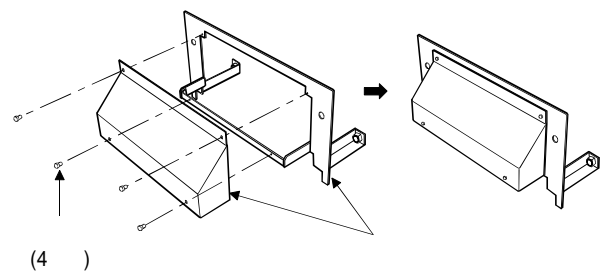
[ :mm]

	A	B	C	D	
MR-JACN15K	236	255	270	203	MR-J2S-11KA MR-J2S-15KA
MR-JACN22K	326	345	360	290	MR-J2S-22KA

(2)

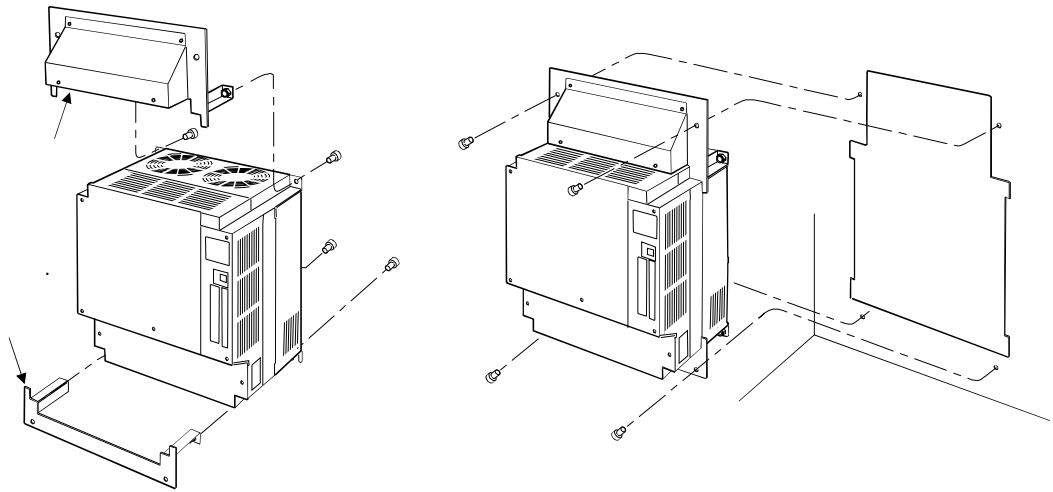


MR-JACN15K



MR-JACN22K

(3)

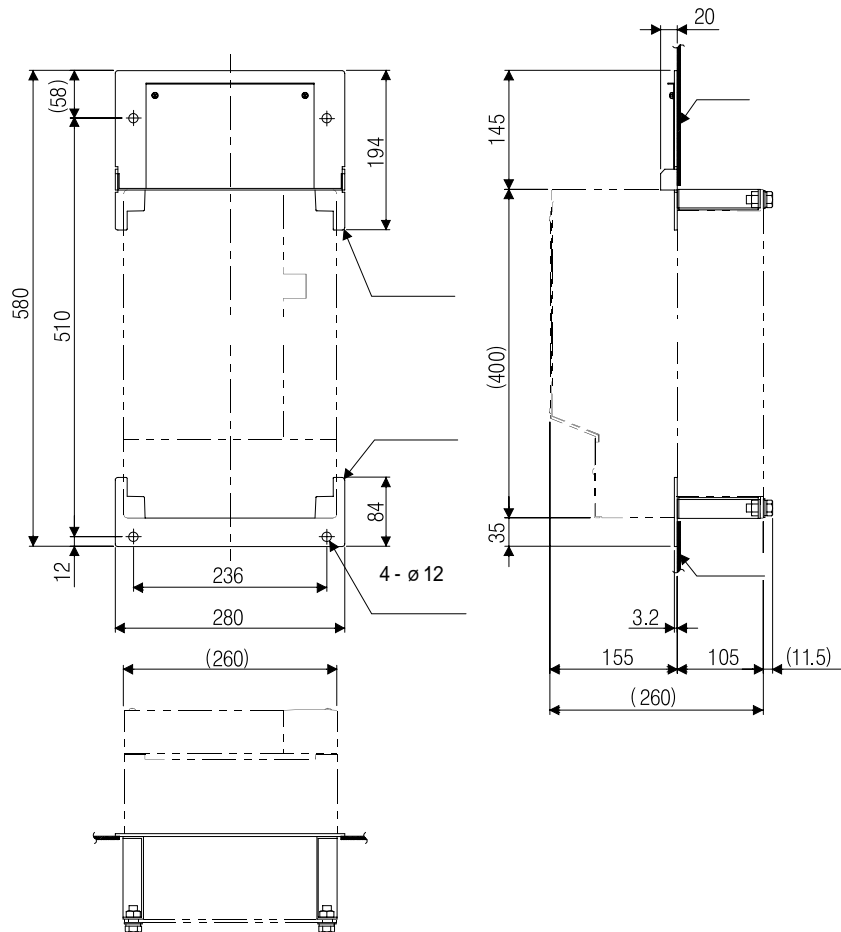


a.

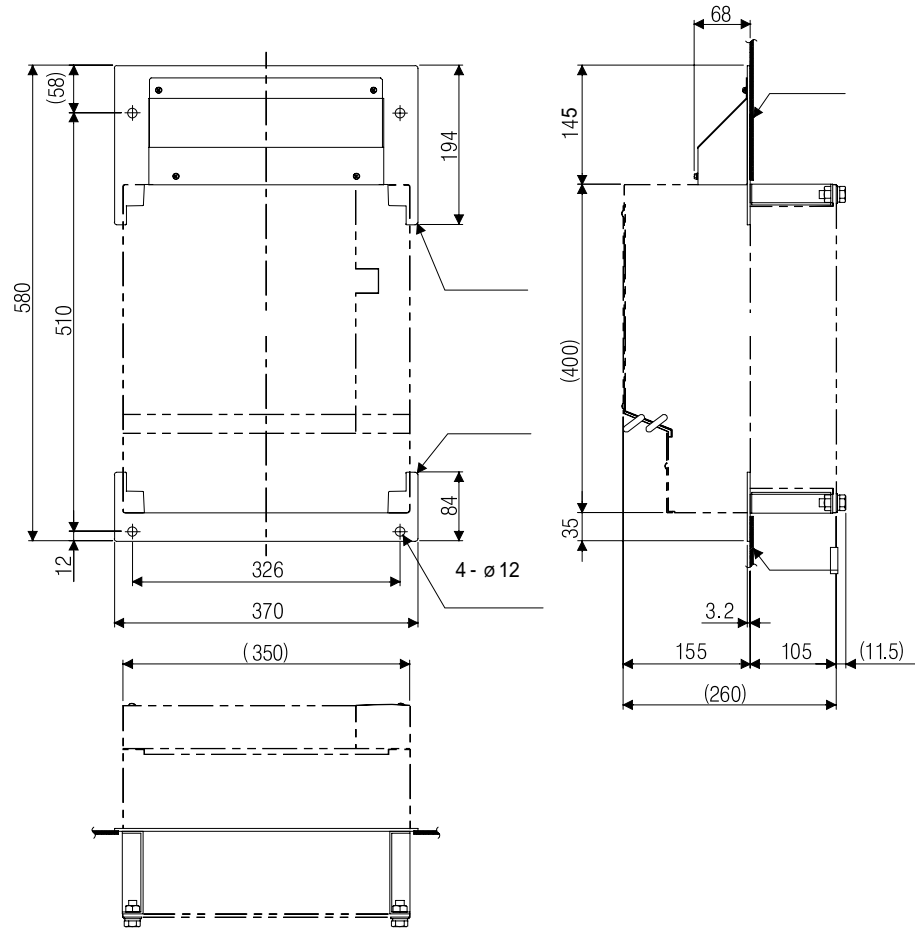
b.

(4)

(a) MR - JACN15K(MR - J2S - 11KA , MR - J2S - 15KA )



(b) MR - JACN22K(MR - J2S - 22KA )



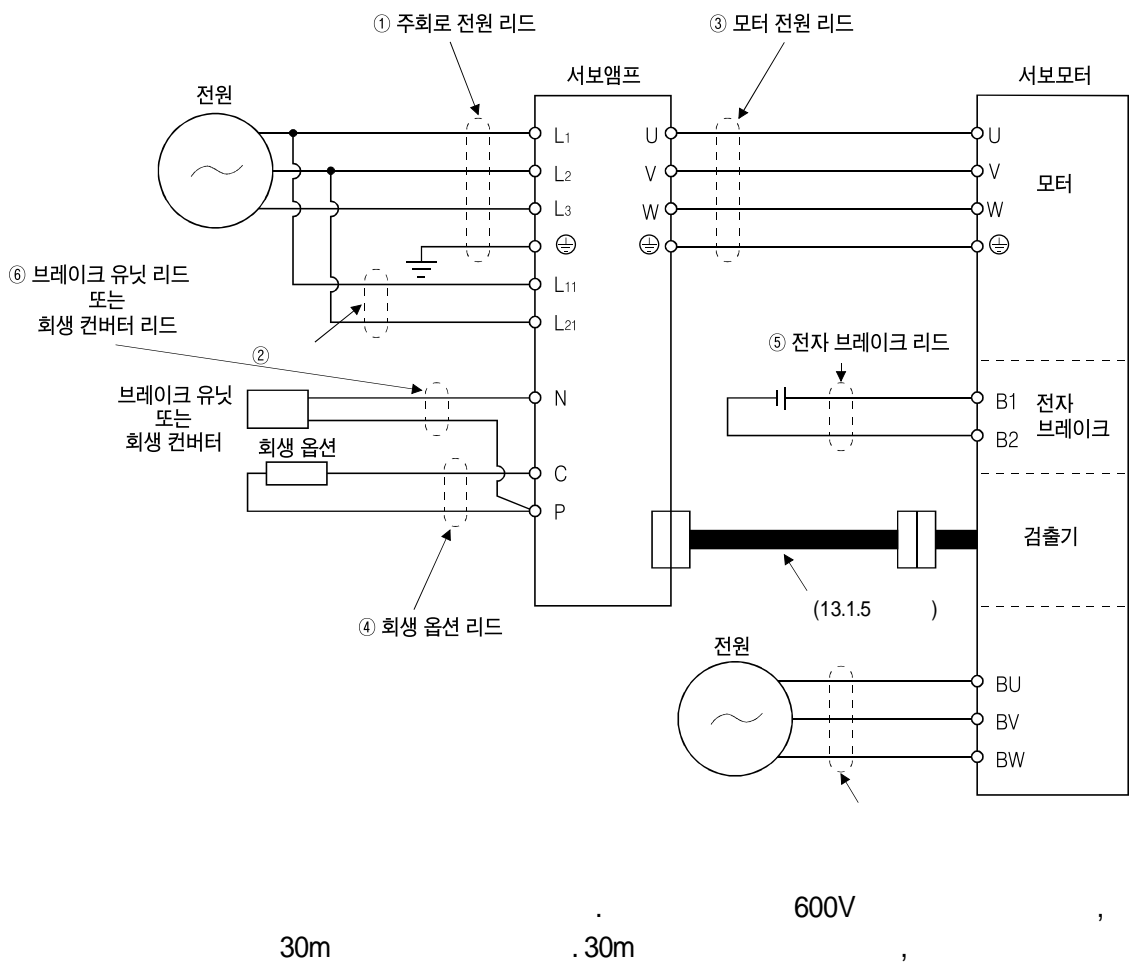


13. 2

EN UL/C - UL(CSA)

13.2.1

(1)



600V

30m

.30m

(a · b · c)

MR - J2S - 100A

TE2

( 13.2)

3. 11

3. 8

UL/C - UL(CSA)

UL

60

13.1

	[mm <sup>2</sup> ] ( 1 )					
	L1 · L2 · L3 · ⊖	L11 · L21	U · V · W · ⊖	P · C	B1 · B2	BU · BV · BW
MR - J2S - 10A(1)	2(AWG 14) : a	1.25(AWG 16)	1.25(AWG 16) : a	2(AWG 14) : a	1.25(AWG 16)	/
MR - J2S - 20A(1)						
MR - J2S - 40A(1)						
MR - J2S - 60A						
MR - J2S - 70A						
MR - J2S - 100A						
MR - J2S - 200A	3.5(AWG 12) : b	1.25(AWG 16)	3.5(AWG 12) : b	2(AWG 14) : a	1.25(AWG 16)	/
MR - J2S - 350A	5.5(AWG 10) : b		( 2 )5.5(AWG 10) : b			
MR - J2S - 500A			5.5(AWG 10) : b			
MR - J2S - 700A	8(AWG 8) : c		8(AWG 8) : c			
MR - J2S - 11KA	14(AWG 6) : d	22(AWG 4) : e	5.5(AWG 10) : b	2(AWG 14)		
MR - J2S - 15KA	22(AWG 4) : e	30(AWG 2) : f				
MR - J2S - 22KA	50(AWG 1/0) : g	60(AWG 2/0) : g				

- 1. 13.2
- 2. HC - RFS203 3.5mm<sup>2</sup>가

(FR - BU), (FR - RC) ( )

	[mm <sup>2</sup> ]
FR - BU - 15K	3.5(AWG 12)
FR - BU - 30K	5.5(AWG 10)
FR - BU - 55K	14(AWG6)
FR - RC - 15K	14(AWG6)
FR - RC - 30K	14(AWG6)
FR - RC - 55K	22(AWG4)

13.2

a	32959	47387	AMP	( 1 · 2 ) f	38 - S6	: YPT - 60 - 21 : TD - 124 · TD - 112	
b	32968	59239				: YF - 1 · E - 4 : YNE - 60 - 1 : TD - 124 · TD - 112	
c	FVD8 - 5	: YF - 1 · E - 4 : YNE - 38 : DH - 111 · DH - 121		g	( 1 ) R60 - 8	NOP60 NOM60	NICHIFU
d	FVD14 - 6	: YF - 1 · E - 4 : YNE - 38 : DH - 112 · DH - 122				: YDT - 60 - 21 : TD - 125 · TD - 113	
e	FVD22 - 6	: YF - 1 · E - 4 : YNE - 38 : DH - 113 · DH - 123				: YF - 1 · E - 4 : YET - 60 - 1 : TD - 125 · TD - 113	

- 1.
- 2. 가



13.2.2

1 1

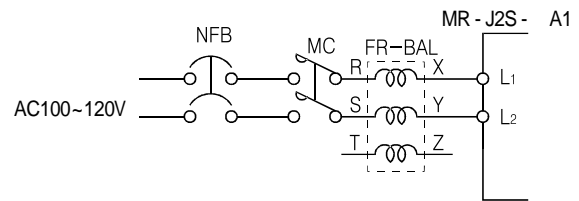
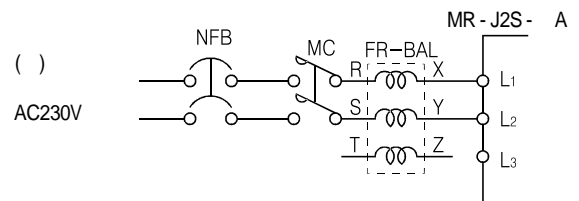
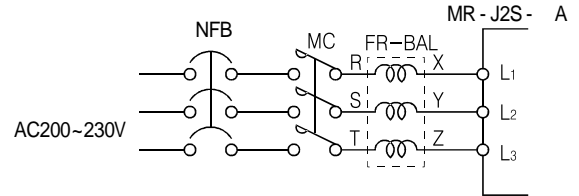
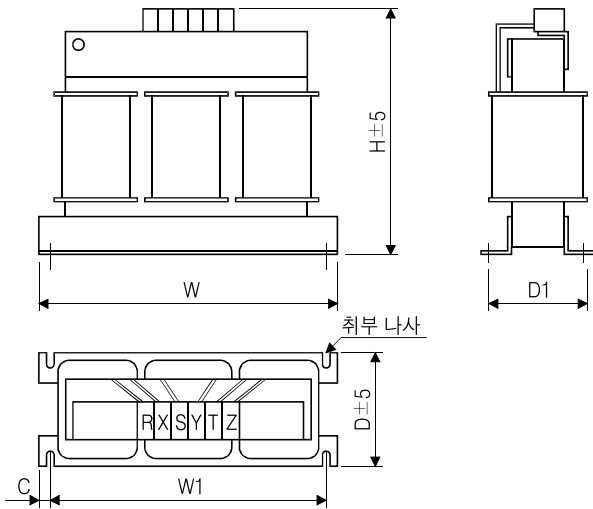
			[A]	[V]		
MR - J2S - 10A(1)	30A	5A	K5	10	AC250 S - N10	
MR - J2S - 20A	30A	5A	K5	10		
MR - J2S - 40A · 20A1	30A	10A	K5	15		
MR - J2S - 60A · 40A1	30A	15A	K5	20		
MR - J2S - 70A	30A	15A	K5	20		
MR - J2S - 100A	30A	15A	K5	25		
MR - J2S - 200A	30A	20A	K5	40		S - N18
MR - J2S - 350A	30A	30A	K5	70		S - N20
MR - J2S - 500A	30A	50A	K5	125		S - N35
MR - J2S - 700A	100A	75A	K5	150		S - N50
MR - J2S - 11KA	100A	100A	K5	200		S - N65
MR - J2S - 15KA	225A	125A	K5	250		S - N95
MR - J2S - 22KA	225A	175A	K5	300		S - N125

13.2.3

90%

90%

가

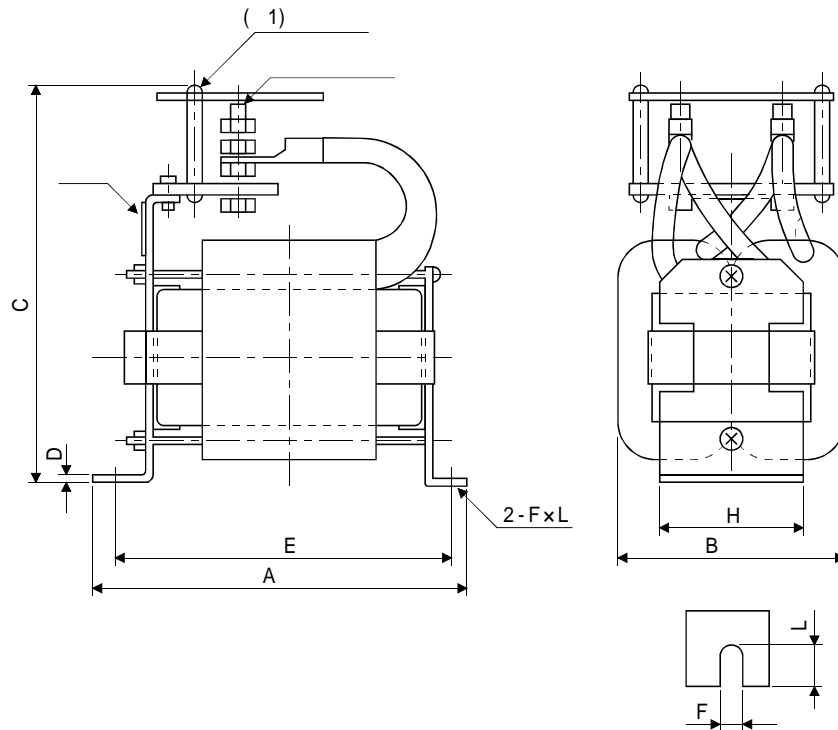


AC230V, L1·L2, L3

	AC	[mm]								[kg]
		W	W1	H	D	D1	C			
MR - J2S - 10A(1)	FR - BAL - 0.4K	135	120	115	59	45 <sup>0</sup> <sub>.25</sub>	7.5	M4	M3.5	2.0
MR - J2S - 20A										
MR - J2S - 40A	FR - BAL - 0.75K	135	120	115	69	57 <sup>0</sup> <sub>.25</sub>	7.5	M4	M3.5	2.8
MR - J2S - 20A1										
MR - J2S - 60A	FR - BAL - 1.5K	160	145	140	71	55 <sup>0</sup> <sub>.25</sub>	7.5	M4	M3.5	3.7
MR - J2S - 70A										
MR - J2S - 40A1										
MR - J2S - 100A	FR - BAL - 2.2K	160	145	140	91	75 <sup>0</sup> <sub>.25</sub>	7.5	M4	M3.5	5.6
MR - J2S - 200A										
MR - J2S - 350A	FR - BAL - 3.7K	220	200	192	90	70 <sup>0</sup> <sub>.25</sub>	10	M5	M4	8.5
MR - J2S - 500A										
MR - J2S - 700A	FR - BAL - 7.5K	220	200	194	120	100 <sup>0</sup> <sub>.25</sub>	10	M5	M5	14.5
MR - J2S - 11KA										
MR - J2S - 15KA	FR - BAL - 11K	280	255	220	135	100 <sup>0</sup> <sub>.25</sub>	12.5	M6	M6	19
MR - J2S - 22KA										
MR - J2S - 15KA	FR - BAL - 15K	295	270	275	133	110 <sup>0</sup> <sub>.25</sub>	12.5	M6	M6	27
MR - J2S - 22KA										
MR - J2S - 15KA	FR - BAL - 22K	290	240	301	199	170±5	25	M8	M8	35
MR - J2S - 22KA										
MR - J2S - 22KA	FR - BAL - 30K	290	240	301	219	190±5	25	M8	M8	43

13.2.4 DC

95%



- ) 1.
- 2. DC

	DC	[mm]										[kg]	[mm <sup>3</sup> ]
		A	B	C	D	E	F	L	G	H			
MR - J2S - 11KA4	FR - BEL - 15K	170	93	170	2.3	155	6	14	M8	56	M5	3.8	22(AWG4)
MR - J2S - 15KA4	FR - BEL - 22K	185	119	182	2.6	165	7	15	M8	70	M6	5.4	30(AWG2)
MR - J2S - 22KA4	FR - BEL - 30K	185	119	201	2.6	165	7	15	M8	70	M6	6.7	60(AWG1/0)

13.2.5

( ) DI - 1)	( ) ( ) : G2A , MY
( ) DO - 1)	DC12V DC24V 40mA ( ) : MY

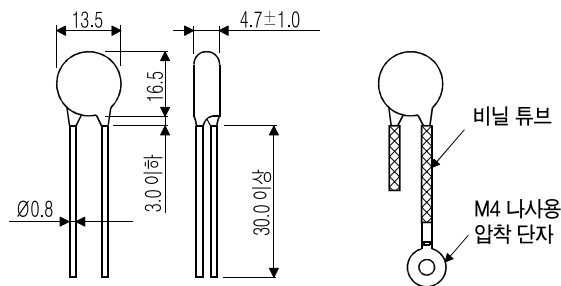
13.2.6

가

		(耐量)	(耐量)				( )	V1mA ( )
AC[Vma]	DC[V]	[A]	[J]	[W]	[A]	[V]	[pF]	[V]
140	180	( ) 500/	5	0.4	25	360	300	200 (198~242)

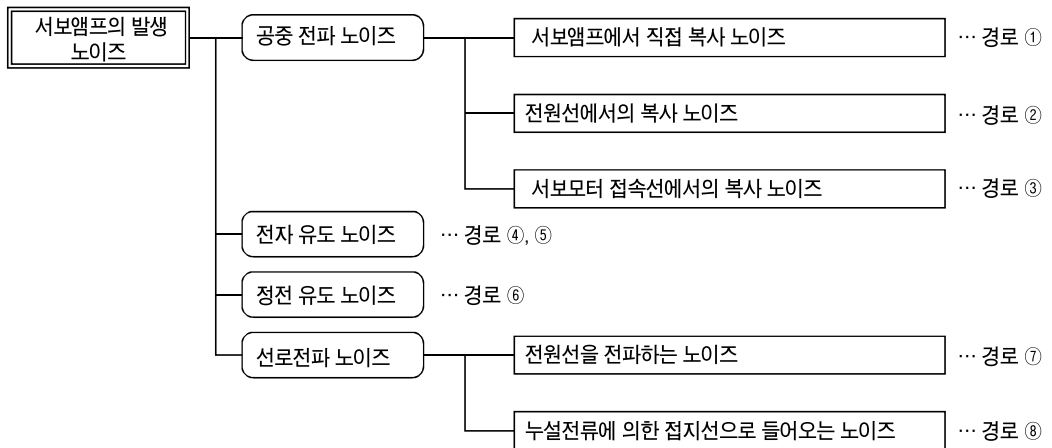
( ) 1 : 8×20μs

( ) ERZV10D221( )  
TNR - 10V221K( )  
[mm](ERZ - C10DK221)

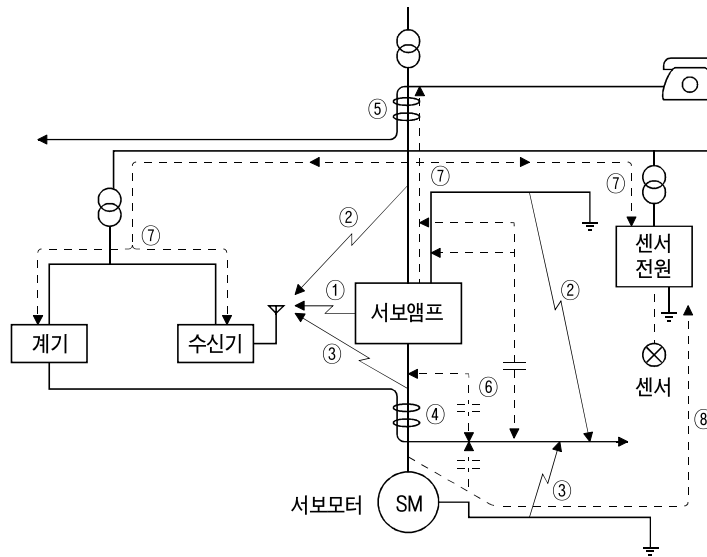


13.2.7

가 .  
 .  
 (Chopping)  
 가 ,  
 .  
 (1)  
 (a)  
 . ( ) ,  
 .  
 SD ,  
 . 1 .(3.10 )  
 (b)  
 가 ( , ,  
 ) 가 , 가  
 가 .  
 .  
 .  
 .  
 (c)  
 ( . )







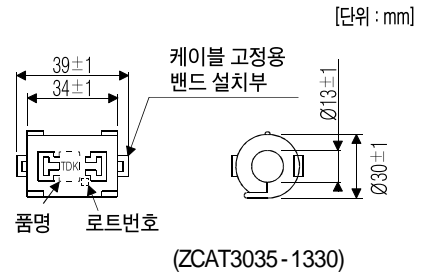
	가 (1) (2) (3) ( ) (4) (5)
	가 (1) (2) (3) ( ) (4)
	가 가 (1) ( ) (FR - BIF) (2) (FR - BSF01 · FR - BLF)
	가 가 가 가 가

(2)

(a)

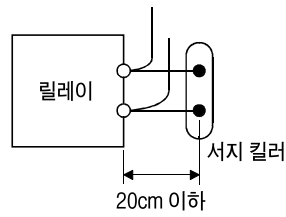
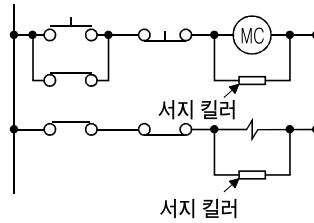
가 , 가  
 TDK ZCAT3035 - 1330 ESD - SR - 25  
 가  
 ZCAT3035 - 1330(TDK )

임피던스[Ω]	
10~100MHz	100~500MHz
80	150



(b)

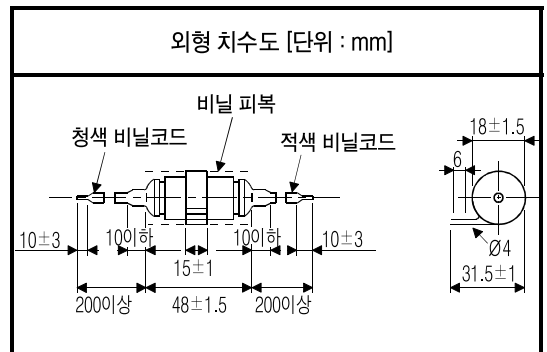
AC · AC · AC



( ) 972A - 2003 50411

( ( ) )..... AC200V)

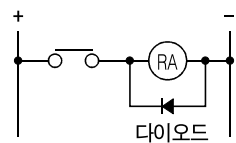
정격 전압 AC[V]	C[μF]	R[Ω]	테스트 전압 AC[V]
200	0.5	50(1W)	T-C간 1000(1~5s)



,DC · DC

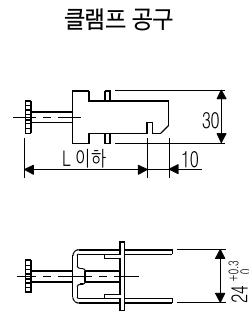
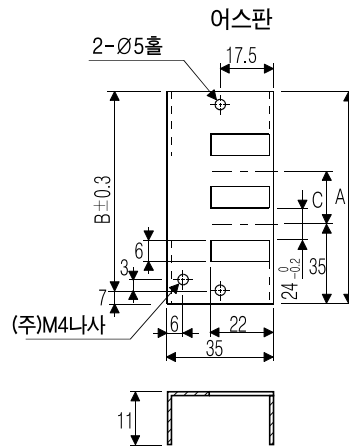
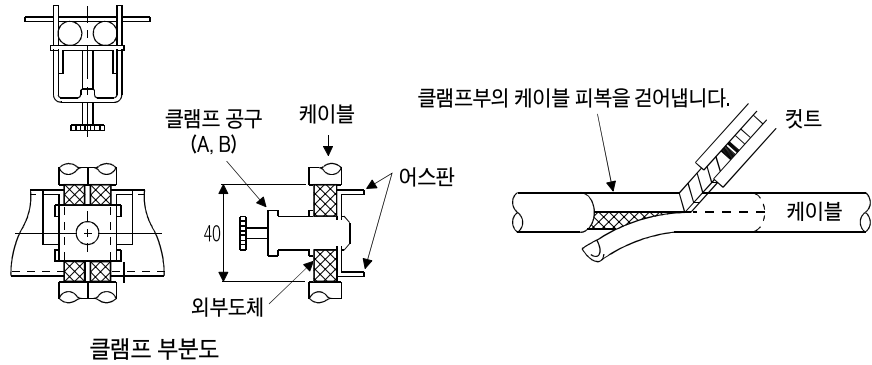
:  
:

4  
2



(c) (AERSBAN - 吨SET) SD

가  
가



(주) 접지용 나사홀입니다. 제어반의 어스판에 접속 하십시오.

	A	B	C	
AERSBAN - DSET	100	86	30	가 2
AERSBAN - ESET	70	56		가 1

	L
A	70
B	45

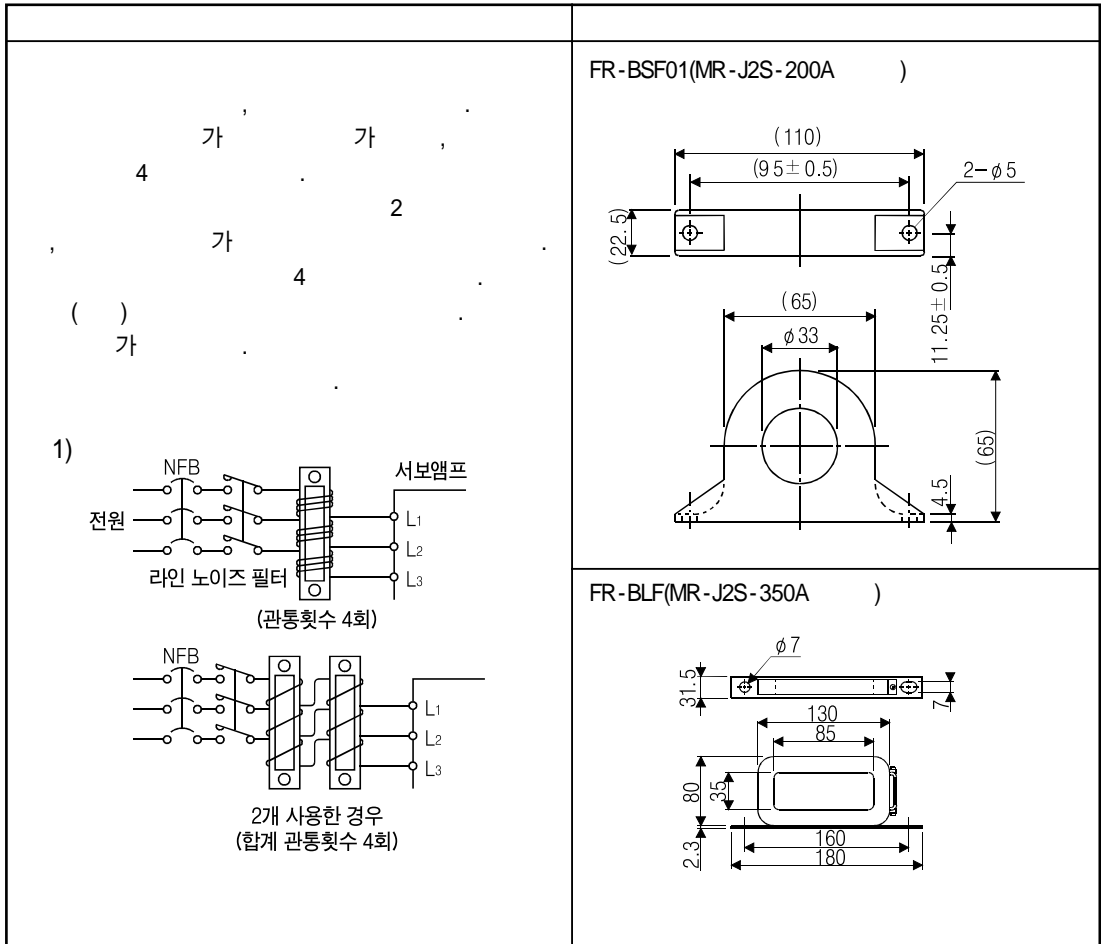
(d) (FR-BLF · FR-BSF01)

가

( )

0.5MHz~5MHz

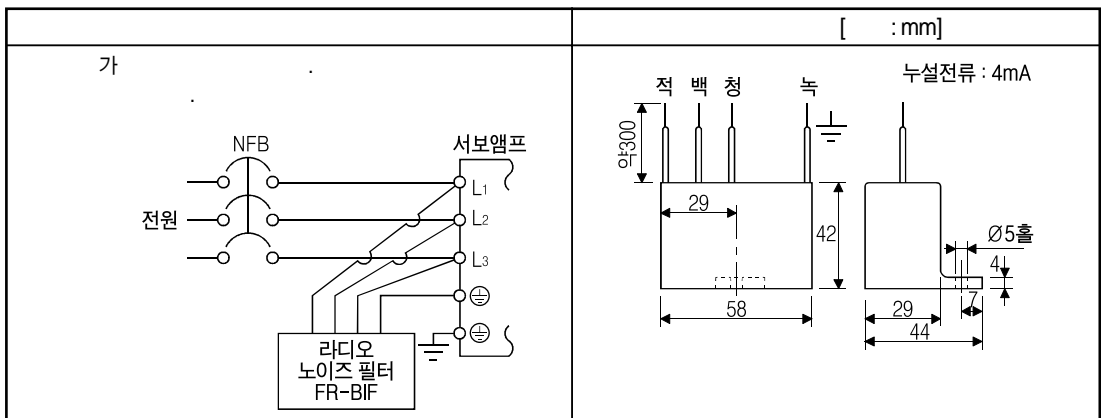
가



(e) (FR-BIF) ...

가

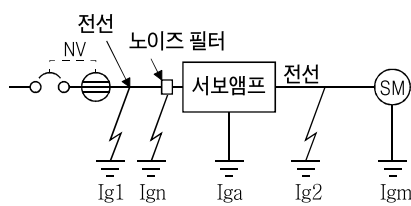
10MHz



13.2.8

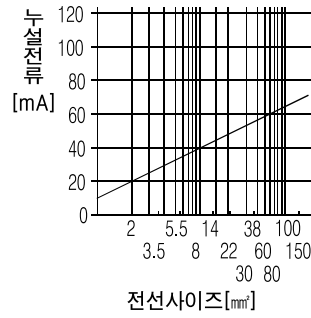
(1) AC PWM (Choppr) 가 .  
 가 ,  
 ( 30cm)

$$10 \cdot \{I_{g1} + I_{gn} + I_{ga} + K \cdot (I_{g2} + I_{gm})\} [mA] \dots \dots \dots (13.1)$$



		K
	NV - SP NV - SW NV - CP NV - CW NV - HW	1
	BV - C1 NFB NV - L	3

- Ig1 : ( 13.1 )
- Ig2 : ( 13.1 )
- Ign : (FR - BIF 1 4.4mA)
- Iga : ( 13.5 )
- Igm : ( 13.4 )



13.1 CV

1km

(I<sub>g1</sub>, I<sub>g2</sub>)

13.4

(I<sub>gm</sub>)

[kW]	[mA]
0.05~0.5	0.1
0.6~1.0	0.1
1.2~2.2	0.2
3 · 3.5	0.3
5	0.5
7	0.7
11	1.0
15	1.3
22	2.3

13.5

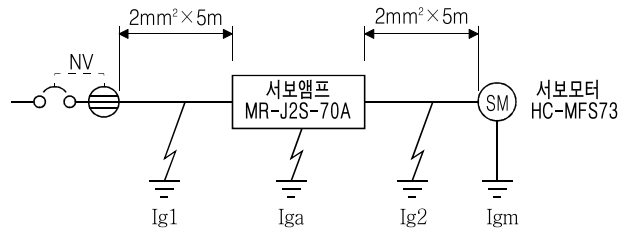
(I<sub>ga</sub>)

[kW]	[mA]
0.1~0.6	0.1
0.7~3.5	0.15
5 · 7	2
11 · 15	5.5
22	7

13.6

	[mA]
MR - J2S - 10A~MR - J2S - 350A MR - J2S - 10A1~MR - J2S - 40A1	15
MR - J2S - 500A	30
MR - J2S - 700A	50
MR - J2S - 11KA~MR - J2S - 22KA	100

(2)



(13.1)

$$I_{g1} : 20 \cdot \frac{5}{1000} = 0.1[\text{mA}]$$

$$I_{g2} : 20 \cdot \frac{5}{1000} = 0.1[\text{mA}]$$

$$I_{gn} : 0( \quad . )$$

$$I_{ga} : 0.1[\text{mA}]$$

$$I_{gm} : 0.1[\text{mA}]$$

(13.1)

$$I_g = 10 \cdot \{0.1+0+0.1+1 \cdot (0.1+0.1)\} = 4[\text{mA}]$$

(I<sub>g</sub>)가 4.0[mA]

$$NV - SP/SW/CP/CW/HW$$

$$15[\text{mA}]$$

13.2.9 EMC

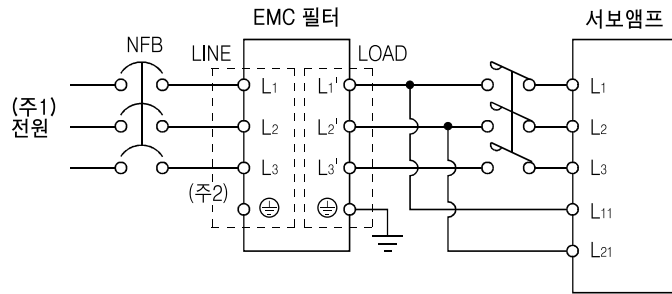
EN EMC 가

(1)

		[mA]	[kg]
MR-J2S-10A ~ MR-J2S-100A MR-J2S-10A1 ~ MR-J2S-40A1	SF1252	38	0.75
MR-J2S-200A · MR-J2S-350A	SF1253	57	1.37
MR-J2S-500A	( )HF3040A - TM	1.5	5.5
MR-J2S-700A	( )HF3050A - TM	1.5	6.7
MR-J2S-11KA	( )HF3060A - TMA	3.0	10.0
MR-J2S-15KA	( )HF3080A - TMA	3.0	13.0
MR-J2S-22KA	( )HF3100A - TMA	3.0	14.5

( ) ( ). EMC , 가 ,(EMC 가 )

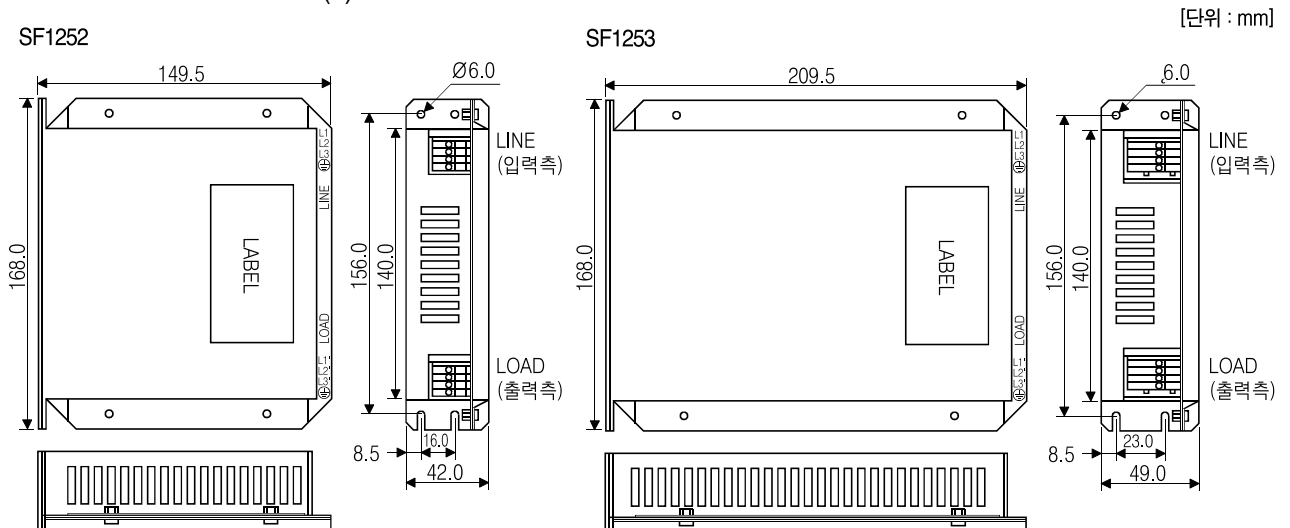
(2)



- ( ) 1. AC230V , L1 · L2 , L3  
AC100~120V , L3
- 2. 가

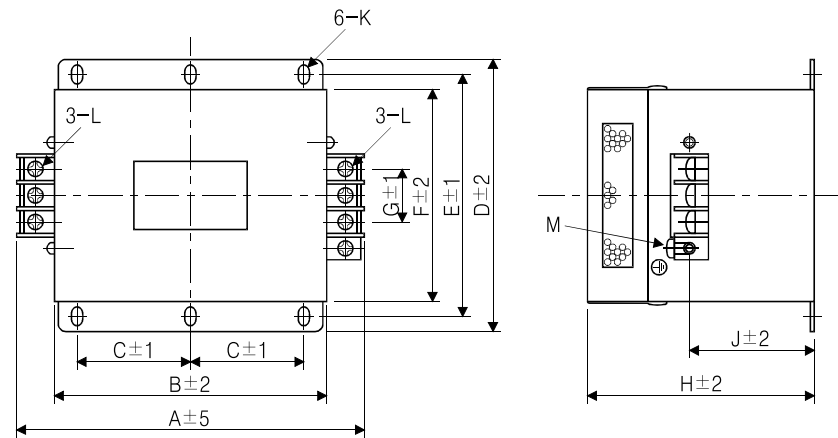
(3)

(a) EMC



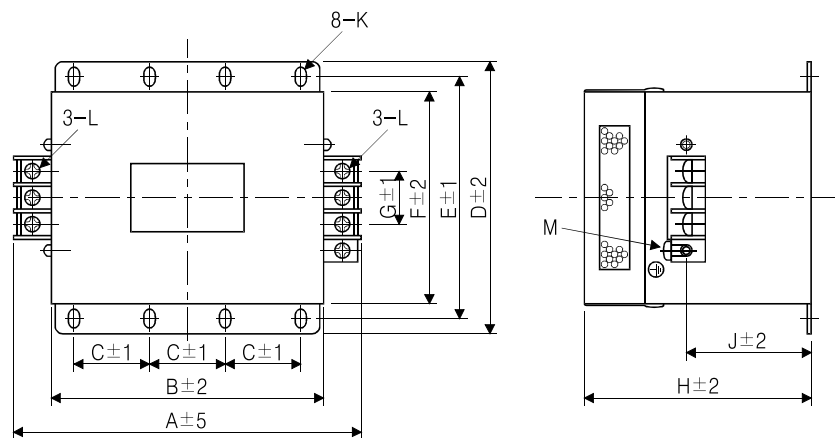


HF3040A-TM · HF3050A-TM · HF3060A-TMA



	[mm]											
	A	B	C	D	E	F	G	H	J	K	L	M
HF3040A - TM	260	210	85	155	140	125	44	140	70	R3.25 8	M5	M4
HF3050A - TM	290	240	100	190	175	160	44	170	100		M6	M4
HF3060A - TMA	290	240	100	190	175	160	44	230	160		M6	M4

HF3080A-TMA · HF3100A-TMA

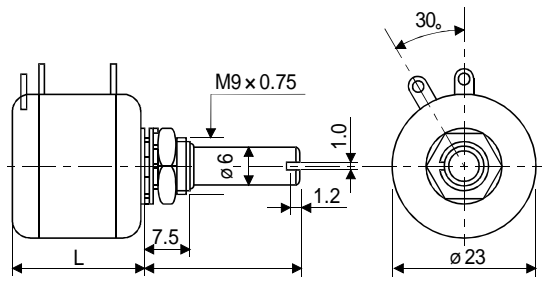


	[mm]											
	A	B	C	D	E	F	G	H	J	K	L	M
HF3080A - TMA	450	350	100	220	200	180	56	210	135	R4.25 12	M8	M6
HF3100A - TMA												



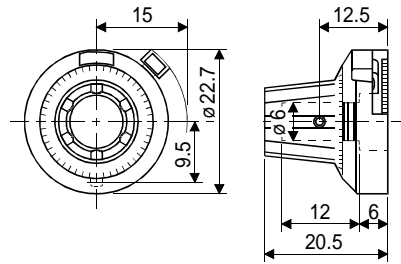
RRS10(M)2K

[ :mm]



23M

[ :mm]

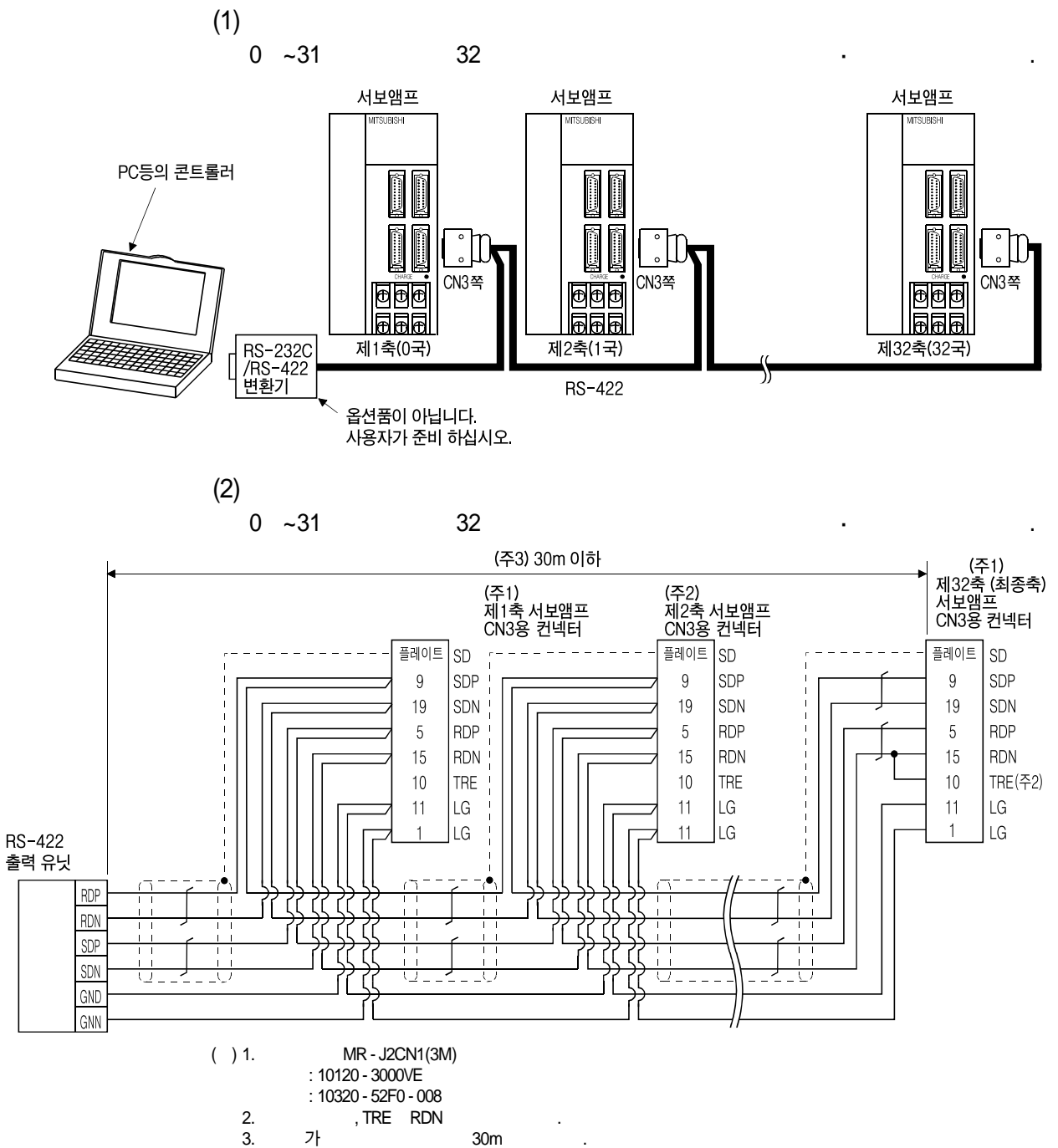


14

RS - 422/RS - 232C 가  
 , RS - 422 RS - 232C  
 RS - 422/RS - 232C No.16 .(14.2.2 )

14. 1

14.1.1 RS-422



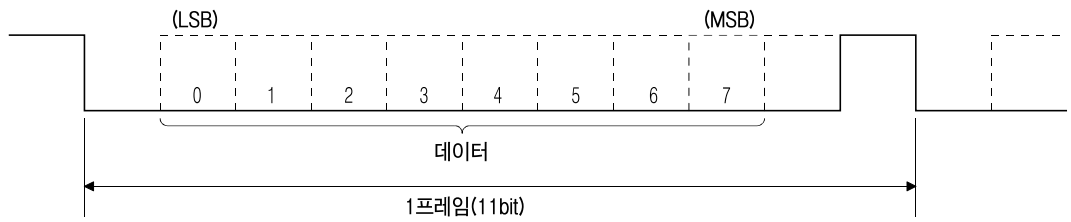


14. 2

14.2.1

(PC ) , ( )

[bps]	9600/19200/38400/57600
	bit 1bit
	bit 8bit
	bit 1bit( )
	bit 1bit
	2



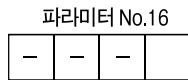
14.2.2

RS - 422/RS - 232C

OFF

(1)

( )

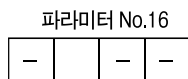


시리얼 통신 보레이트 선택  
 0 : 9600[bps]  
 1 : 19200[bps]  
 2 : 38400[bps]  
 3 : 57600[bps]

(2)

RS - 422/RS - 232C

. RS - 422 RS - 232C

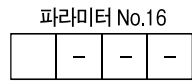


시리얼 통신의 선택  
 0 : RS-232C를 사용합니다.  
 1 : RS-422를 사용합니다.

(3)

( )가

“ 0 ” 800  $\mu$ s , “ 1 ” 800  $\mu$ s



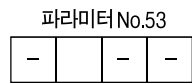
시리얼 통신 응답 딜레이 시간  
 0 : 무효  
 1 : 유효. 800 $\mu$ s 이상의 딜레이 시간후 반송합니다.

(4)

No.15 0~31

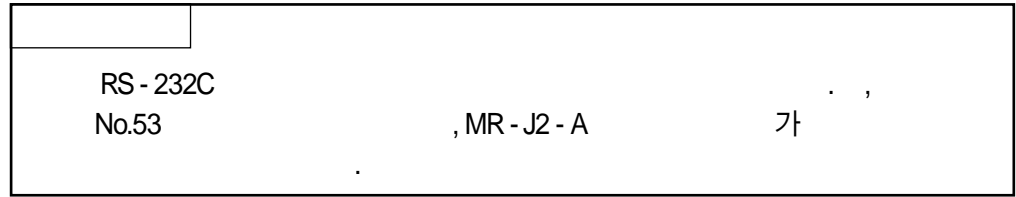
(5)

MR - J2 - A 가 ,  
 No.53 “ ”



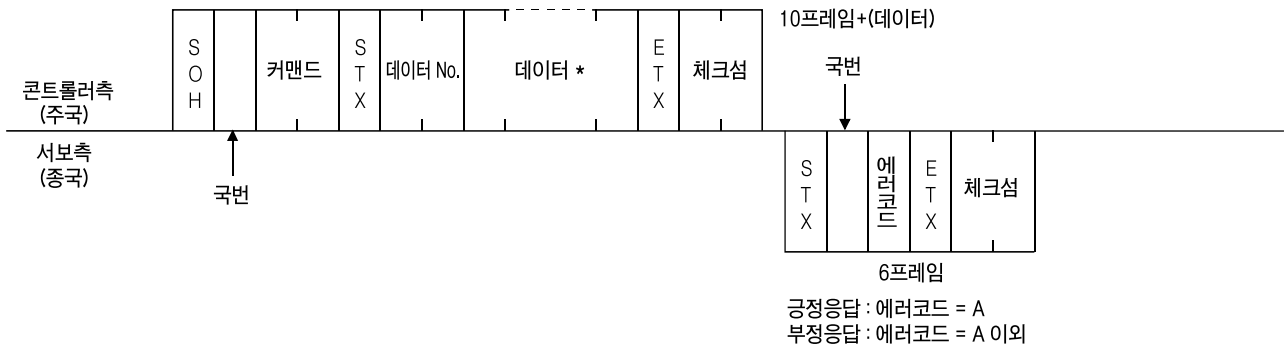
프로토콜의 국번 선택  
 0 : 국번 있음  
 1 : 국번 없음

14. 3

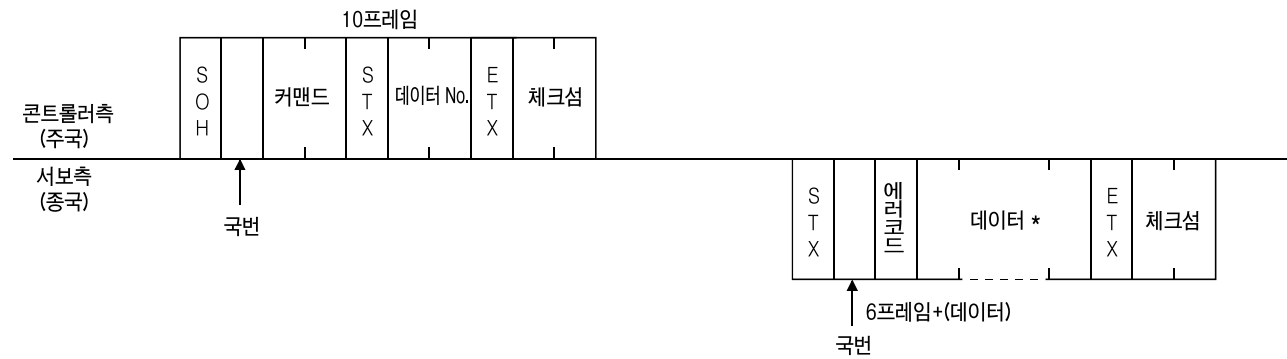


32 , No. 가  
 가 " \* " 가  
 " 0 " 가

(1)

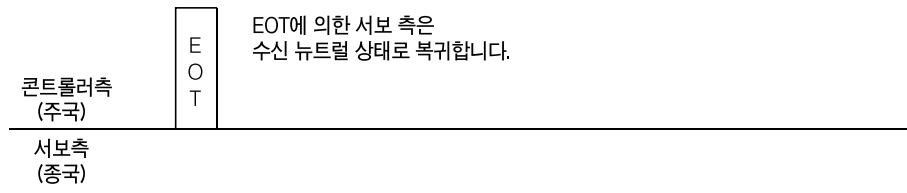


(2)

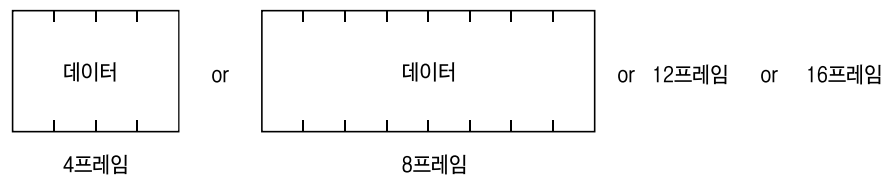




(3)



(4)

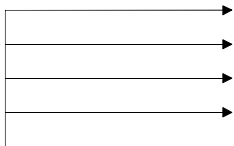


14. 4

(1)

	16 ( )		PC ( )
SOH	01H	start of head( )	ctrl + A
STX	02H	start of text( )	ctrl + B
ETX	03H	end of text( )	ctrl + C
EOT	04H	end of transmission( )	ctrl + D

(2)



b8	0	0	0	0	0	0	0	0
b7	0	0	0	0	1	1	1	1
b6	0	0	1	1	0	0	1	1
b5	0	1	0	1	0	1	0	1

b8 ~ b5	b4	b3	b2	b1
	0	0	0	0
	0	0	0	1
	0	0	1	0
	0	0	1	1
	0	1	0	0
	0	1	0	1
	0	1	1	0
	0	1	1	1
	1	0	0	0
	1	0	0	1
	1	0	1	0
	1	0	1	1
	1	1	0	0
	1	1	0	1
	1	1	1	0
	1	1	1	1

C \ R	0	1	2	3	4	5	6	7
0	NUL	DLE	Space	0	@	P	,	p
1	SOH	DC1	!	1	A	Q	a	q
2	STX	DC2	"	2	B	R	b	r
3	ETX	DC3	#	3	C	S	c	s
4			\$	4	D	T	d	t
5			%	5	E	U	e	u
6			&	6	F	V	f	v
7			'	7	G	W	g	w
8			(	8	H	X	h	x
9			)	9	I	Y	i	y
10			*	:	J	Z	j	z
11			+	;	K	[	k	{
12			,	<	L	¥	l	
13			-	=	M	]	m	}
14			.	>	N	^	n	~
15			/	?	O	_	o	DEL

(3)

0 ~31 32

국번	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
아스키 코드	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F

국번	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
아스키 코드	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	U	V

, "0" ( 1 ) , 16 "30H"

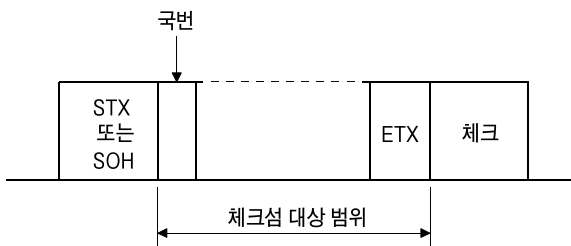
14. 5

,1  
가

[A]	[a]		
[B]	[b]		가
[C]	[c]		가
[D]	[d]		가
[E]	[e]		가
[F]	[f]	No.	No.가

14. 6

16 (STX SOH) ETX JIS8  
2 JIS8

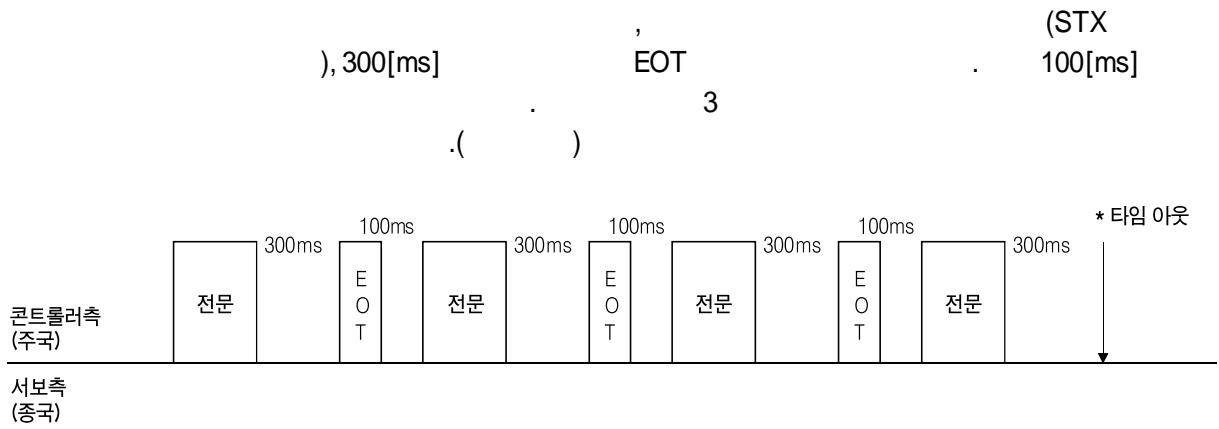


S T X	[0]	[A]	[1]	[2]	[5]	[F]	E T X	[5]	[2]
02H	30H	41H	31H	32H	35H	46H	03H		

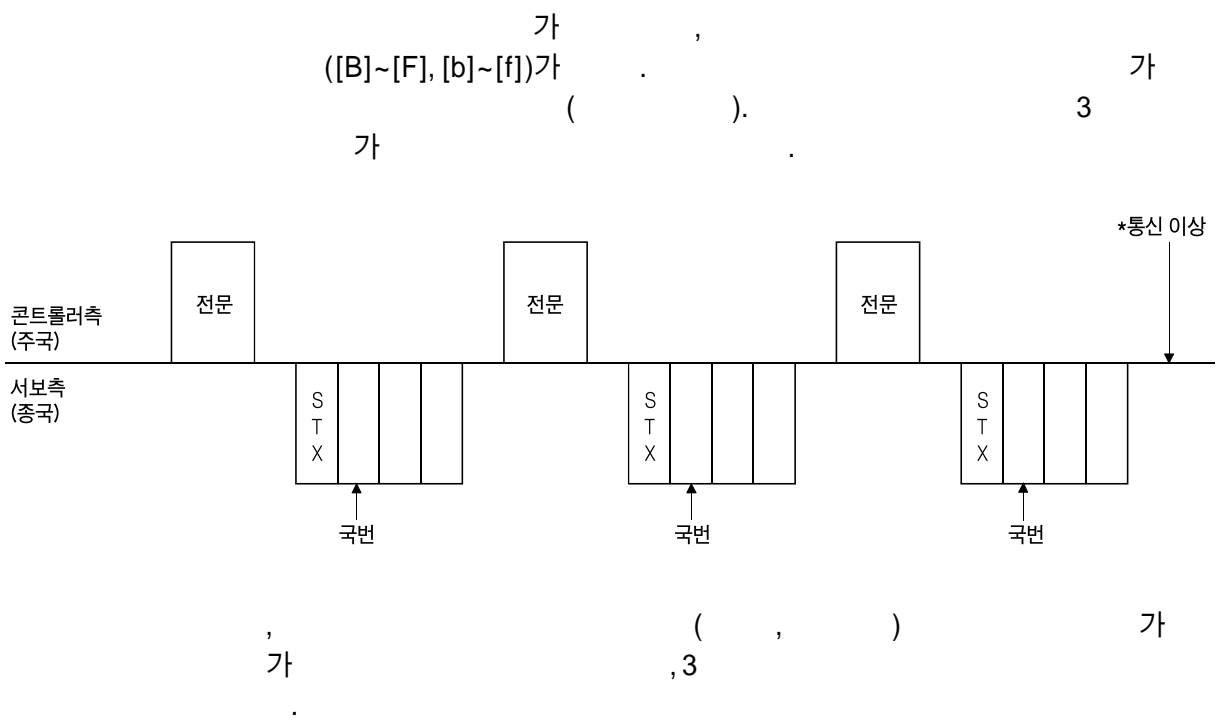
$$30H + 41H + 31H + 32H + 35H + 46H + 03H = 152H$$

하위 2자리 52를 아스키 코드 [5][2]로 하여 송신합니다.

14. 7



14. 8



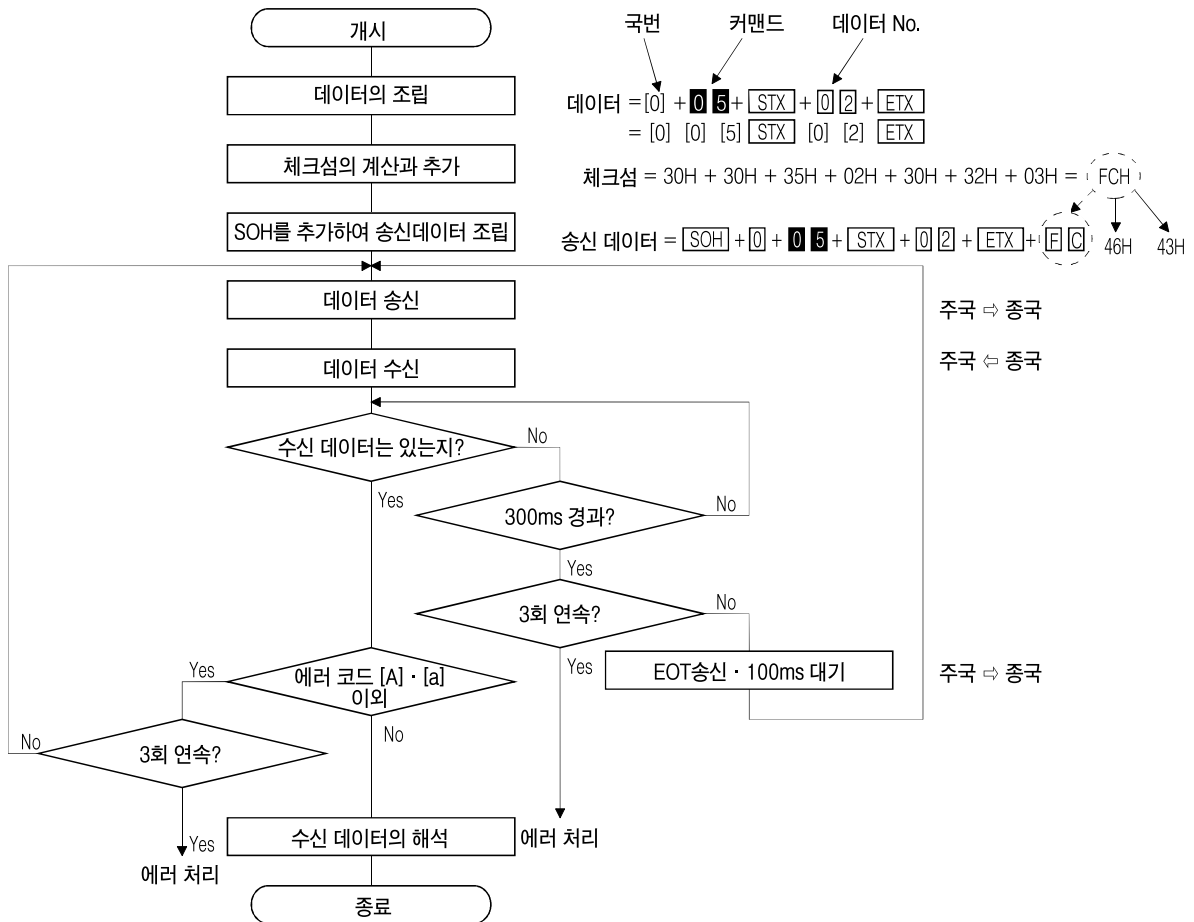
14. 9

가

- (1) 1s
- (2) 가

14.10

	0	No.2
	0	0
	05	
No.	02	No.2



14. 11 . No.

	No.가	가

14.11.1

(1) ( [0][1])

	No.		
[0][1]	[8][0]	가	12
[0][1]	[8][1]		12
[0][1]	[8][2]		12
[0][1]	[8][3]		12
[0][1]	[8][4]		12
[0][1]	[8][5]		12
[0][1]	[8][6]		12
[0][1]	[8][7]		12
[0][1]	[8][8]		12
[0][1]	[8][9]		12
[0][1]	[8][A]		12
[0][1]	[8][B]		1 12
[0][1]	[8][C]		ABS 12
[0][1]	[8][D]		12
[0][1]	[9][E]		12

(2) ( [0][5])

	No.		
[0][5]	[0][0]~[5][4]	No. (16 ) 10	8

(3) ( [1][2])

	No.		
[1][2]	[4][0]		8
[1][2]	[C][0]		8

(4) ( [3][3] )

	No.		
[3][3]	[1][0]		4
[3][3]	[1][1]		1 4
[3][3]	[1][2]		2 4
[3][3]	[1][3]		3 4
[3][3]	[1][4]		4 4
[3][3]	[1][5]		5 4
[3][3]	[2][0]		8
[3][3]	[2][1]		1 8
[3][3]	[2][2]		2 8
[3][3]	[2][3]		3 8
[3][3]	[2][4]		4 8
[3][3]	[2][5]		5 8

(5) ( [0][2] · [3][5] )

	No.		
[0][2]	[0][0]		4

	No.		
[3][5]	[8][0]		12
[3][5]	[8][1]		12
[3][5]	[8][2]		12
[3][5]	[8][3]		12
[3][5]	[8][4]		12
[3][5]	[8][5]		12
[3][5]	[8][6]	가	12
[3][5]	[8][7]		12
[3][5]	[8][8]		12
[3][5]	[8][9]		12
[3][5]	[8][A]		12
[3][5]	[8][B]		1 12
[3][5]	[8][C]		ABS 12
[3][5]	[8][D]		12
[3][5]	[9][E]		12

(6)

	No.		
[0][2]	[9][0]		8
[0][2]	[9][1]		8
[0][2]	[7][0]		16

## 14.11.2

(1) ( [8][1])

	No.			
[8][1]	[0][0]		1EA5	4

(2) ( [8][4])

	No.			
[8][4]	[0][0]~[5][A]	No. (16 ) 10		8

(3) ( [8][2])

	No.			
[8][2]	[2][0]		1EA5	4

(4) ( [8][2])

	No.			
[8][2]	[0][0]		1EA5	4

(5) ( [8][B])

	No.			
[8][B]	[0][0]	0000 : 0001 : JOG 0002 : 0003 : 0004 : (DO)	0000~0004	4

(6) ( [9][0])

	No.			
[9][0]	[0][0]	EMG · LSP · LSN , ON/OFF OFF	1EA5	4
[9][0]	[0][3]	[A][0]+ [8][B] No.[0][1]	1EA5	4
[9][0]	[1][0]	EMG · LSP · LSN , ,	1EA5	4
[9][0]	[1][3]	(DO)	1EA5	4



(7) ( [9][2] · [A][0] )

	No.		
[9][2]	[0][0]		8
[9][2]	[A][0]		8

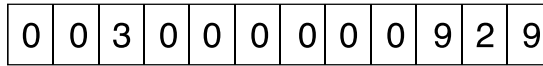
	No.		
[A][0]	[1][0]	( JOG . )	0000~7FFF 4
[A][0]	[1][1]	( JOG . ) 가	00000000~7FFFFFFF 8
[A][0]	[1][2]	( JOG . ) 가	1EA5 4
[A][0]	[1][3]	( . )	80000000~7FFFFFFF 8
[A][0]	[1][5]	( . )	1EA5 4

14. 12

14.12.1 가

+ No. + No.+  
 가 . 10 . 16 가  
 가 가 가 가 .  
 가 가 ,  
 가 .

(1) 가 .  
 0 8 16 10 ,  
 1 8 .  
 “00300000929” 가



데이터 32bit 길이(16진수 표기)  
 (표시 타입으로의 데이터 변환이 필요)

표시 타입  
 0 : 10진수로 변환을 요합니다.  
 1 : 16진수 그대로 사용합니다.

소수점 위치  
 0 : 소수점 없음  
 1 : 아래 1자릿수째(통상 사용하지 않습니다)  
 2 : 아래 2자릿수째  
 3 : 아래 3자릿수째  
 4 : 아래 4자릿수째  
 5 : 아래 5자릿수째  
 6 : 아래 6자릿수째

“0” , 16 10 .  
 00000929H 2345  
 가 “3” 3 .  
 “23.45” .

(2)가

가 10

. 16

“ 0 ”



데이터를 16진수 전송합니다.

소수점 위치

0 : 소수점 위치

1 : 아래 1자릿수째

2 : 아래 2자릿수째

3 : 아래 3자릿수째

4 : 아래 4자릿수째

5 : 아래 5자릿수째

“ 15.5 ”

가 2

16

10

가

“ 2 ”가

16

155 9B

“ 0200009B ”



14.12.3

(1)

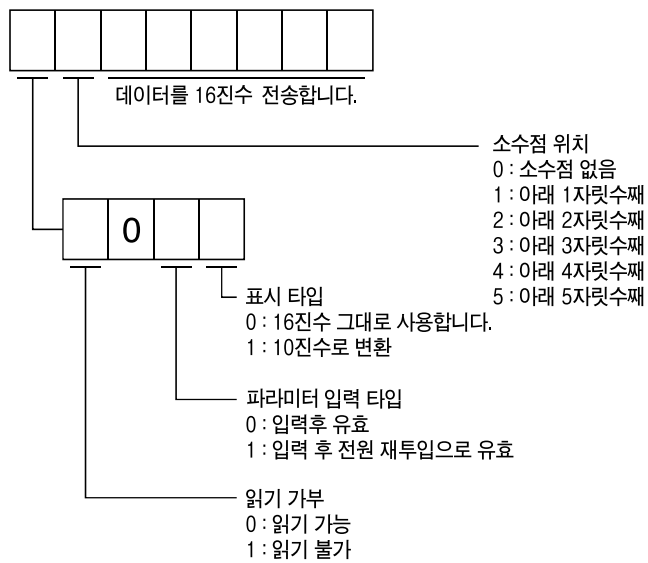
(a)

[0][5] No. No.  
 No. 16 No. 10  
 No.

	No.
[0][5]	[0][0]~[5][4]

(b)

No. 가



No.19 가 가



14.12.4 (DIO )

(1)

ON/OFF

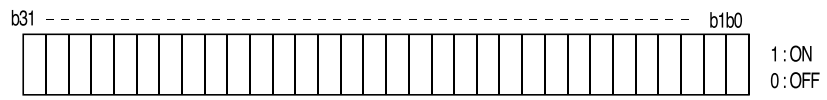
(a)

[1][2]+ No.[4][0]

	No.
[1][2]	[4][0]

(b)

ON/OFF



각 bit마다의 지령을 16진수 데이터로서 주국에 전송

bit		bit		bit		bit	
0	CN1B - 16	8	CN1B - 9	16		24	
1	CN1B - 17	9		17		25	
2	CN1B - 15	10		18		26	
3	CN1B - 5	11		19		27	
4	CN1B - 14	12		20		28	
5	CN1A - 8	13		21		29	
6	CN1B - 7	14		22		30	
7	CN1B - 8	15		23		31	

(2)

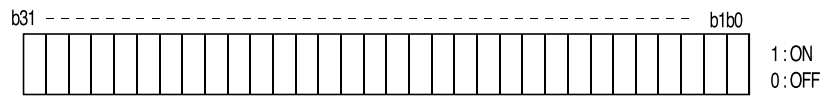
ON/OFF

(a)

[1][2]+ No.[C][0]

	No.
[1][2]	[C][0]

(b)



각 bit마다의 지령을 16진수 데이터로서 주축에 전송

bit		bit		bit		bit	
0	CN1A - 19	8		16		24	
1	CN1A - 18	9		17		25	
2	CN1B - 19	10		18		26	
3	CN1B - 6	11		19		27	
4	CN1B - 4	12		20		28	
5	CN1A - 18	13		21		29	
6	CN1A - 14	14		22		30	
7		15		23		31	



14.12.5 (DIO)

EMG · LSP · LSN

(DI)	OFF
	0V

(1) EMG · LSP · LSN (DI)

(a)

	No.	
[9][0]	[0][0]	1EA5

(b)

	No.	
[9][0]	[1][0]	1EA5

(2) (DO)

(a)

	No.	
[9][0]	[0][3]	1EA5

(b)

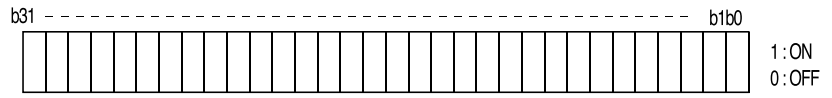
	No.	
[9][0]	[1][3]	1EA5

14.12.6 ON/OFF( )

ON/OFF  
OFF

[9][2]+ No.[0][0]+

	No.	
[9][2]	[0][0]	



각 bit마다의 지령을 16진수 데이터로서 주축에 전송

bit		bit		bit		bit	
0	SON	8		16		24	
1	LSP	9		17		25	
2	LSN	10		18		26	
3	TL	11	ST1	19		27	
4		12	ST2	20		28	
5	PC	13		21		29	
6	RES	14		22		30	
7	CR	15		23		31	

14.12.7

(1)

0.5s

(a)

OFF

	No.	
[9][0]	[0][0]	1EA5

	No.		
[8][B]	[0][0]	0000	
[8][B]	[0][0]	0001	JOG
[8][B]	[0][0]	0002	
[8][B]	[0][0]	0003	
[8][B]	[0][0]	0004	DO

(b)

가

	No.	
[A][0]	[1][2]	1EA5

	No.	
[8][B]	[0][0]	0000

	No.	
[9][0]	[1][0]	1EA5

(2) JOG

(a) JOG

		No.	
	[A][0]	[1][0]	[r/min] 16
가	[A][0]	[1][1]	가 [ms] 16

(b)

SON · LSP · LSN [9][2]+ No.[0][0]  
ON

		No.	
	[9][2]	[0][0]	00000807 : SON · LSP · LSN ON
	[9][2]	[0][0]	00001007 : SON · LSP · LSN ON
	[9][2]	[0][0]	00000007 : SON · LSP · LSN ON

(3)

(a)

		No.	
	[A][0]	[1][0]	[r/min] 16
가	[A][0]	[1][1]	가 [ms] 16
	[A][0]	[1][3]	[pulse] 16

(b)

ON · SON · LSP · LSN [9][2]+ No.[0][0]  
ON

		No.	
ON	[9][2]	[0][0]	00000001 : SON ON
OFF ON	[9][2]	[0][0]	00000006 : SON OFF, LSP · LSN ON
OFF ON	[9][2]	[0][0]	00000007 : SON · LSP · LSN ON

(c)

.가 , ON(SON) . (LSP) .  
 (LSN) ON , . (-)  
 (SON) . (LSP) . (LSN)가 OFF ,  
 ON  
 (SON) . (LSP) . (LSN) ON

(d)

	No.	
[A][0]	[1][5]	1EA5



14.12.9

(1) No. No. .0 ( ) 5 ( 6 )

(a) [3][3] + No. [1][0]~[1][5]  
14.11.1

(b) No. No.  

0	0		
---	---	--	--

  
 알람 No.를 10진수 표기로 전송합니다.

“ 0032 ” AL.32, “ 00FF ” AL.\_( )

(2) No.

(a) [3][3] + No. [2][0]~[2][5]  
14.11.1

(b)
 

--	--	--	--	--	--	--	--

  
 알람 발생시간을 10진수 표기로 전송합니다.  
 16진수 → 10진수 변환이 필요합니다.

“ 01F5 ” 501

(3) [8][2] + No. [2][0]

	No.	
[8][2]	[2][0]	1EA5

14.12.10

(1)

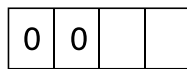
No.

(a)

[0][2] + No. [0][0]

	No.
[0][2]	[0][0]

(b)



알람 No.를 10진수 표기로 전송합니다.

“ 0032 ” AL.32, “ 00FF ” AL.\_( )

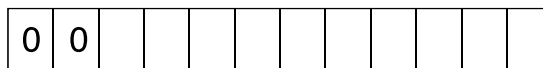
(2)

No. , 가 가

(a)

[3][5] + No. [8][0]~[8][E]  
14.11.1

(b)



데이터 32bit 길이(16진수 표기)  
(표시 타입으로의 데이터 변환이 필요)

표시 타입  
0 : 10진수로 변환을 요합니다.  
1 : 16진수 그대로 사용합니다.

소수점 위치  
0 : 소수점 없음  
1 : 아래 1자릿수째(통상 사용하지 않습니다)  
2 : 아래 2자릿수째  
3 : 아래 3자릿수째  
4 : 아래 4자릿수째  
5 : 아래 5자릿수째  
6 : 아래 6자릿수째



(3)

(RES) 가 , 가  
가 , 가

	No.	
[8][2]	[0][0]	1EA5

14.12.11

(1)

16384

(a)

[0][2] + No. [9][0]

	No.
[0][2]	[9][0]

(b)

--	--	--	--	--	--	--	--

지령단위로 절대값을 16진수 데이터로 반송합니다.  
(10진수로 변환이 필요)

“ 000186A0 ”

100000[pulse]가

(2)

(a)

[0][2] + No. [9][1]

	No.
[0][2]	[9][1]

(b)

--	--	--	--	--	--	--	--

지령단위로 절대값을 16진수 데이터로 반송합니다.  
(10진수로 변환이 필요)

“ 000186A0 ”

100000[pulse]가

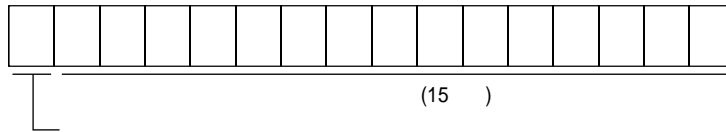
(3)

(a)

 $[0][2] + \text{No. } [7][0]$ 

	No.
$[0][2]$	$[7][0]$

(b)





15

⚠ 주의 (AL.25) (AL.E3)가

QD75P/D  
, QD75P/QD75D (SH( ))  
080047)

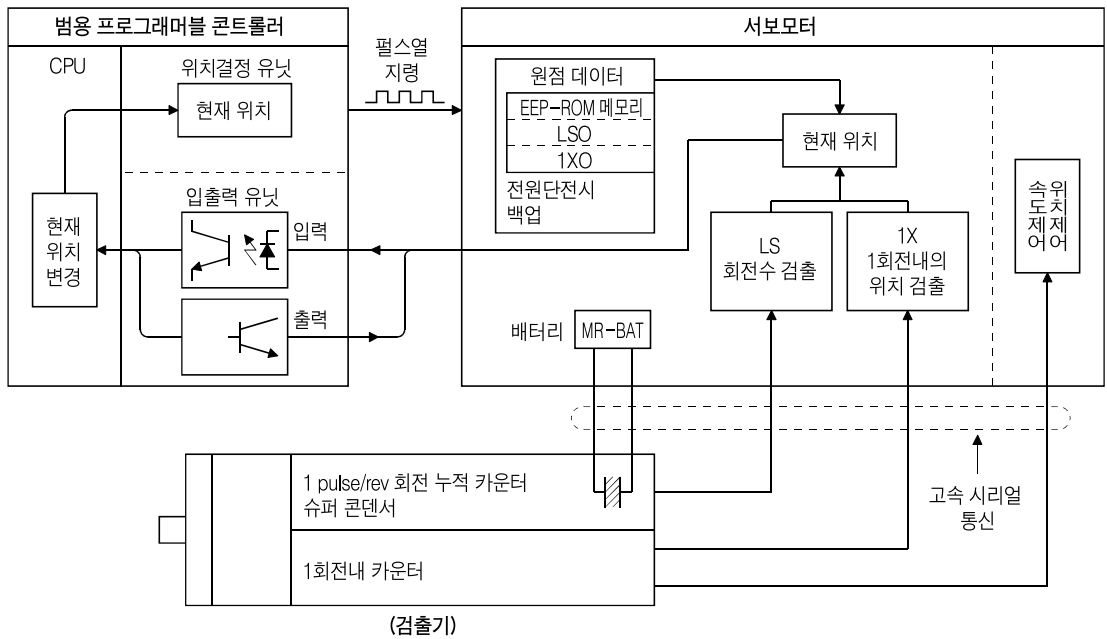
15. 1

15.1.1

1

ON/OFF

( )



15.1.2

No.1

- (1) .
- (2) ( / , / , / )
- (3) .
- (4) .
- (5) .

15. 2

(1)

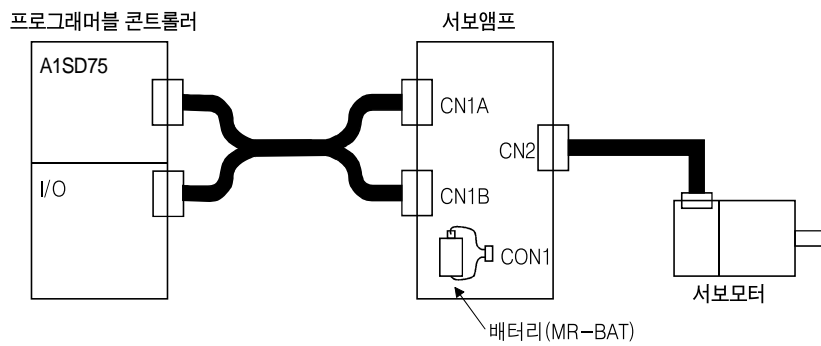
	(1 , +3.6V) × 1 : MR - BAT A6BAT
	±32767rev
( 1 )	500r/min
( 2 )	1 ( )
( 3 )	2 , 5 1
	5

- ( ) 1.
- 2.
- 3
- 3.

가 , OFF

(2)

A1SD71S2 · A1SD71S7 A1SD75	AX40 · 41 · 42 AY40 · 41 · 42
FX2N - 1GP, FX2N - 10PG, FX2N - 10GM, FX2N - 20GM	FX2N(C) , FX3U(C)



(3)

No.1 “ 1 ”

파라미터 No.1

1	-	-	-
---	---	---	---

절대위치 검출시스템의 선택  
0 : 인크리멘탈 시스템에서 사용합니다.  
1 : 절대위치 검출시스템에서 사용합니다.

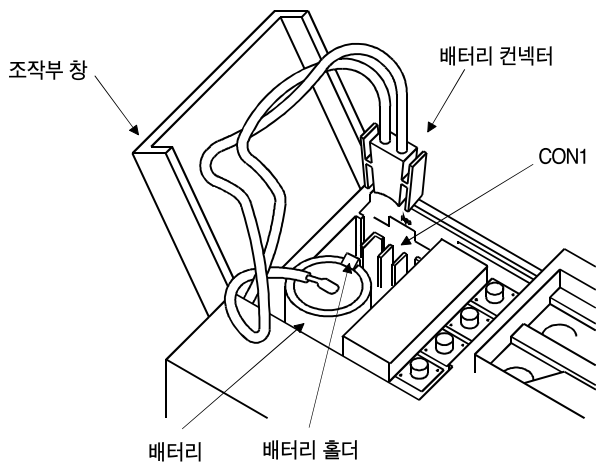
15. 3

⚠ 위험      가 , . OFF , 15  
                  가 , . P - N  
                  :  
                  :

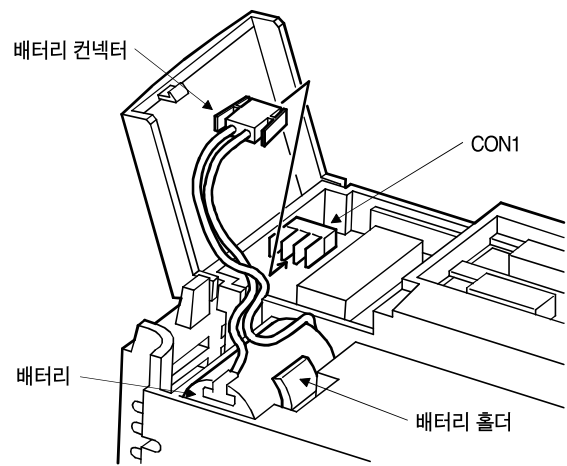
가 .  
 .  
 .

.(MR - J2S - 200A · MR - J2S - 350A  
 .)

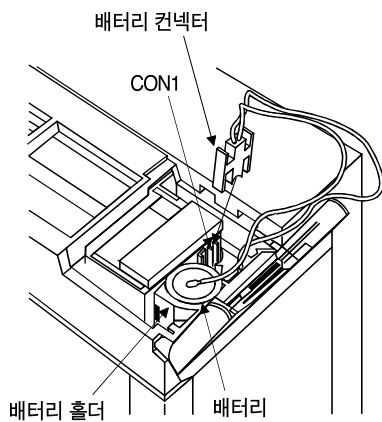
CON1      가



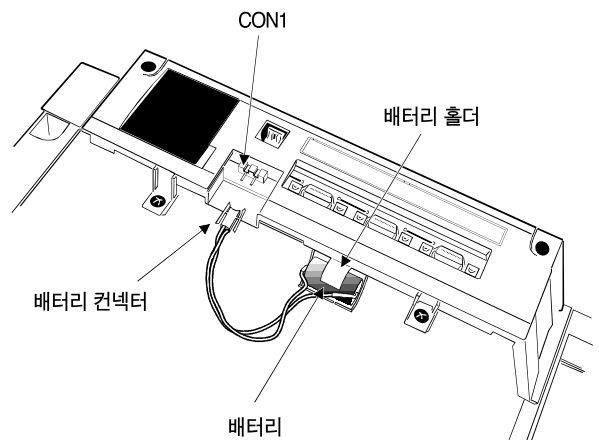
MR-J2S-100A



MR-J2S-200A · MR-J2S-350A

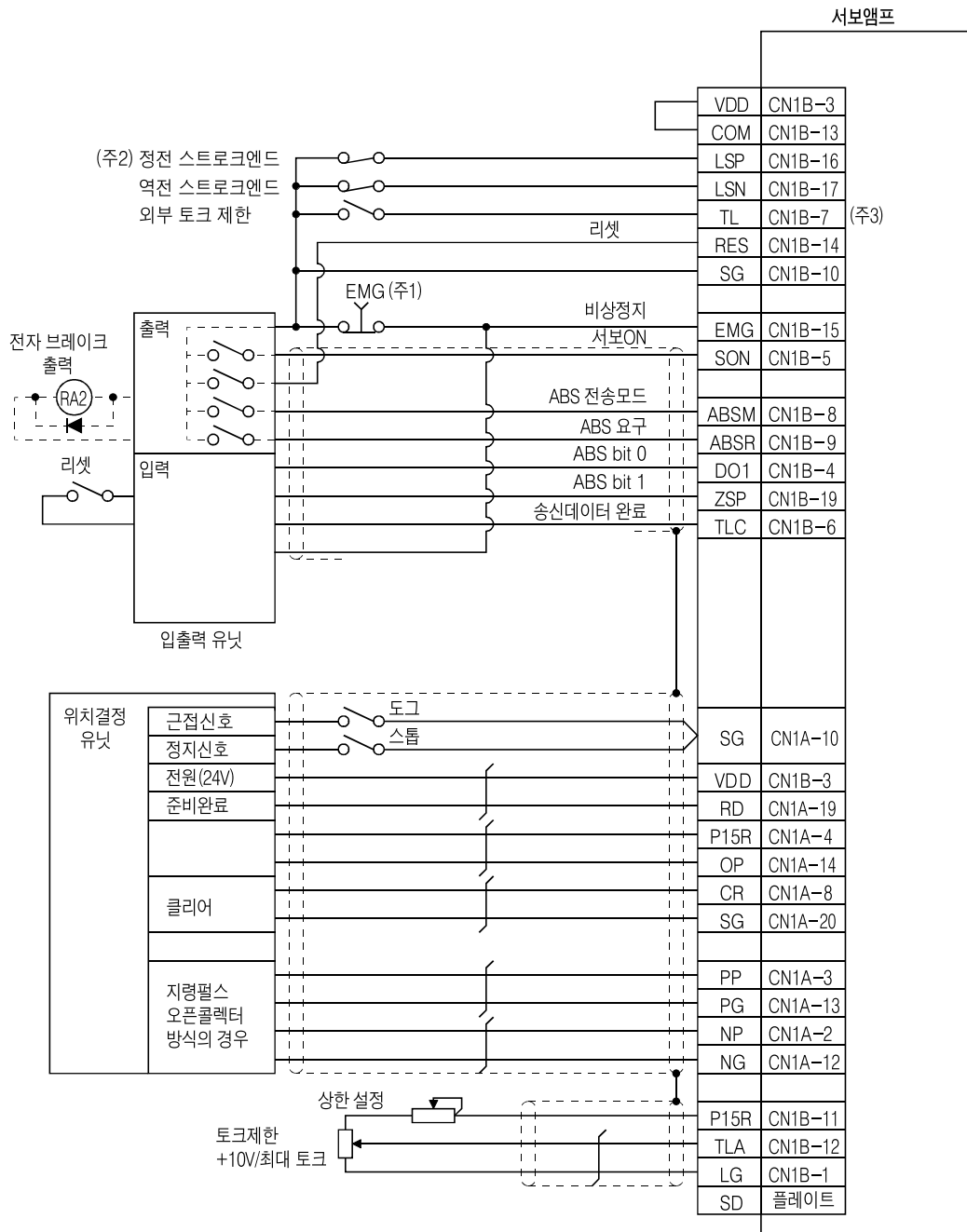


MR-J2S-500A · MR-J2S-700A



MR-J2S-11KA

15. 4



- ) 1.
- 2. (LSN · LSP) SG
- 3. (TL) No.46 " 4" , CN1B-7 TL



15. 5

CN1 가  
3.3.2  
( I/O ) 3.6

		No.		I/O	
ABS	ABSM	( ) CN1B - 8	ABSM - SG ABS 가 , ZSP · TLC · DO1	DI - 1	P ( )
ABS	ABSR	( ) CN1B - 9	ABS ABSR - SG	DI - 1	
ABS bit 0	DO1	CN1B - 4	ABS ABS 2bit 가 DO1 - SG bit	DO - 1	
ABS bit 1	ZSP	CN1B - 19	ABS ABS 2bit 가 ZSP - SG bit	DO - 1	
	TLC	CN1B - 6	ABS TLC - SG	DO - 1	
	CR	CN1A - 8	CR - SG ( 가 )	DI - 1	

) No.1 “ ” , CN1B - 8 ABS (ABSM) , CN1B - 9 ABS (ABSR) 가  
가

15. 6

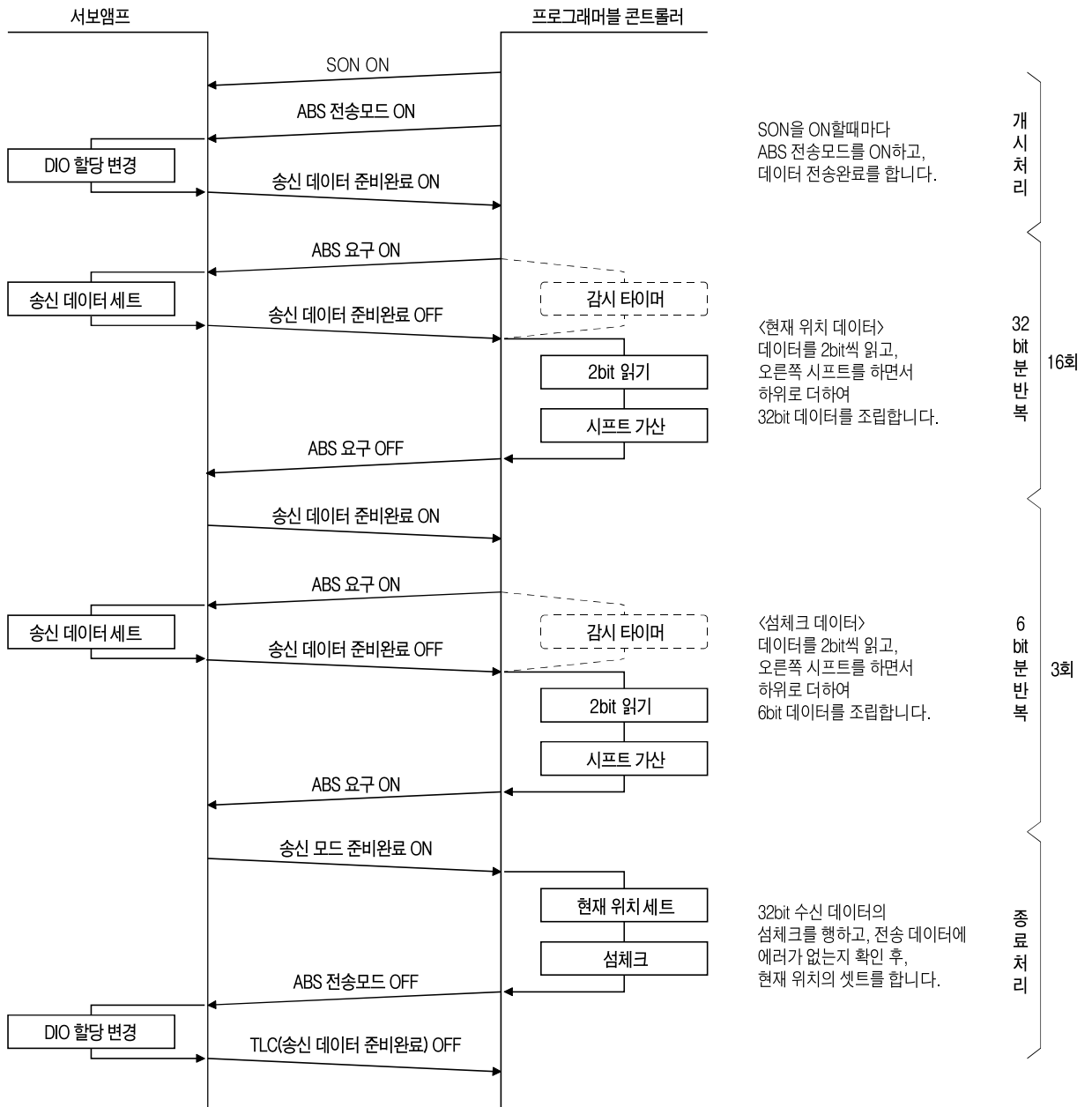
- (1) 15.3
- (2) No.1 “ 1 ” , OFF ON .
- (3) (AL25) (AL.25) .  
2~3 OFF ON .
- (4) ON ON 가 가 .  
ABS 가 가 .
- (a) (RD) ON
- (b) . ABS (A1SD71 M3,  
1PG M99)가 ON
- (c) - ABS (15.9 )  
ABS (A1SD71 D3 · D4, 1PG D106 · D107)  
( 0 ) .  
ABS (ALE5) 가  
15.10 10 .
- (5) 가 .
- (a) -
- (b)
- (c)
- (c) (AL.25)
- 가 .  
가 .
- , 15.7.3 .

15. 7

ABS	(ABSM) ON	, ON(SON) ON	ON
ABS	OFF	ON(SON) ON	ON

15.7.1

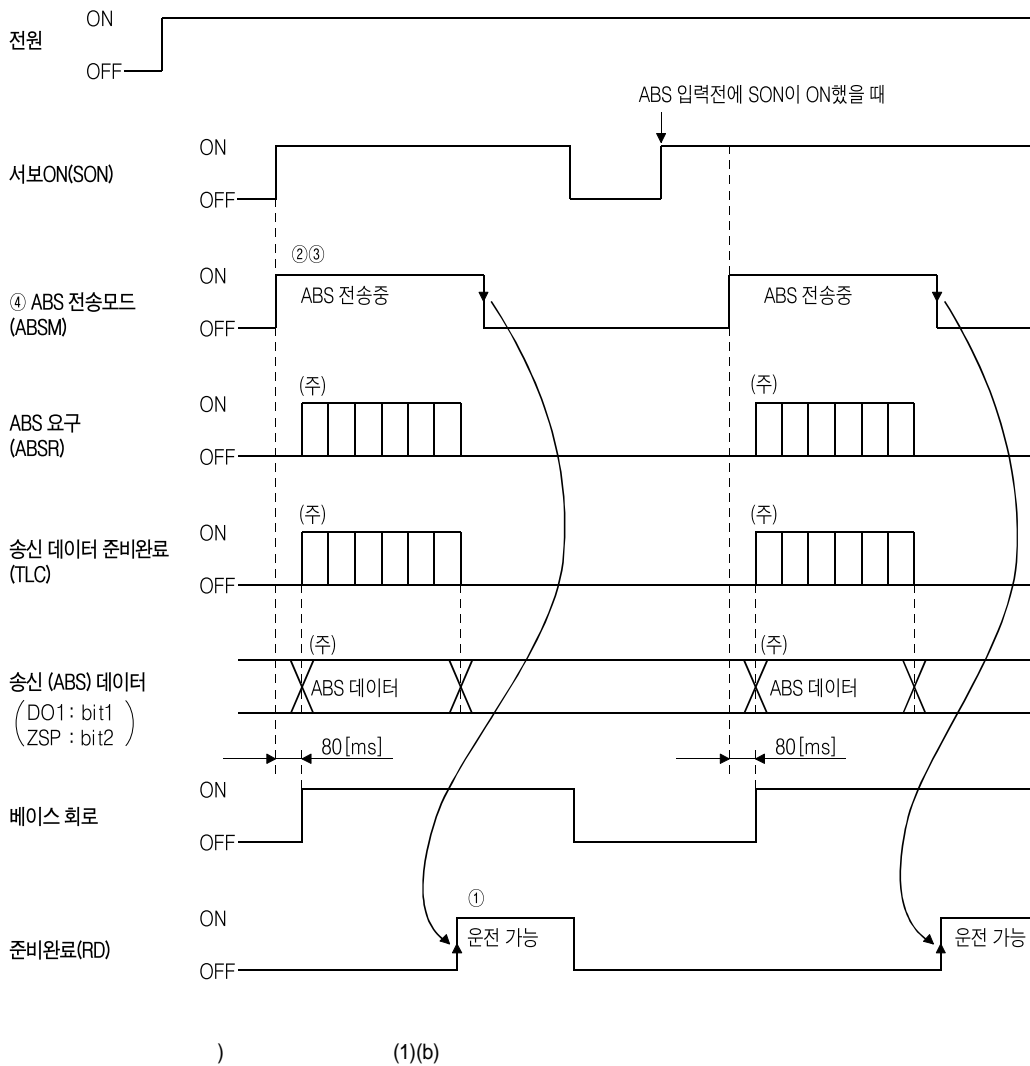
,SON 가 ON



15.7.2

ON (SON) OFF . . . 가 OFF  
 ON( ON)  
 ON (SON) , ABS (ABSM) ON ,  
 ABS (ABSM) 가 OFF  
 ON (Latch)  
 가  
 ON . ABS (ABSM) ON

(1)  
(a)



(RD)가 ABS , ABS (ABSM) OFF (RD)가  
 ON . (RD) ABS (ABSM)

ABS (ABSM) ON ON (SON) ON  
 ABS (ABSM)가 ON ON  
 ABS ABS (ABSM)

ABS (ABSM)

ABS ABS (ABSM) OFF ABS 가  
 (AL.E5)가

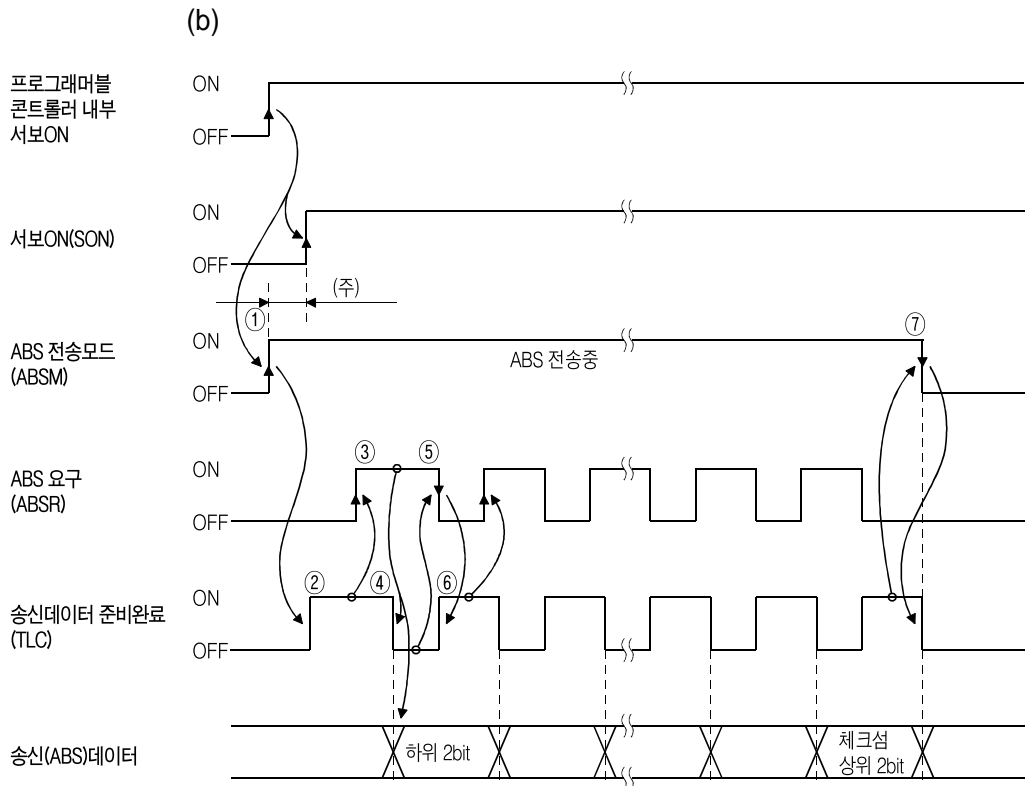
ABS ON(SON) OFF, (RES) ON, (EMG) OFF  
 ABS (AL.E5)가

ZSP · TLC · DO1 · INP  
 ABS ABS (ABSM) ON

	No.	ABS (ABSM) OFF		ABS (ABSM) ON	
		ABS	(ABSM) OFF	ABS	(ABSM) ON
( )DO1	CN1B - 4			ABS	bit 0
ZSP	CN1B - 19			ABS	bit 1
TLC	CN1B - 6				
( )INP	CN1A - 18			ABS	bit 0

) CN1B - 4 CN1A - 18  
 ( A1SD75 INPS , CN1A - 18 .)

ABS (ABSM)  
 , (SON) OFF  
 (OFF)



) ABS (ABSM) ON 1[s] ON (SON) ON (SON) ON , SON (AL.EA)가

ON (SON) ON ON ABS (ABSM)

ABS (TLC) ON (answer back)

(TLC)가 ON

ABS (ABSR) ON

ABS (ABSR) ABS 2bit (TLC) OFF

(TLC)가 OFF (ABS 2bit 가

) , ABS 2bit ABS (ABSR) OFF

(TLC)가 ON 32bit

6bit

ON , ABS (ABSM) OFF ABS (ABST)가 ABS (ABSM) OFF , ABS



(2)

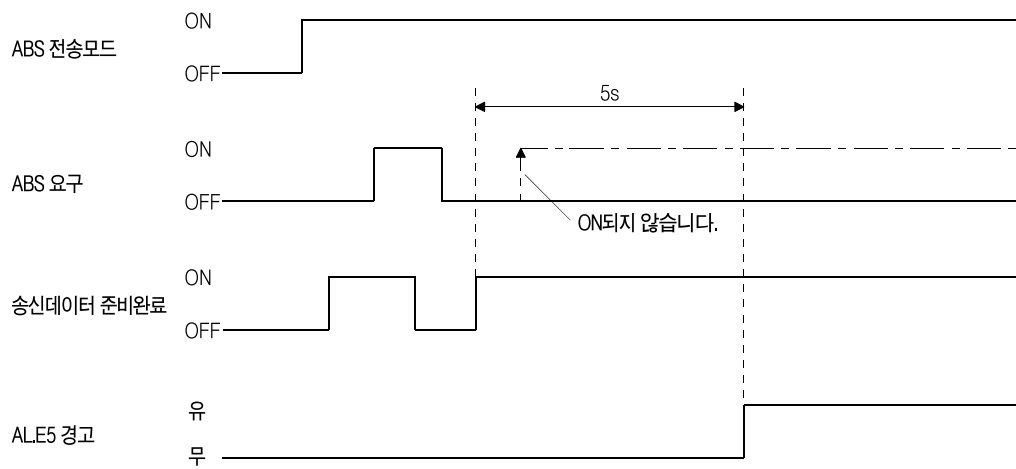
(a) (ALE5)

ABS (ALE5) ABS (ALE5) ABS (ABSM) OFF ON

ABS OFF (2bit 32bit ABS + )

ON , 5s

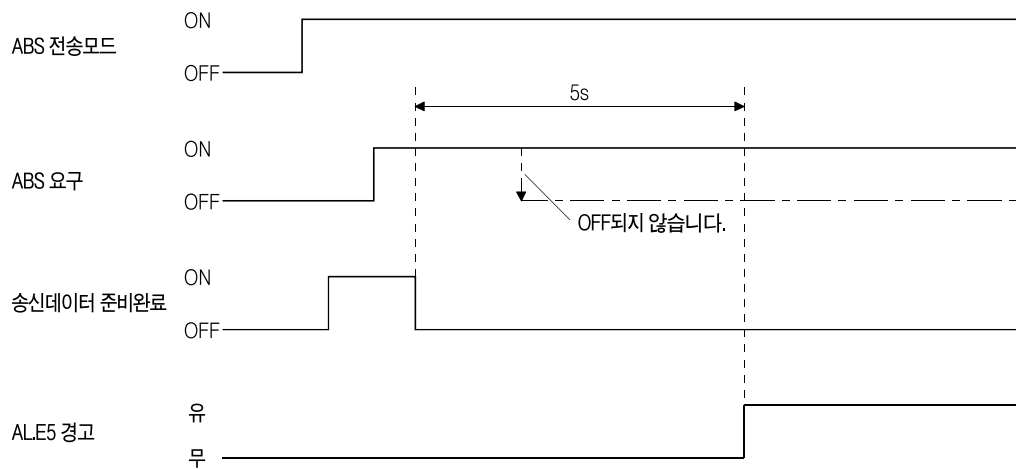
ABS 가 ON , ABS 가



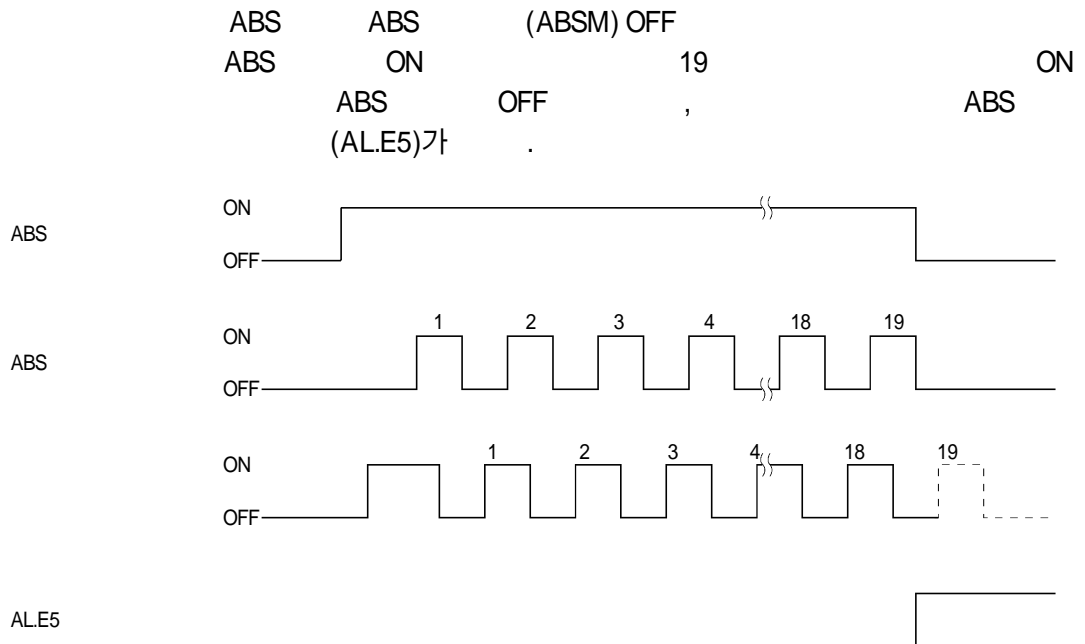
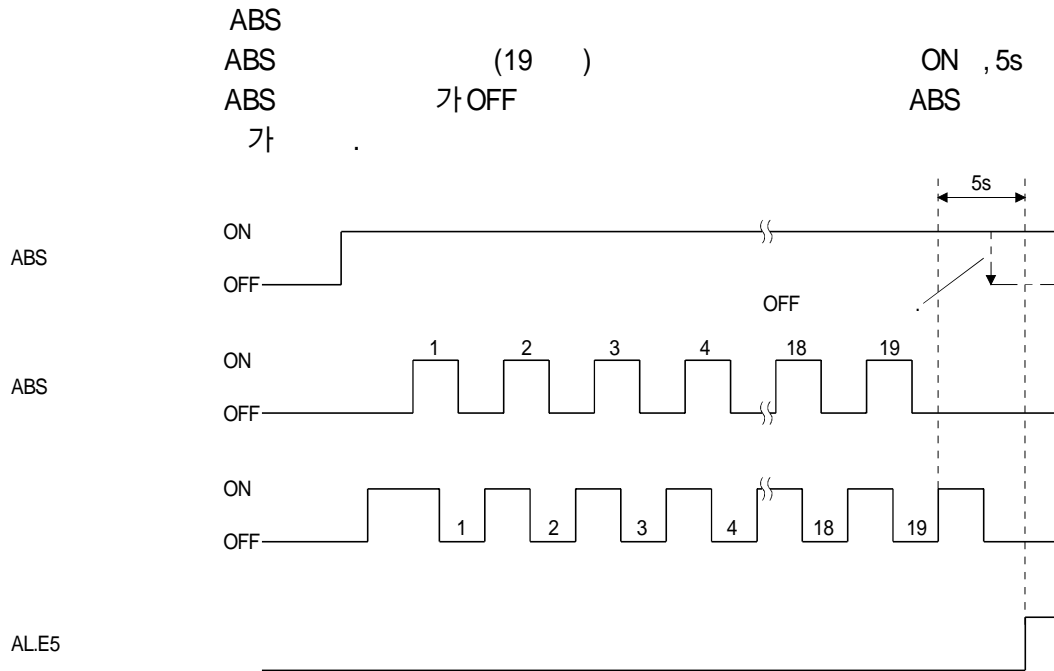
ABS ON (2bit 32bit ABS + )

OFF , 5s

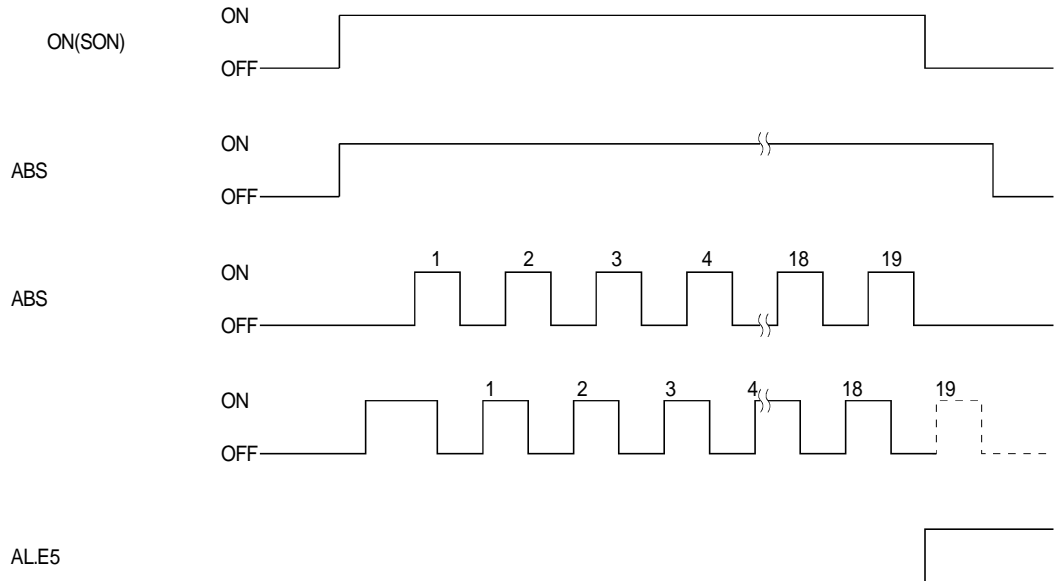
ABS 가 OFF , ABS 가





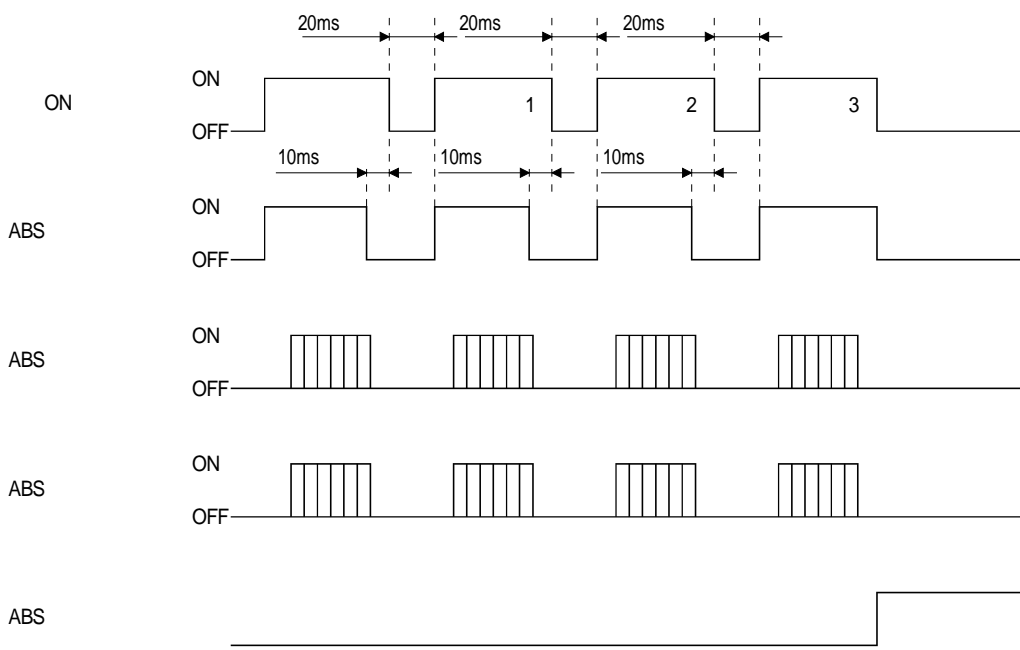


ABS (SON) OFF . (RES) ON . (EMG) OFF  
 ABS ON 19 ON  
 (SON) OFF , (RES) ON,  
 (EMG) ON , ABS  
 (ALE5)가 .

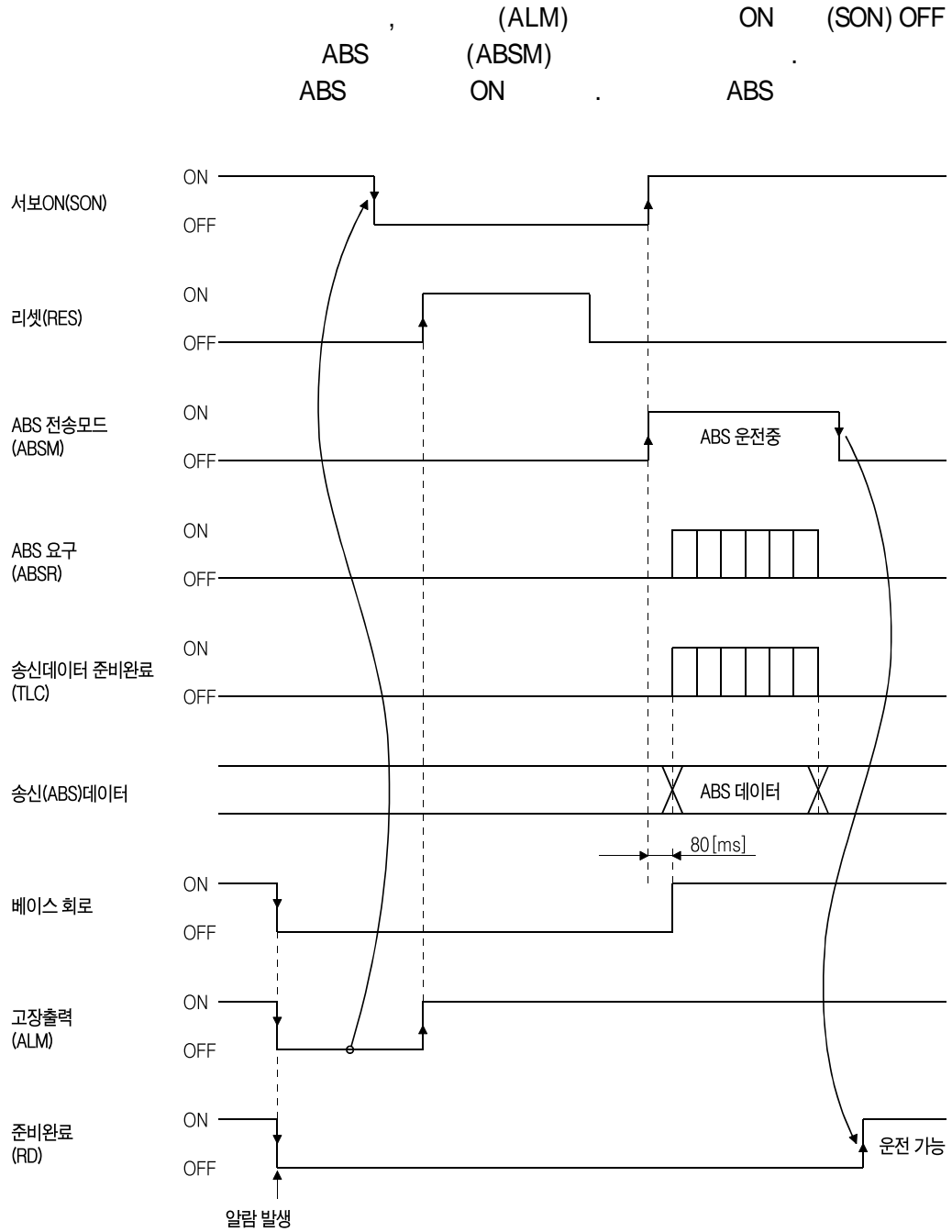


(b)

ON (SON) ABS (loader) (retry) ABS (ANSM)  
 ON OFF(20ms) OFF ) ,  
 , ABS  
 가 , ABS  
 3

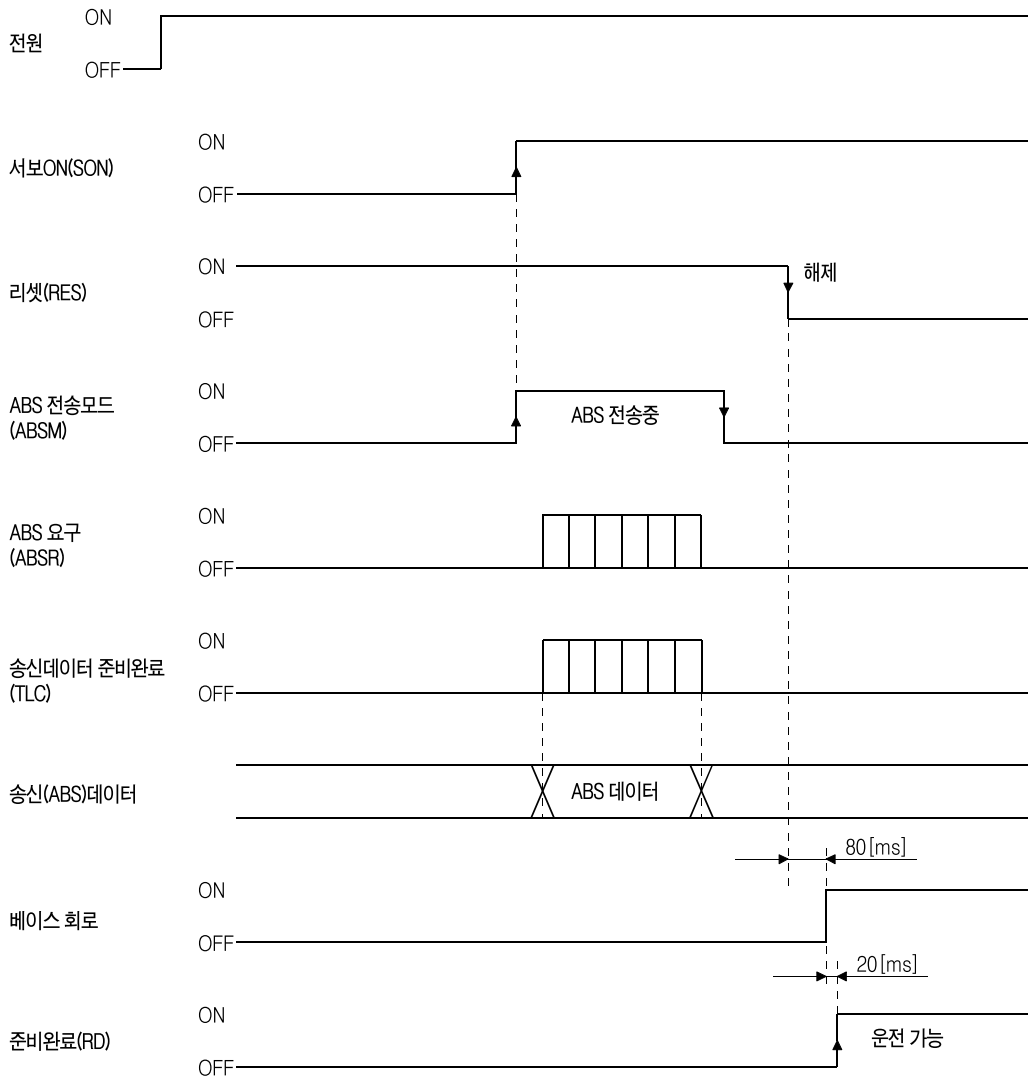
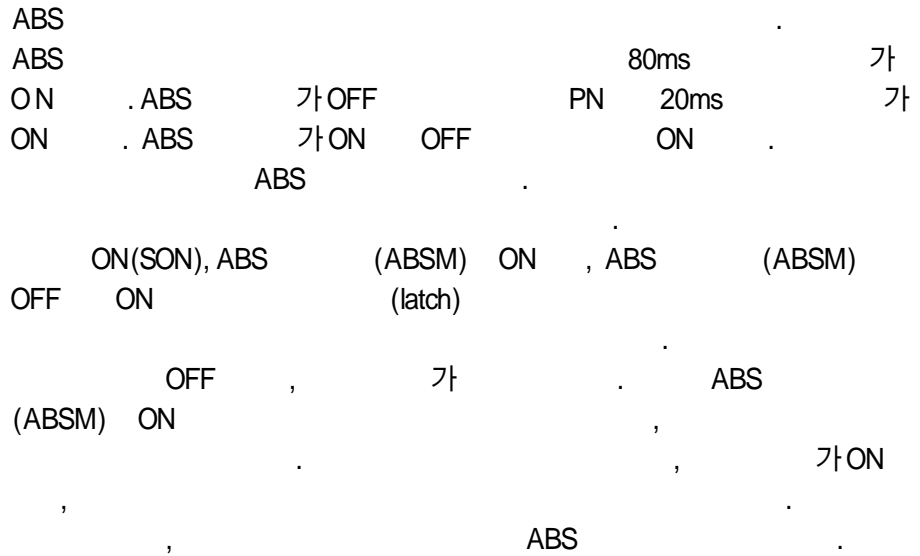


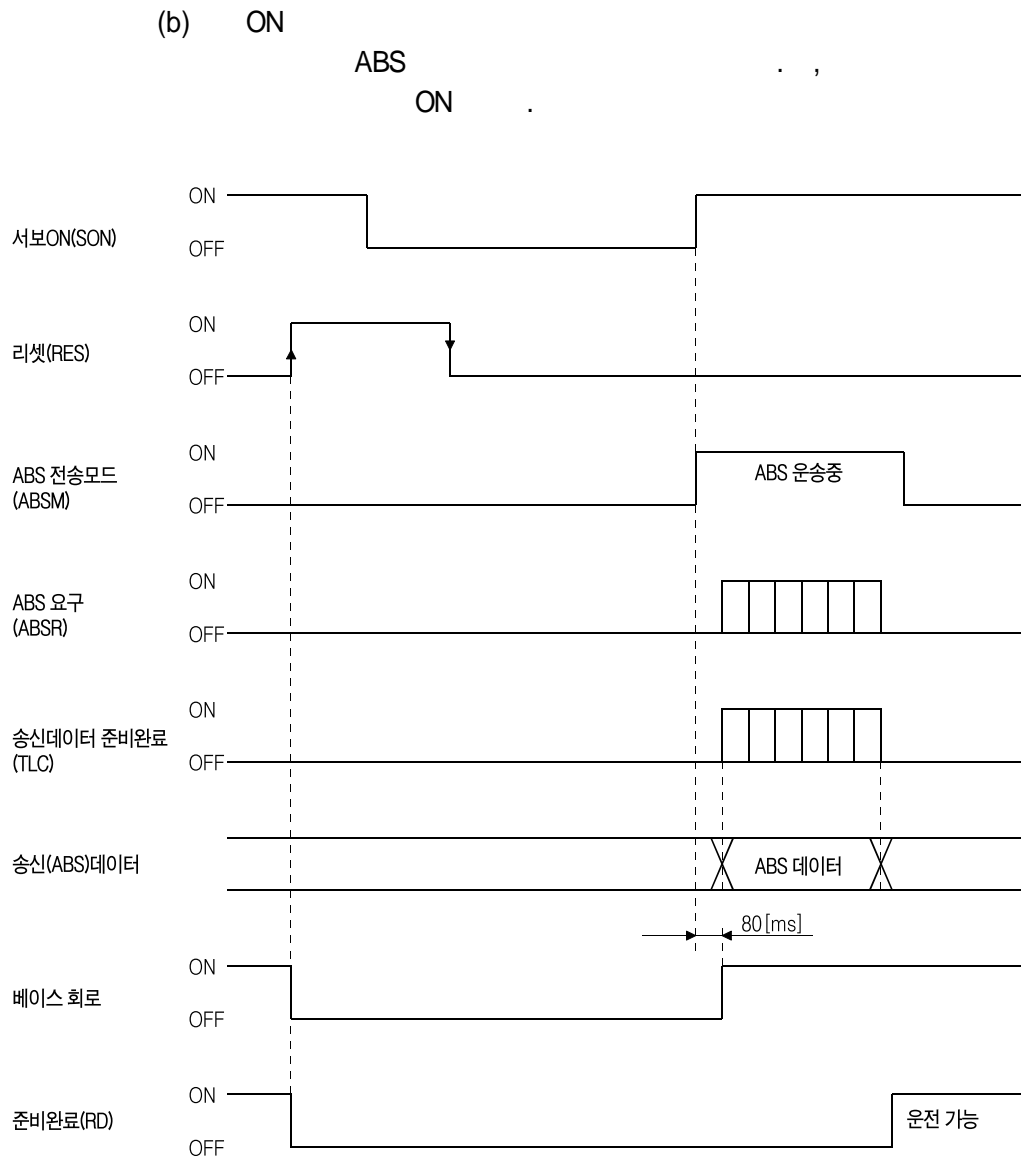
(3)



(4)

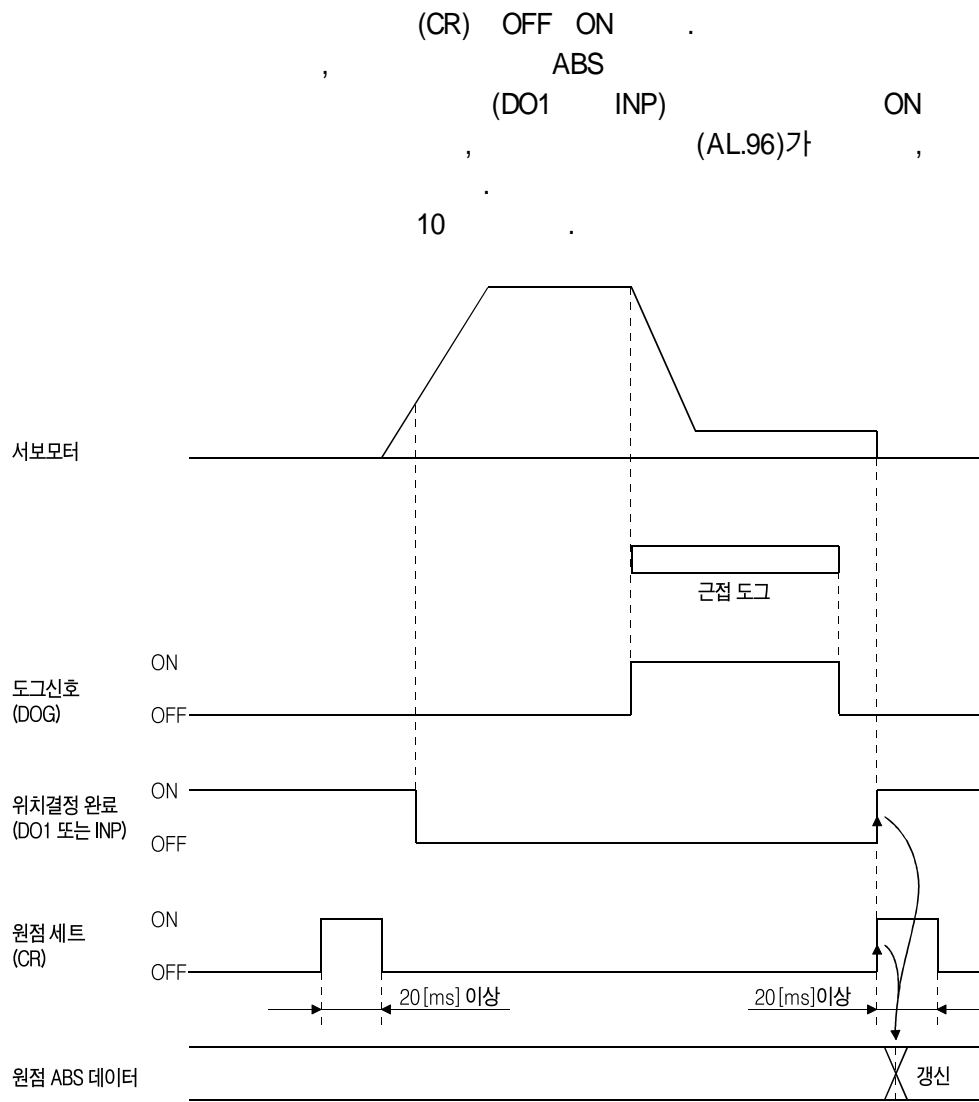
(a)



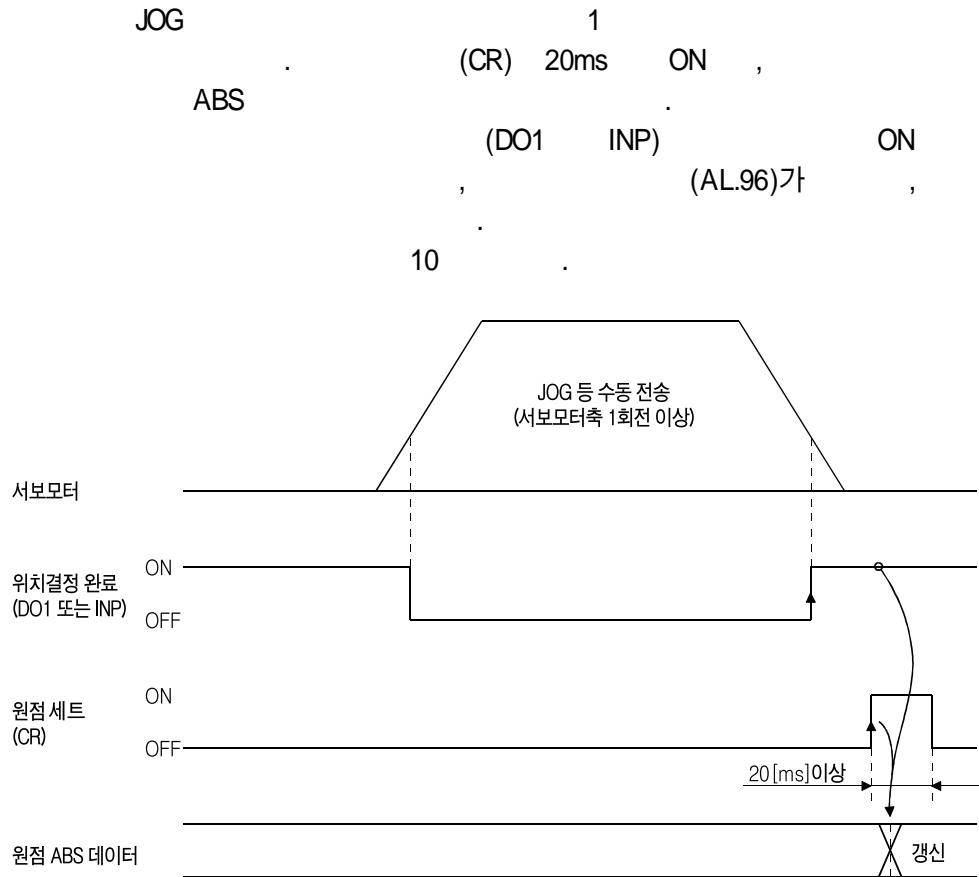
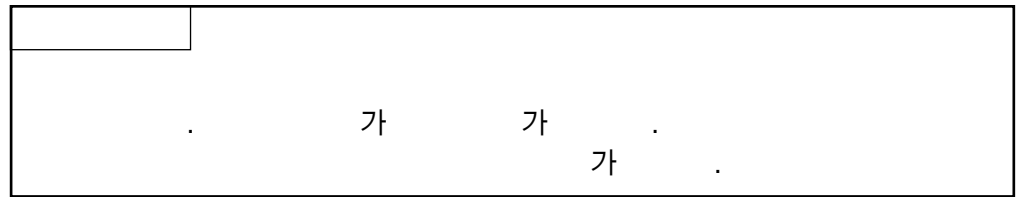


15.7.3

(1)



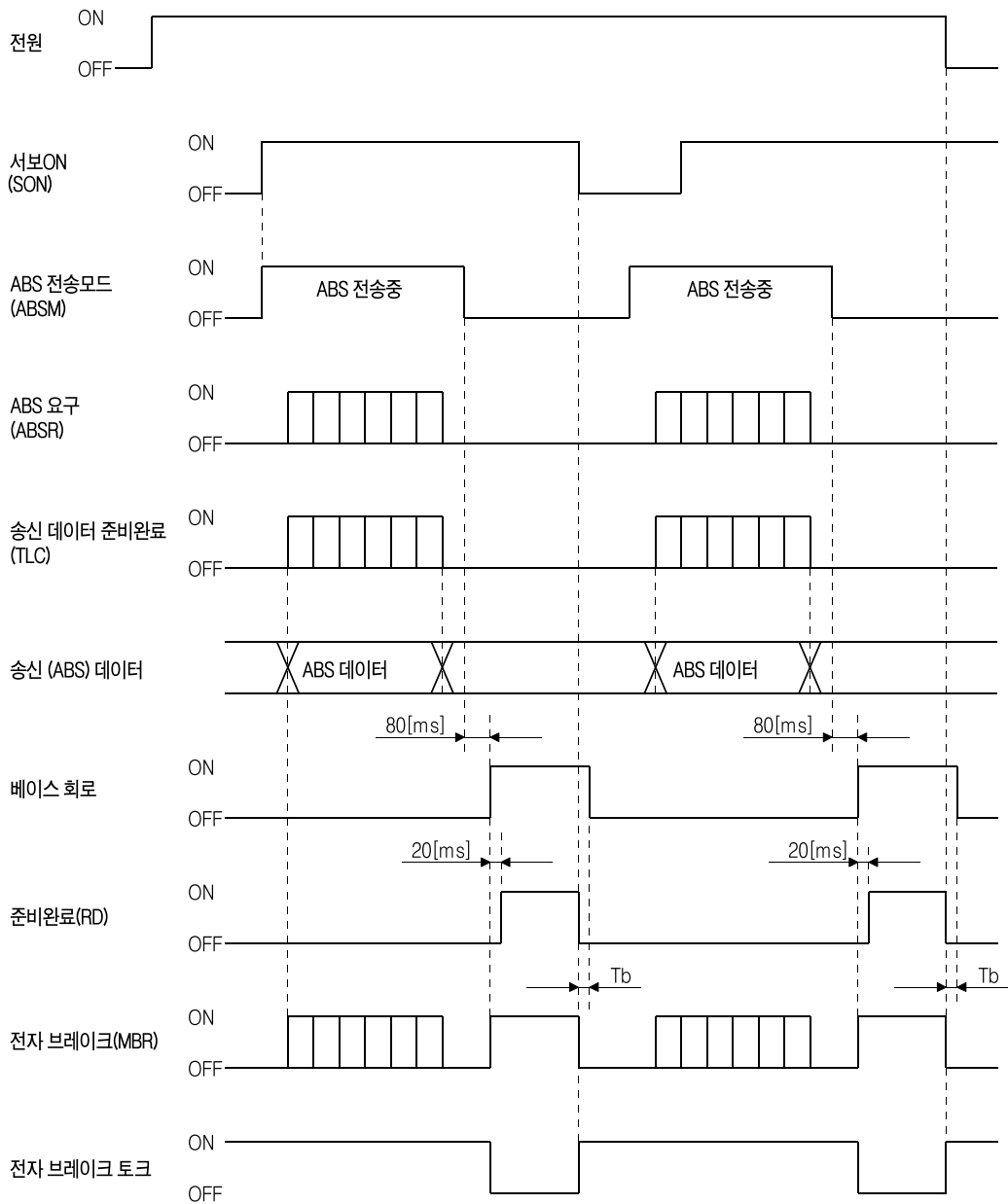
(2)





15.7.4

ON/OFF      ON(SON)      ON/OFF      ,      (MBR)      가  
 No.1 “ 1 ”      (MBR)      ABS  
 . ABS      ON      ,      (MBR)      ABS  
 bit가      , ABS      (ABSM)      가



15.7.5

(LSP · LSN) , ,  
가 , .  
가 .  
OFF ON JOG 가, OFF ON .ON , ON

15. 8

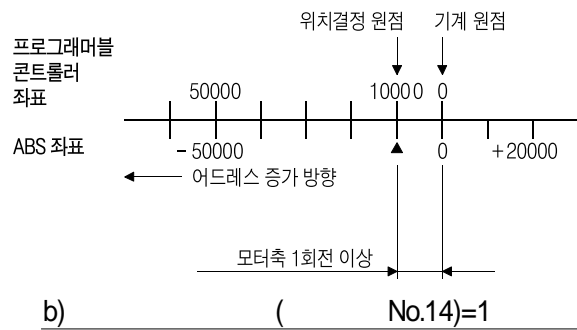
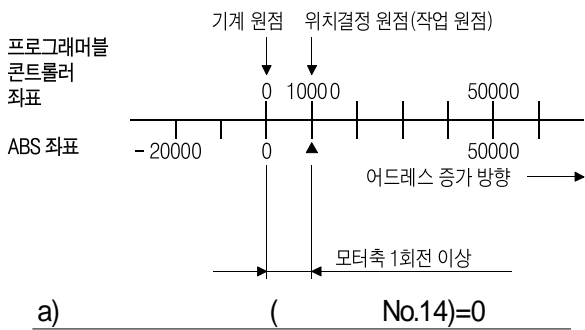
15.8.1 MELSEC A1SD71(AD71)

(1)

A1SD71(AD71) 가 (+ ) 가 . 가(-) 가  
ON/OFF , 가 .

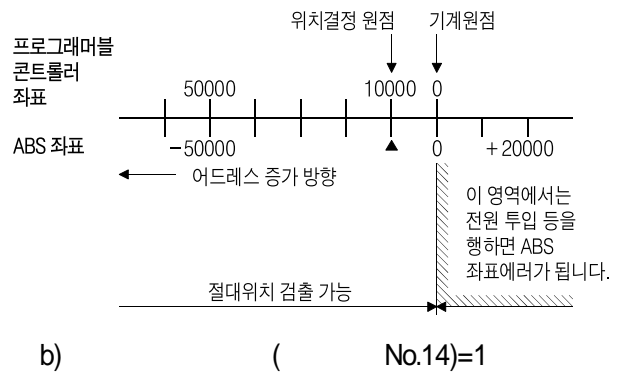
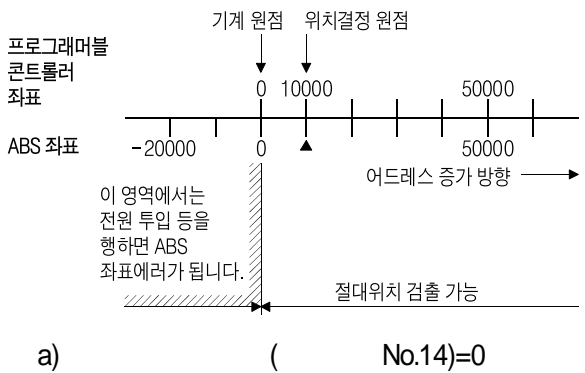
(a)

가 , 1 가 ( .  
0 가 , 1

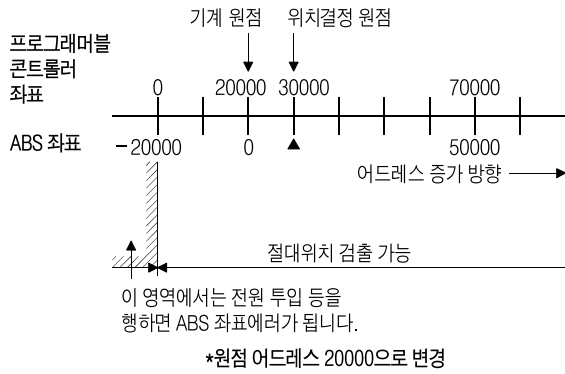


(b)

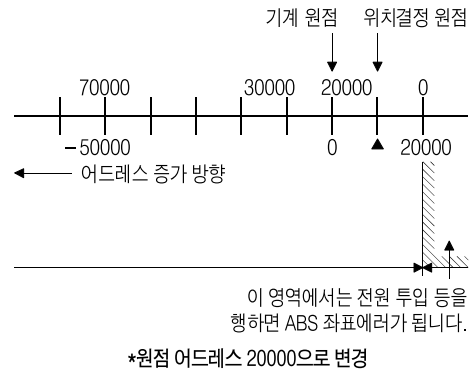
, PC - RESET ON/OFF . ( . )  
ABS (Y4B) .



0 , 가 ON/OFF 가



a) ( No.14)=0



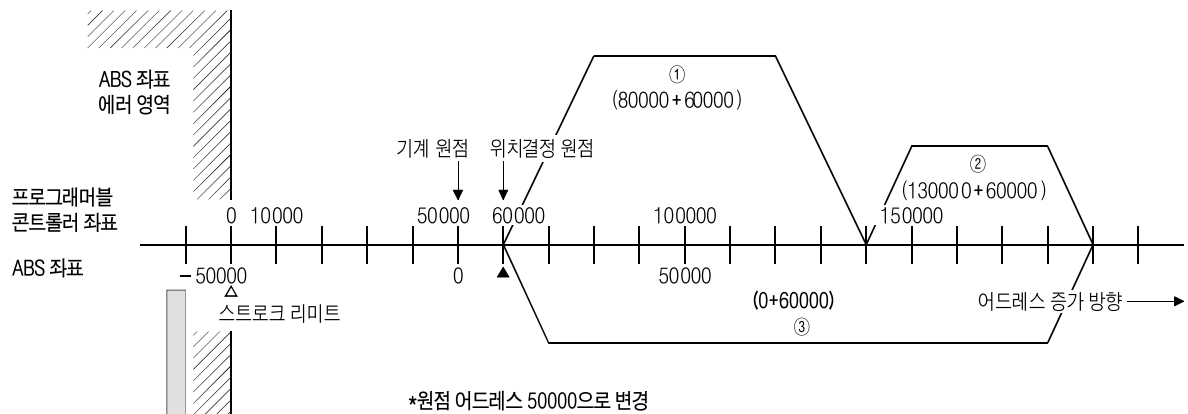
b) ( No.14)=1

(c)

가

( )

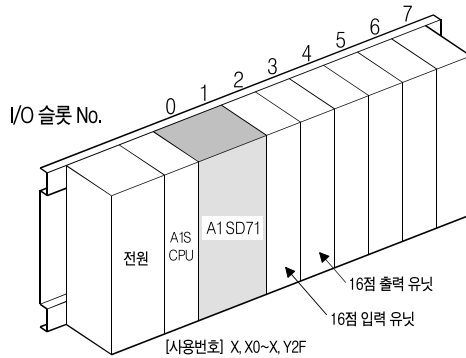
80000(PC 140000)  
130000(PC 190000)  
0(PC 60000)



( No.14)=0

(d)

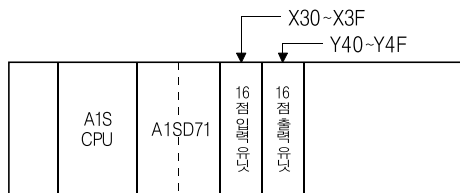
I/O 0 · 1 , 16 (X · Y) 2 , 16 3 X · Y (M · D · T ) A1SD71



프로그램 예의 배열

(e)

A1SD71 I/O 48 2 , GPP 16 32 A1SD71 FROM/TO , A1SD71

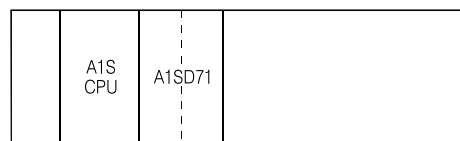


주. 본 항 (3)의 프로그램에는 1축용의 샘플 프로그램 예로 왼쪽에 기재한 슬롯으로 할당되어 있습니다. 2축의 ABS 시스템으로 할 경우는, I/O의 입출력 점수를 증가하여 대응하십시오.

X, Y000 } X, Y010 } FROM/TO 명령으로 설정한 입출력 번호  
X, Y00F } X, Y02F }

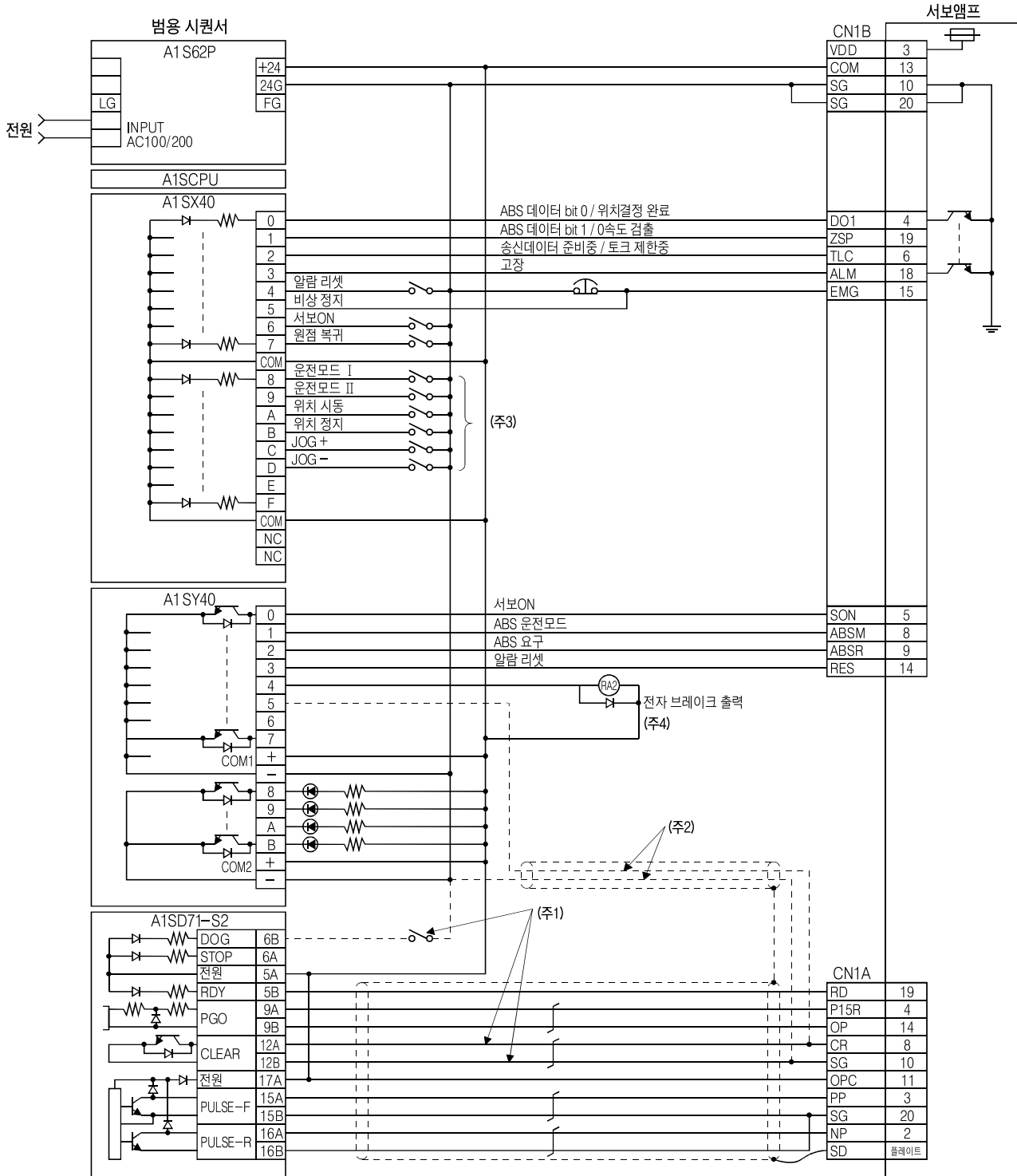
FROM/TO A1SD71 +010H가

GPP I/O , A1SD71 0 FROM/TO A1SD71 16 .



X, Y000 } FROM/TO 명령으로 설정한 입출력 번호  
X, Y00F }

(2)



- ) 1. . . . . 2
- 2. . . . . 1
- 3. . . . .
- 4. . . . .

(3)

(a)

1 (X ) ABS  
 ON(SON) OFF ON (trigger) ABS  
 ON GND  
 PC - RESET RUN ABS  
 가 ABS  
 3  
 ABS (Y41) ON ,ABS 가 (Y4AON)  
 (X32) OFF (ON OFF)  
 ,ABS 가 (Y4AON)  
 ABS A1SD71(AD71) No.14( )  
 가 A1SD71(AD71) ( - )  
 ABS 가 (Y4BON)

(b)

X		Y	
X30	ABS bit 0 /	Y40	ON
X31	ABS bit 1 /	Y41	ABS
X32	ABS /	Y42	ABS
X33		Y43	
X34		Y44( 2)	
X35		Y45( 1)	
X36	ON	Y48	
X37		Y49	ABS
X38		Y4A	ABS
X39		Y4B	ABS
D		M	
D0	ABS	M0	ABS
D1		M1	
D2	가	M2	NG
D3	ABS 16bit	M3	ABS
D4	ABS 16bit	M4	가
D5	ABS 2bit	M5	2bit
D6		M6	ABS 2bit
D7		M7	ABS 2bit
D8		M8	ON
D9	16bit	M9	
D10	16bit	M10	ABS
D100	16bit	M11	
D101	16bit	M12	
T		M13	PSL
T0	ABS	M20( 1)	ON
T1	ABS	M21( 2)	
T2		C	
T3	ABS	C0	ABS
T10( 1)	ON	C1	
T200	10ms	C2	

- ) 1.
- 2.

(c) X ABS

A1SD71 - S2(SD71)

3 = pulse(PLS)

1

1 = 1pulse

,1

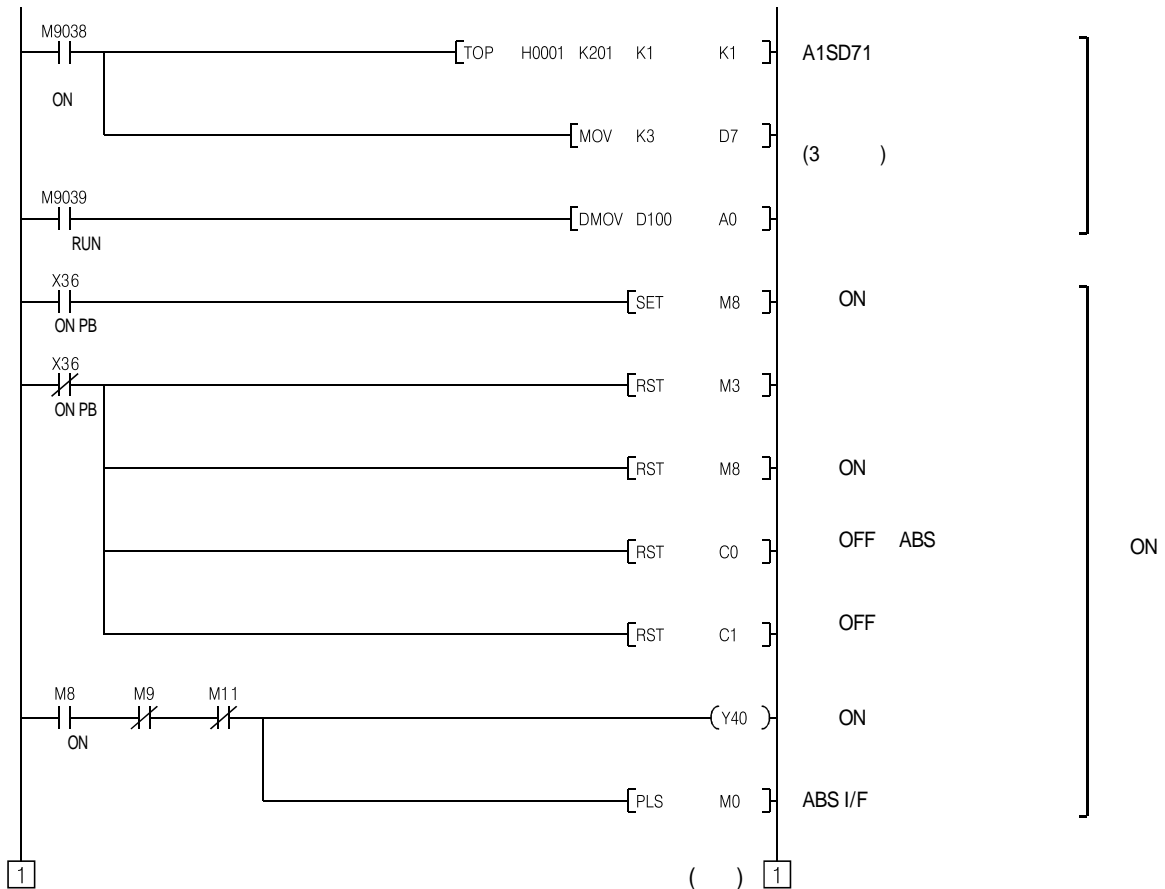
가

가

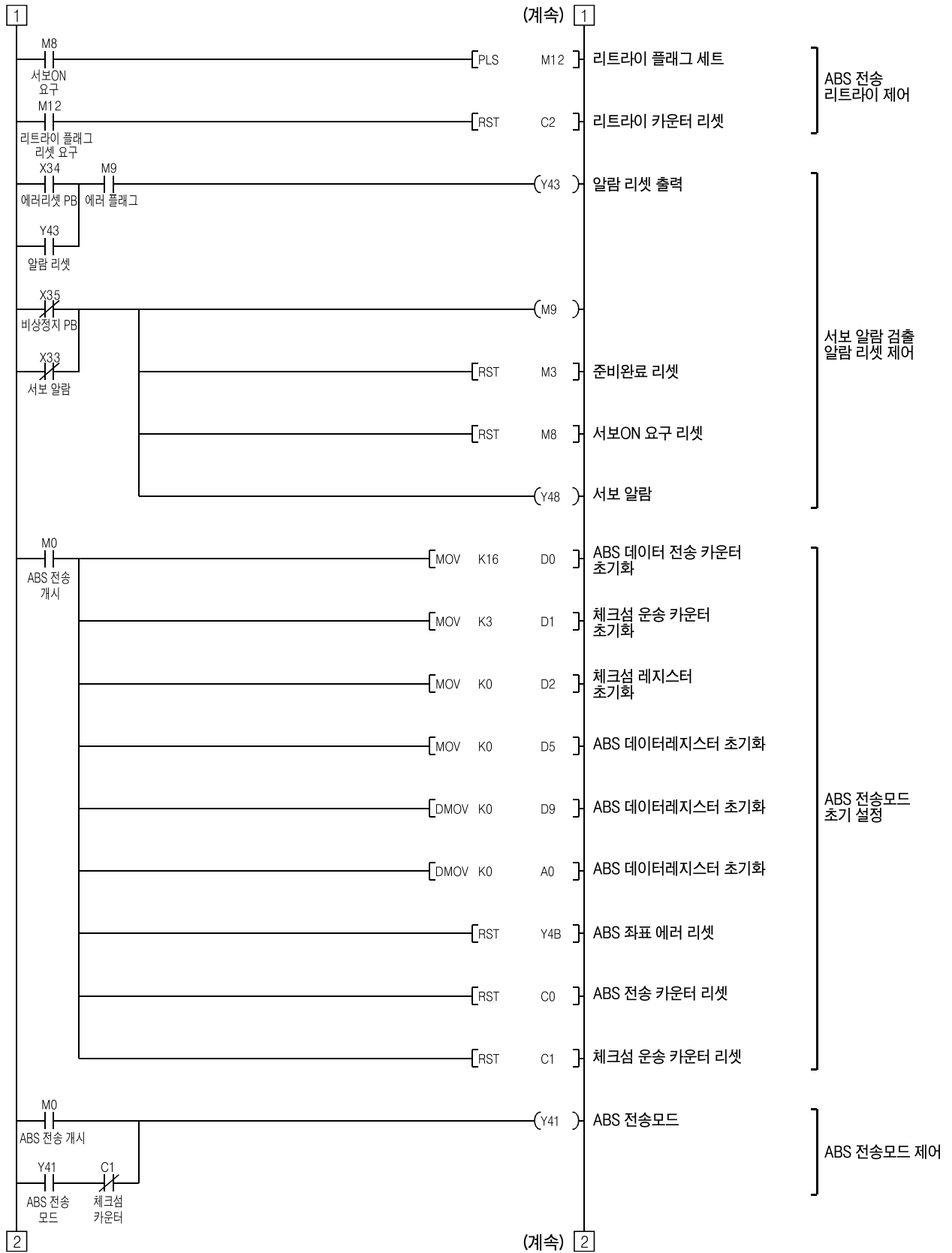
<< 가 >>

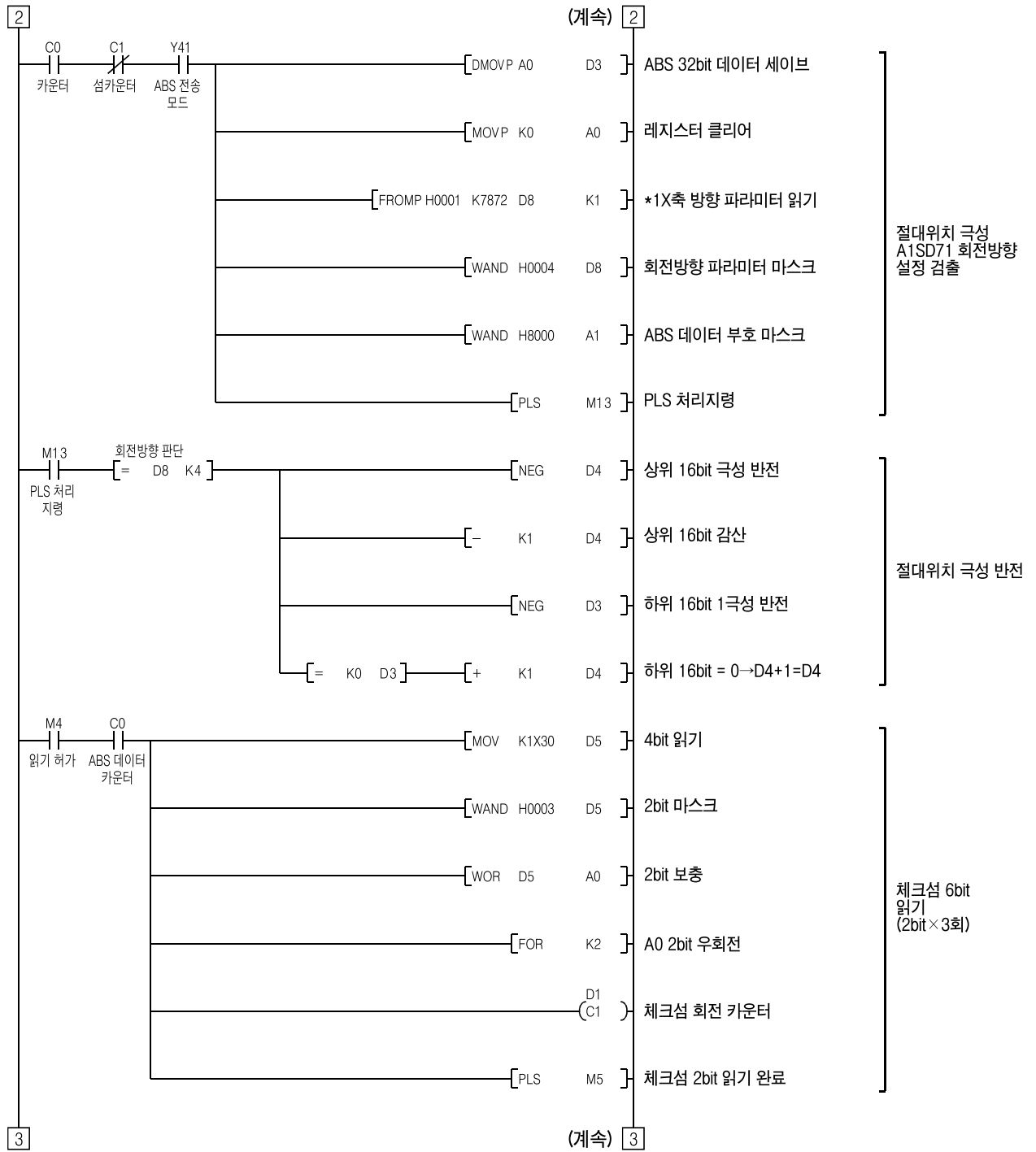
— [ D * P K D3 D3 ]	mm			inch			degree			pulse
	0			1			2			3
1	0.1~	1.0~	10.0	0.00001 ~	0.0001 ~	0.001 ~	0.00001 ~	0.0001 ~	0.001 ~	/
	μm/PLS			inch/PLS			degree/PLS			
K	1~	10~	100	1~	10~	100	1~	10~	100	

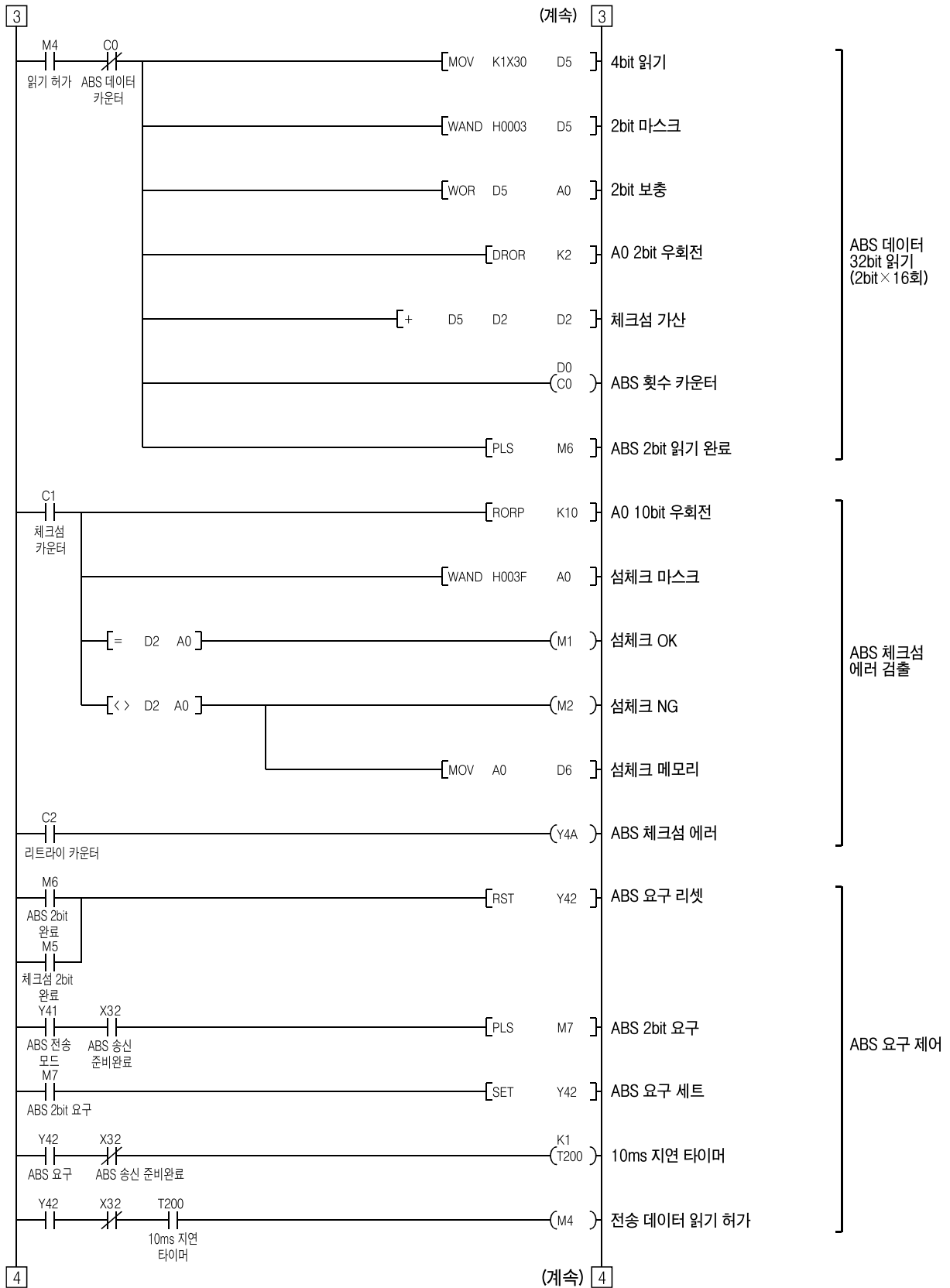
- 1μm/PLS    K    10
- 5μm/PLS    K    50
- pulse    가

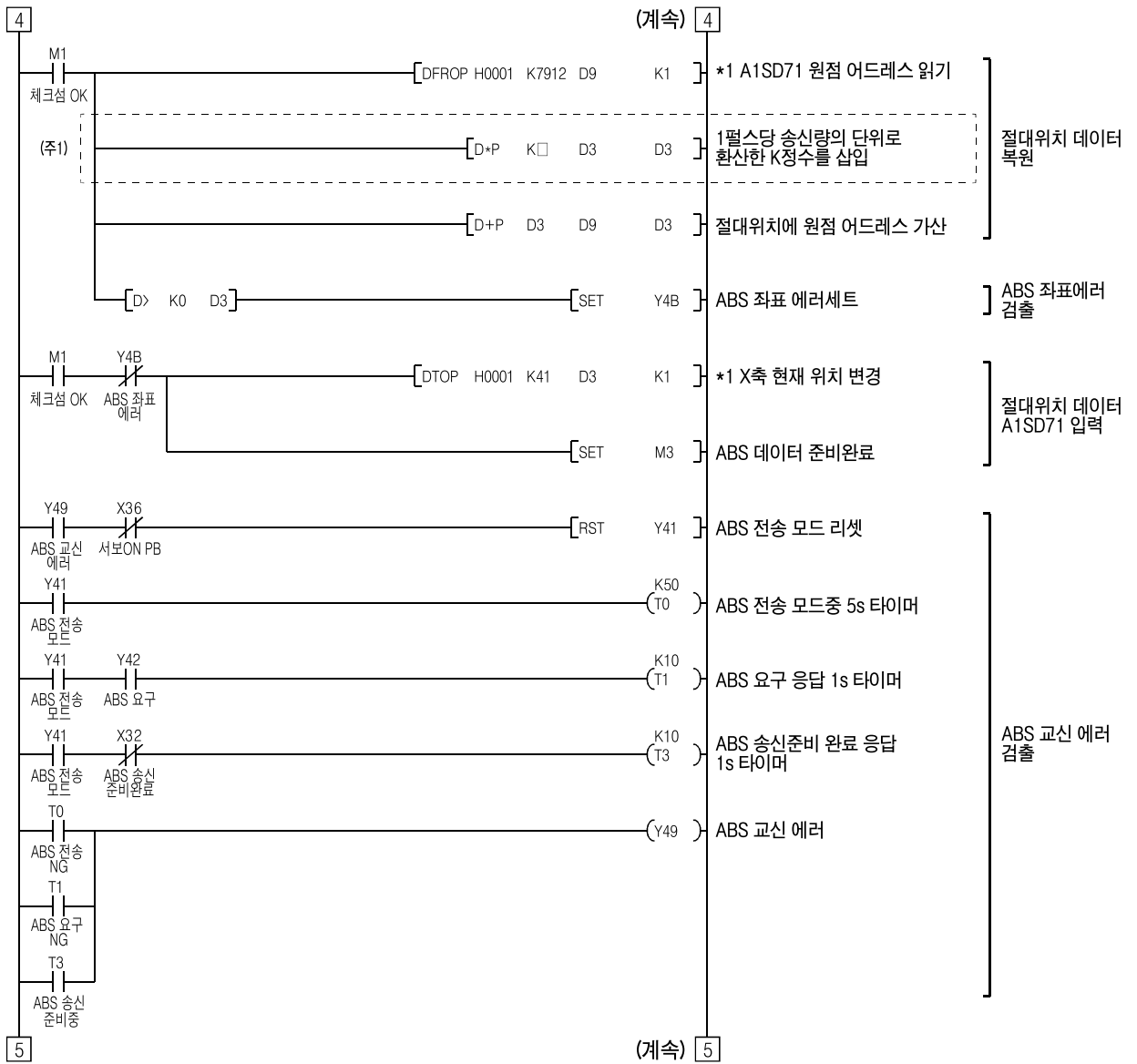












) A1SD71

× 0.1μm

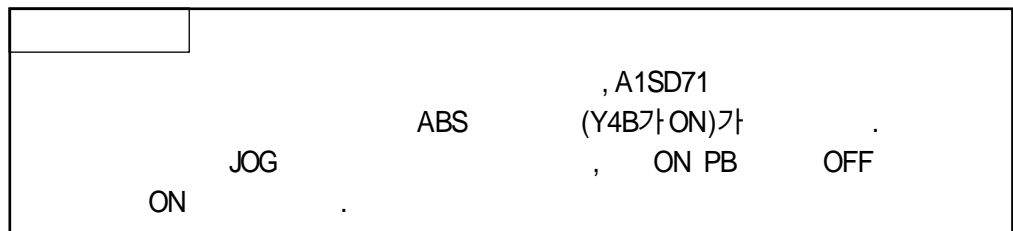
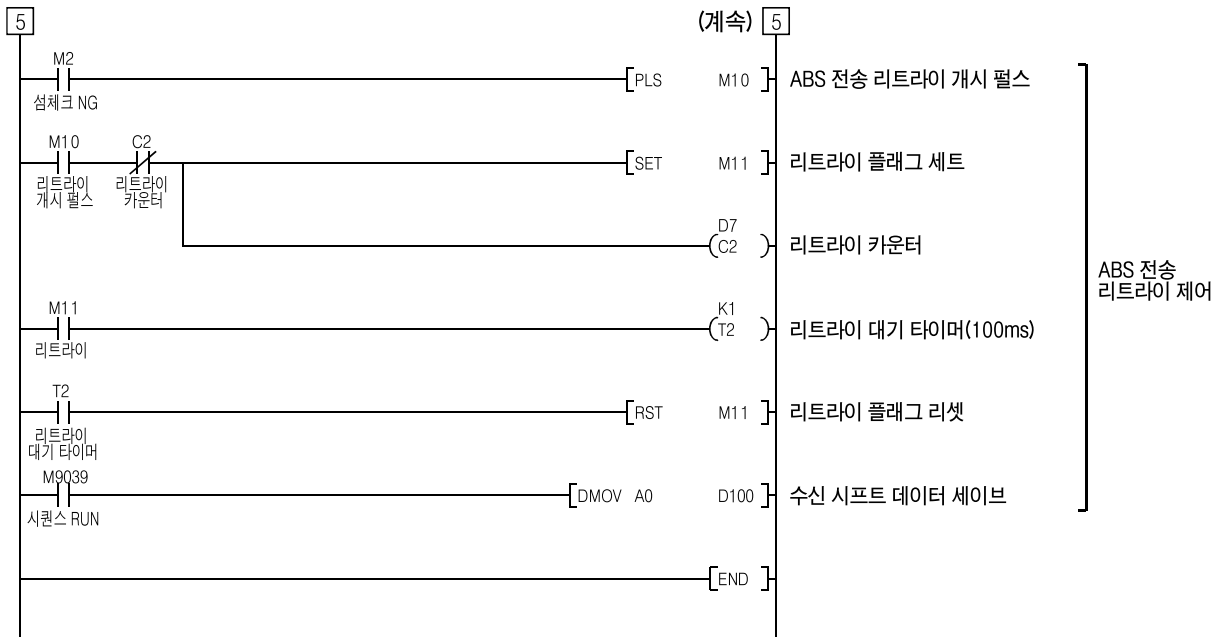
" 3 " pulse

× 1μm

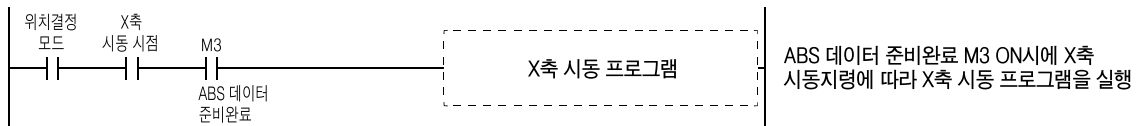
" 0 " mm

, 10

가

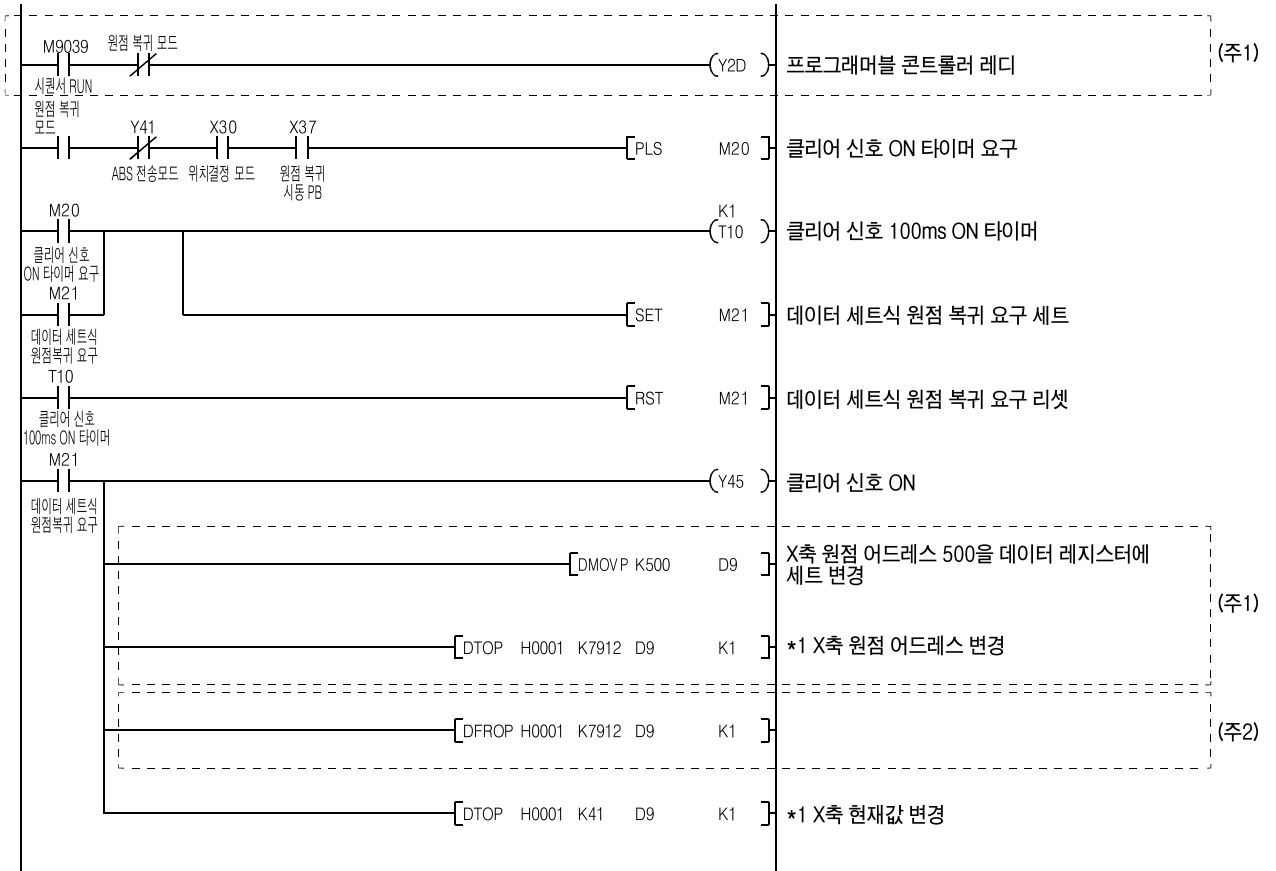


(d) X  
ABS (M3) OFF X



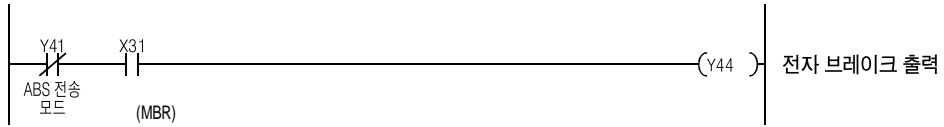
(e)  
A1SD71

(f) JOG (PBON) ( 500 ) , 1 가 . (Y45) ON 가 .



) 1. , 가 , 2 A6GDP  
 2. 1 , 가 .  
 , 1 .

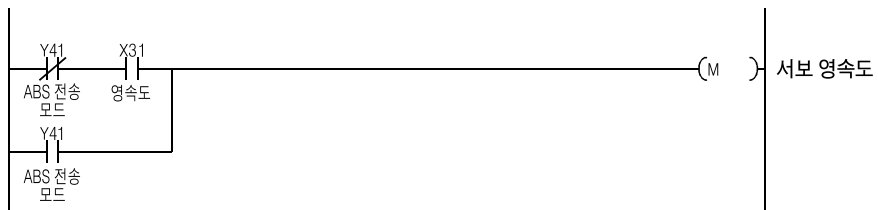
(g) ABS ( ON ON ) 가  
 No.1 " 1 1 "



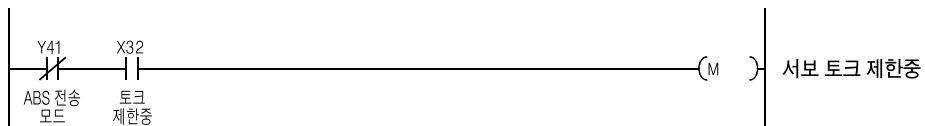
(h) ABS ( ON ON ) 가



(i) ABS ( ON ON ) 가



(i) ABS ( ON ON ) OFF

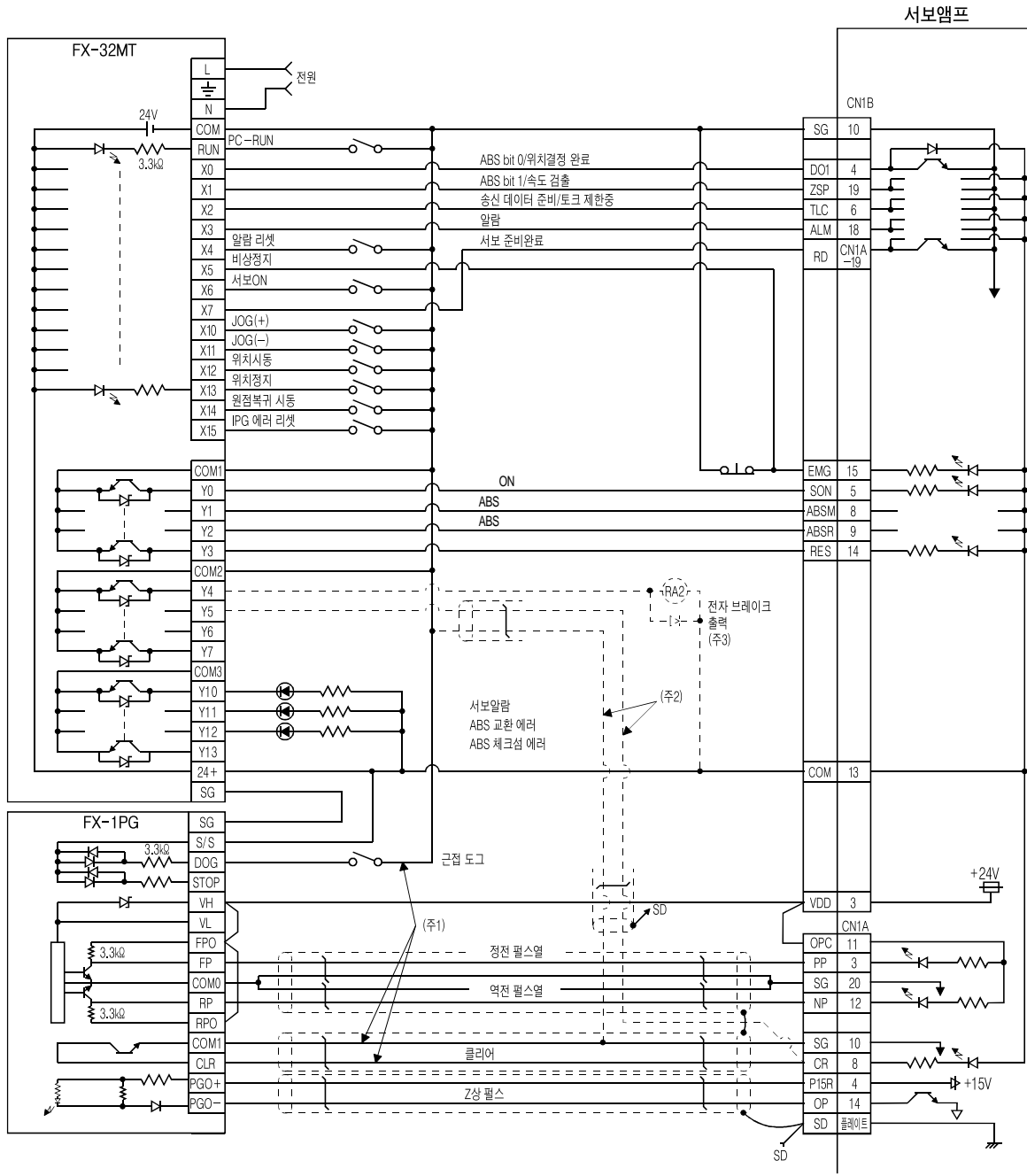






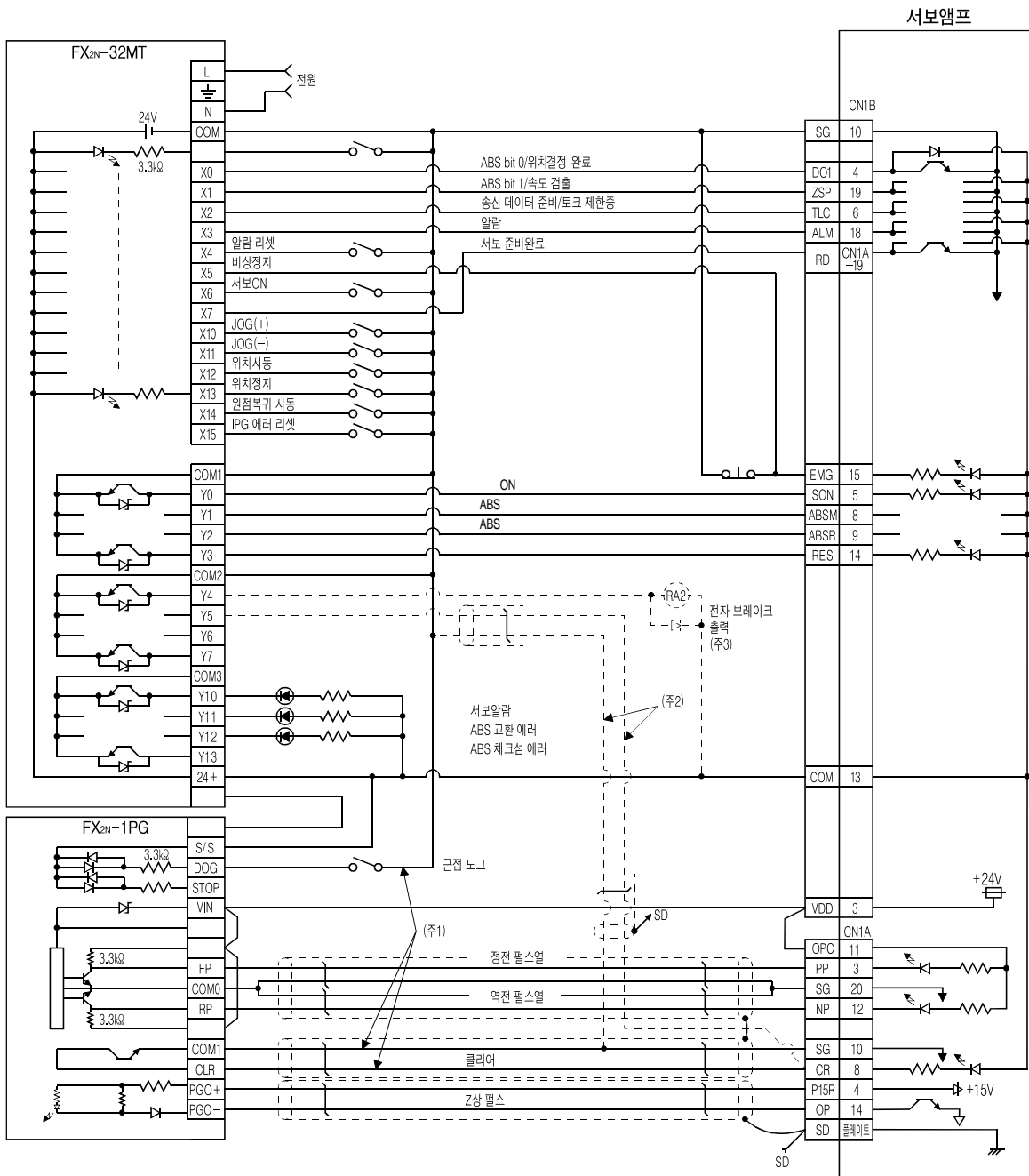
15.8.2 MELSEC FX<sub>(2N)</sub> - 32MT(FX<sub>(2N)</sub>-1PG)

(1)  
(a) FX - 32MT(FX - 1PG)



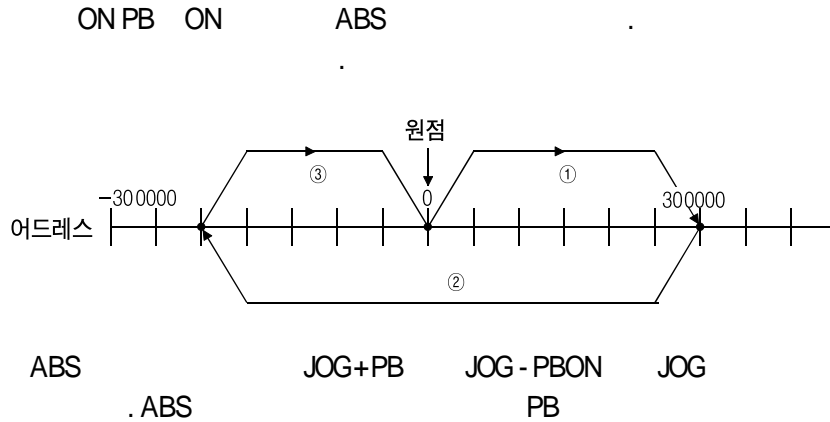
- ) 1. . . . . 2  
 2. . . . . 1  
 3. . . . . (MBR)

(b) FX<sub>2N</sub> - 32MT (FX<sub>2N</sub> - 1PG)



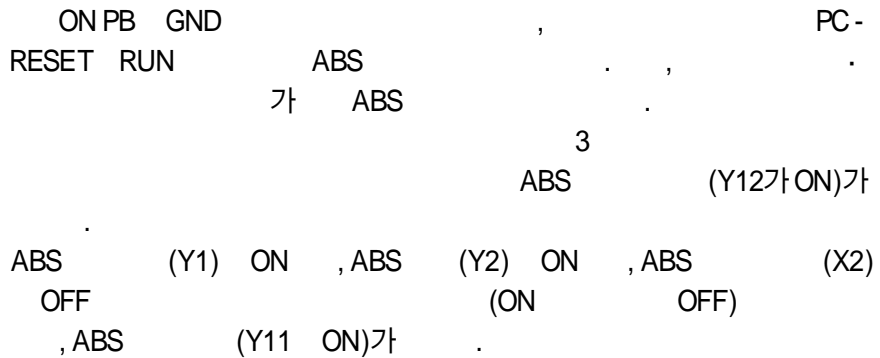
- ) 1. . . . . 2  
 2. . . . . 1  
 3. . . . . (MBR)

(2)  
(a)



BFM#26 FX(2N) - 1PG

BFM					
16	16				
#2	#0		A	2000	: Pulse
	#1		B	1000	
	#3			H0000	
#5	#4	x	Vma	10000PPS	: Pulse
	#6		Vbia	0PPS	
#8	#7	JOG	Vjog	10000PPS	
#10	#9	( )	VRT	50000PPS	10
	#11	( )	VCL	1000PPS	
	#12		N	2 Pulse	
#14	#13		HP	0	100
	#15	가	Ta	200ms	
	#16	가			
#18	#17	( )	P( )	0	10
#20	#19	( )	V( )	100000	
#22	#21	( )	P( )	0	
#24	#23	( )	V( )	10	H0000
	#25				

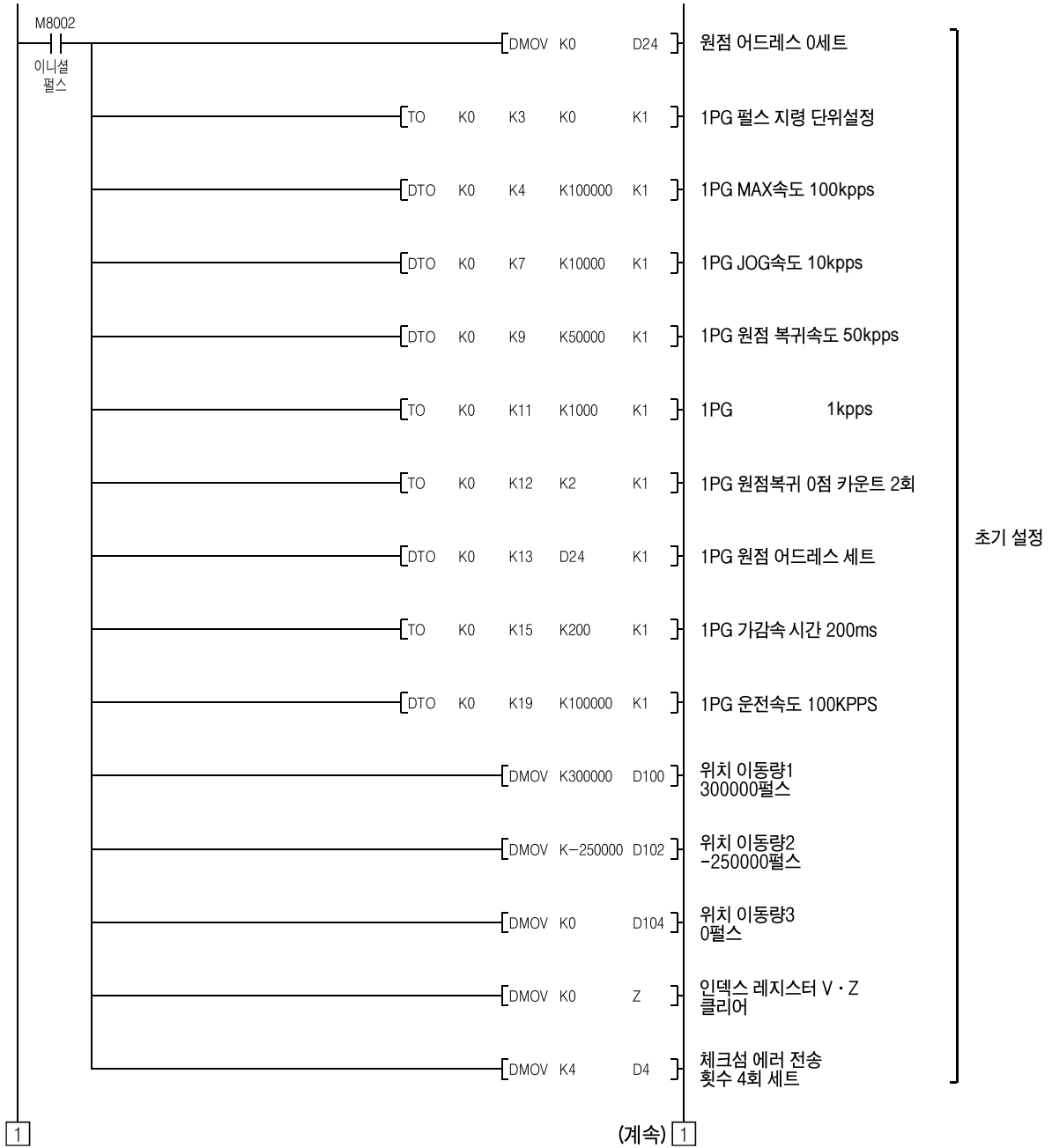


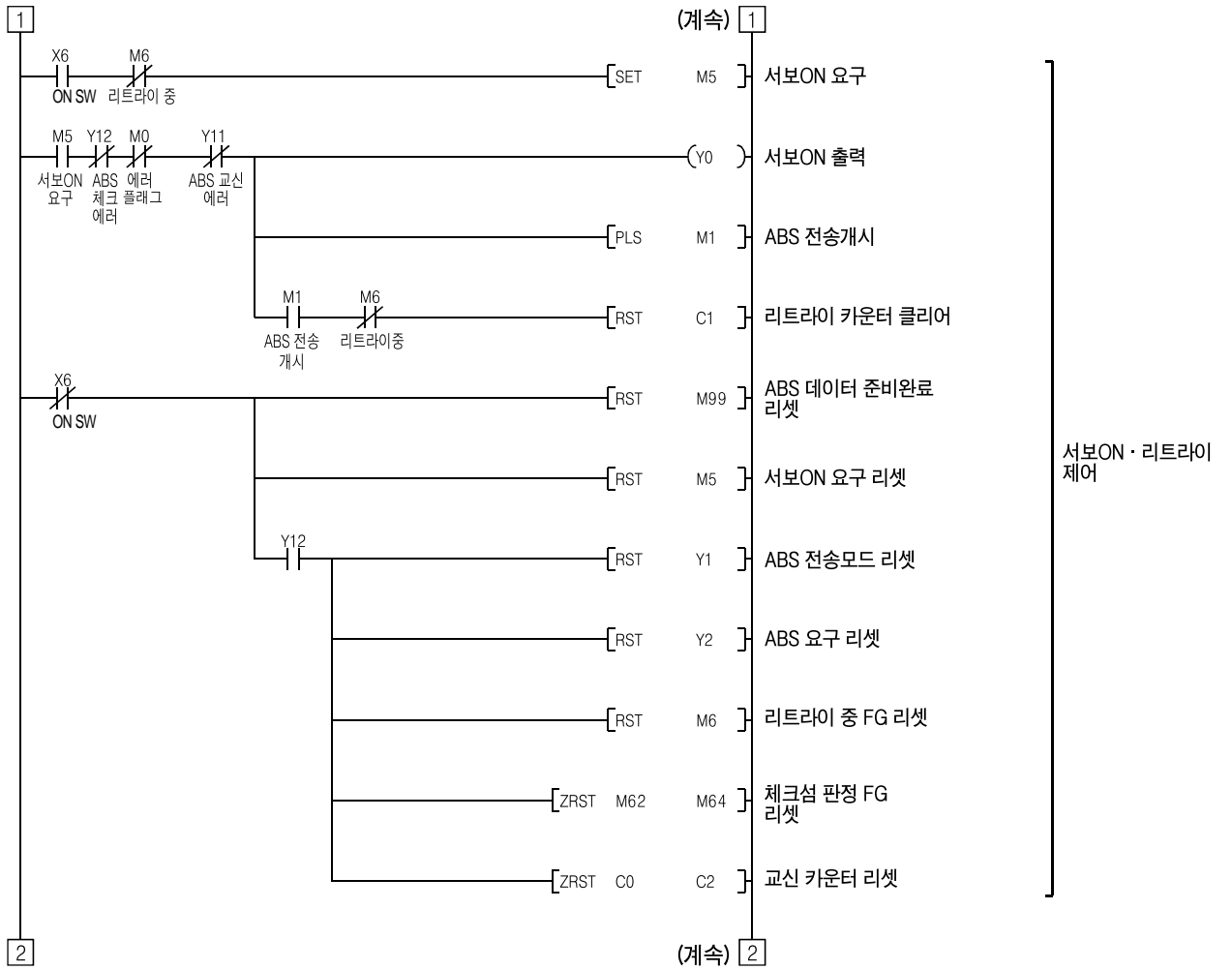
(b)

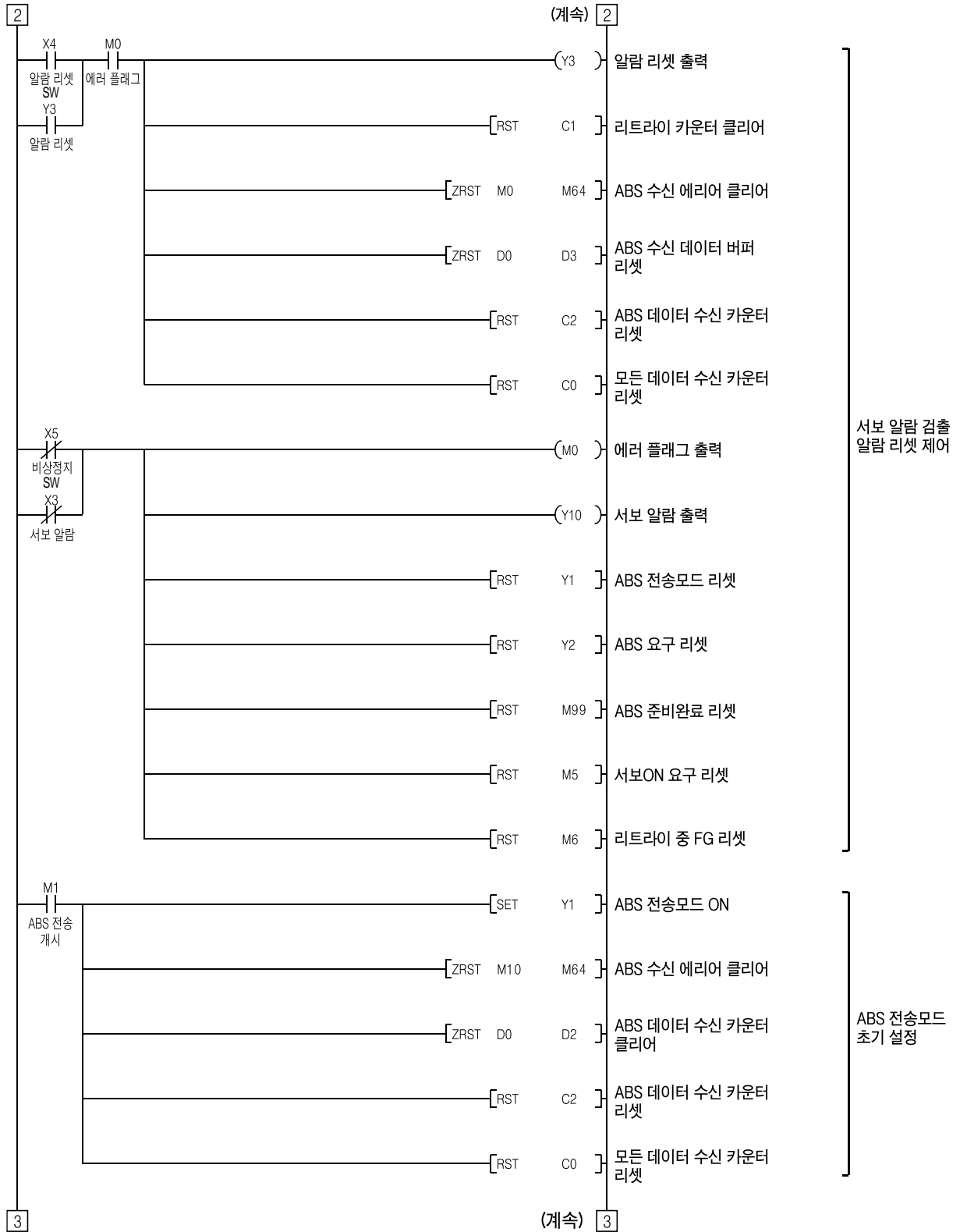
X		Y	
X0	ABS bit0/	Y0	ON
X1	ABS bit1/	Y1	ABS
X2	ABS /	Y2	ABS
X3		Y3	
X4	PB	Y4( 2)	
X5		Y5( 1)	
X6	ON PB	Y10	
X7		Y11	ABS
X10	JOG(+) PB	Y12	ABS
X11	JOG(-) PB		
X12	PB		
X13	PB		
X14	PB		
X15	1PG		
D		M	
D0	ABS 16bit	M0	
D1	ABS 16bit	M1	ABS
D2	가	M2	
D3		M3	ABS
D4		M4	
D24	16bit	M5	ON
D25	16bit	M6	
D106	1PG 16bit	M10	
D107	1PG 16bit	M11	ABS 2bit
		M12	
		M13	
		M20	ABS 32bit
		M51	
		M52	6bit
		M57	
		M58	
		M59	
		M62	( ) >
		M63	( ) =
		M64	( ) >
		M70( 1)	ON
		M71( 1)	
		M99	ABS
T		C	
T200		C0	(19 )
T201	ABS	C1	
T202	ABS	C2	ABS (16 )
T203	ABS		
T204	ABS		
T210( 1)	ON		

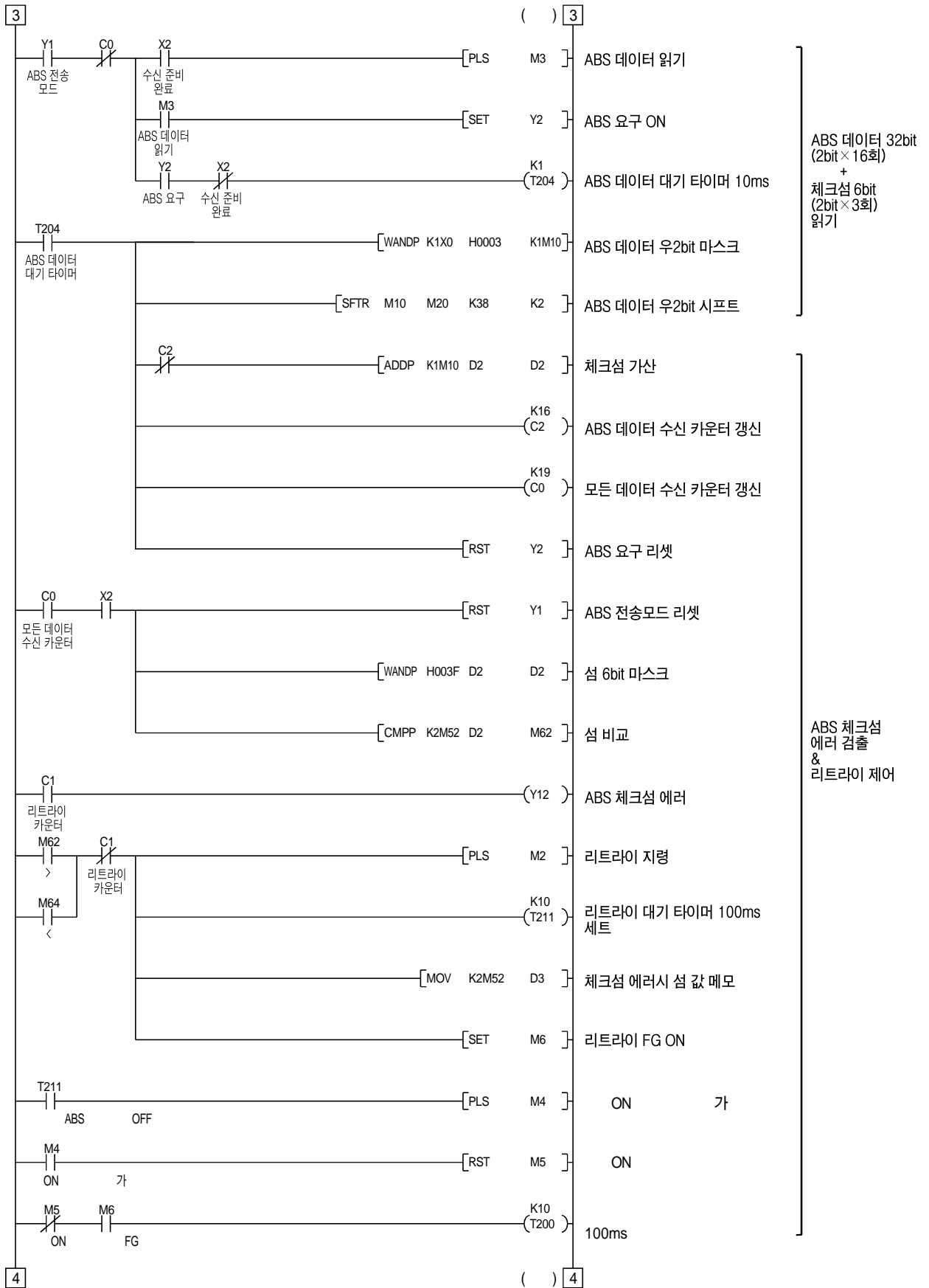
- ) 1.
- 2.

(c) X ABS

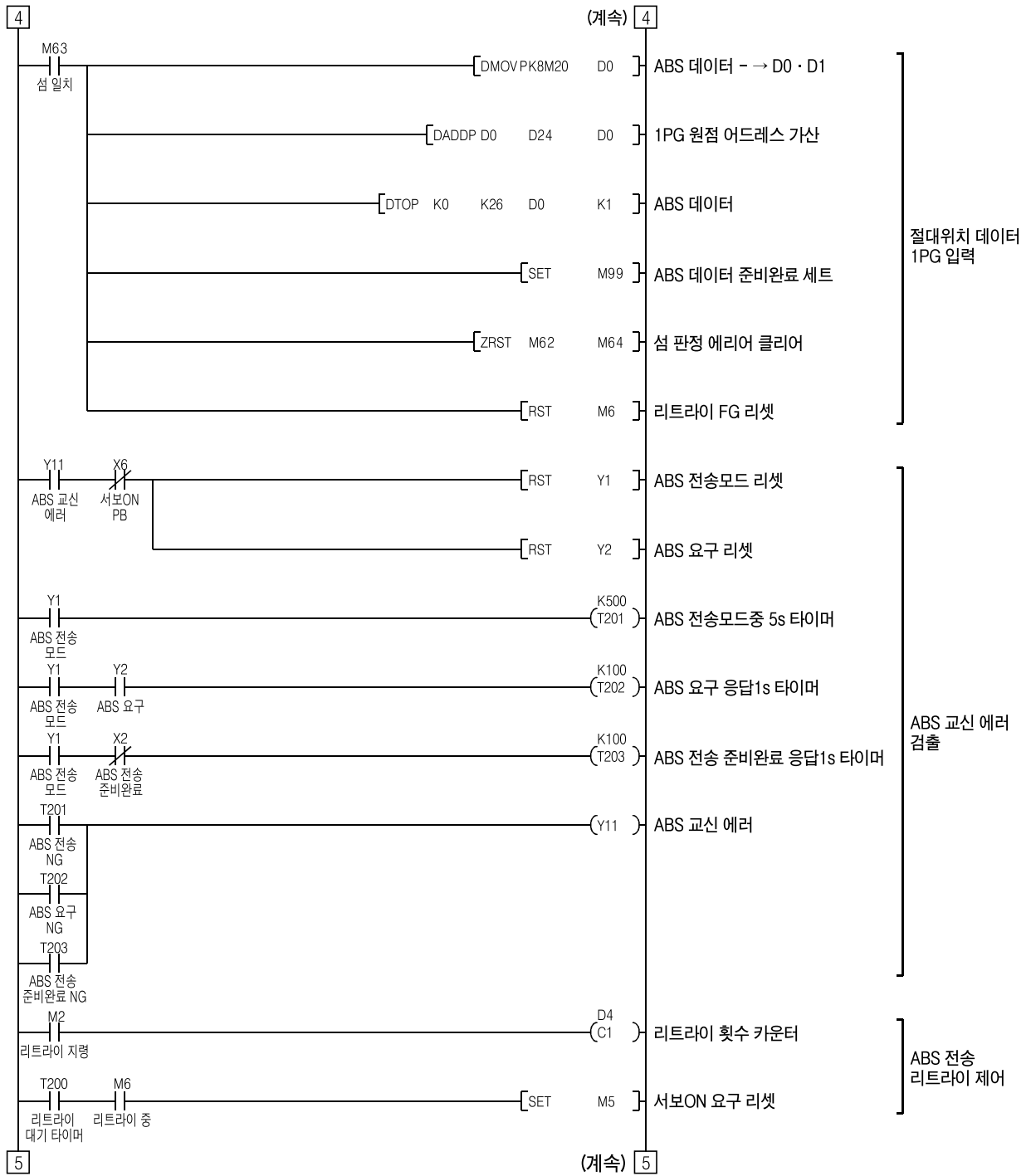


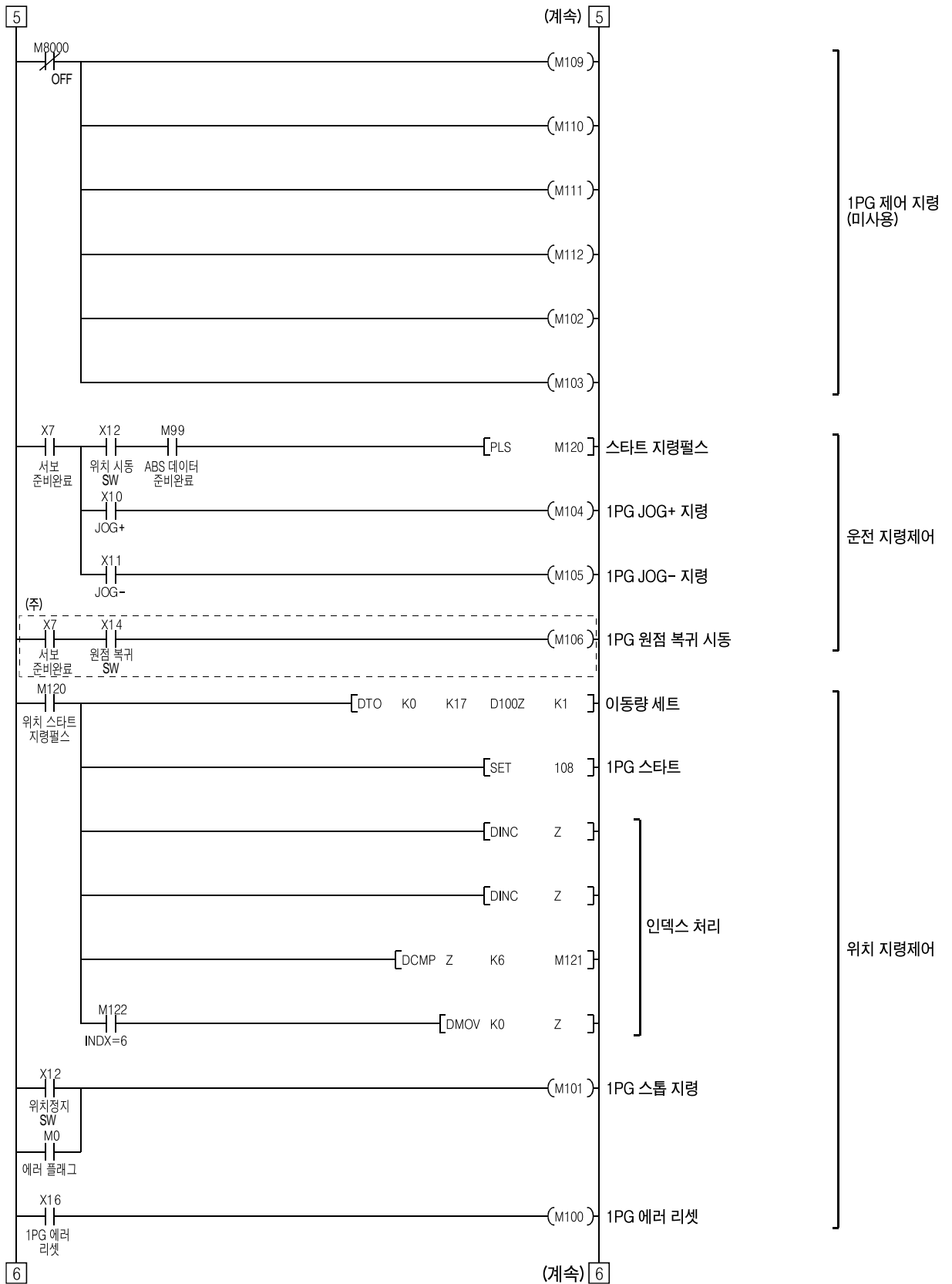




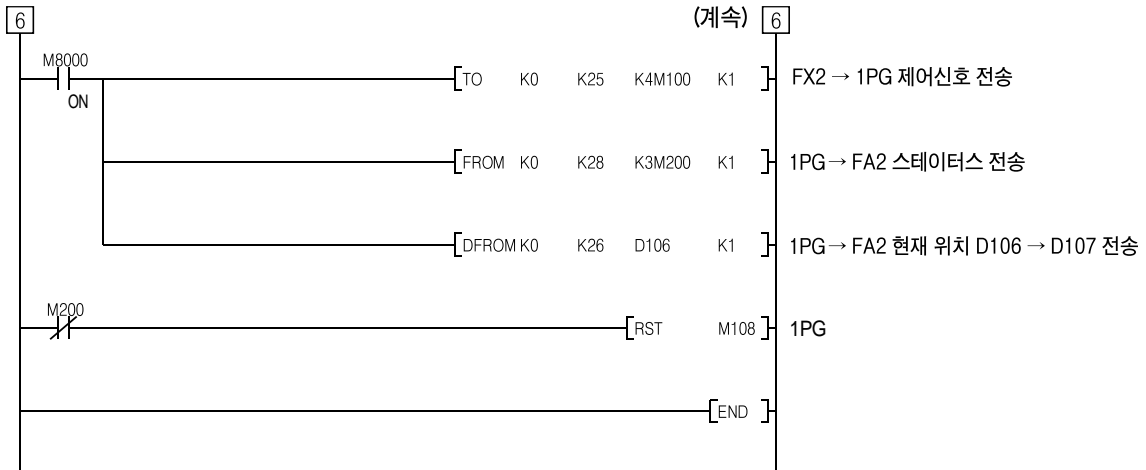




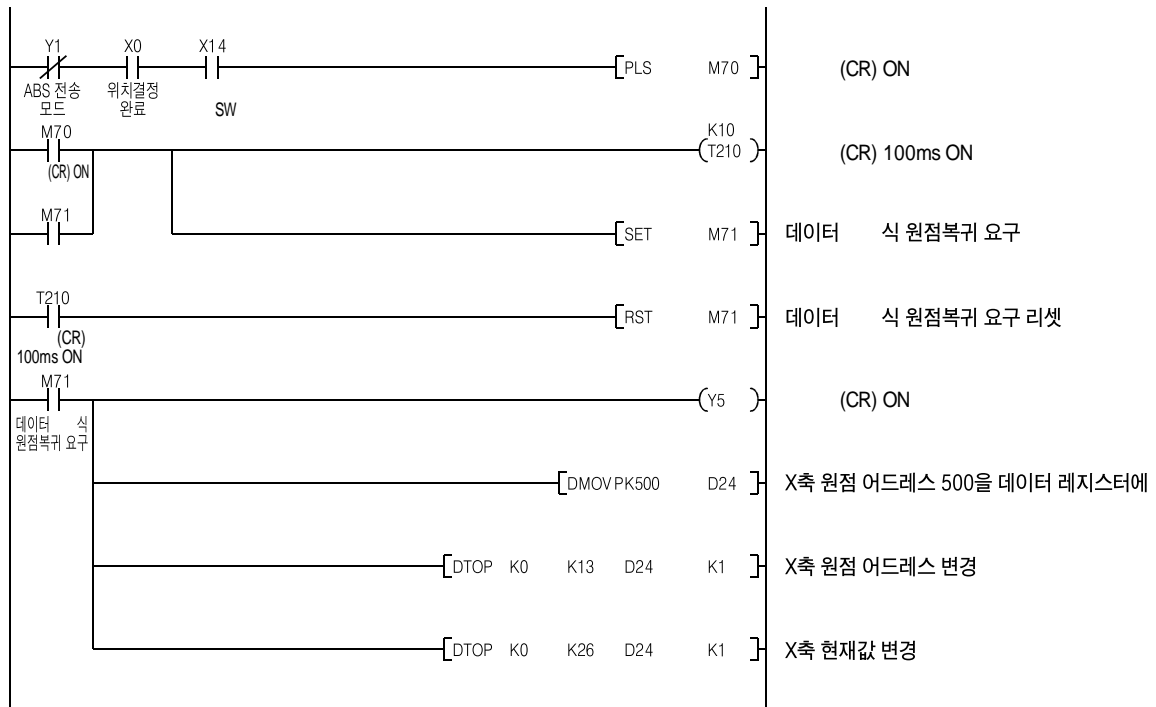




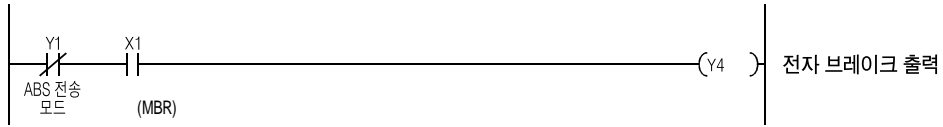
(2)(d)



(d) JOG (PBON) ( 500 ) ,  
 . 1 ON 가 .  
 (Y45)



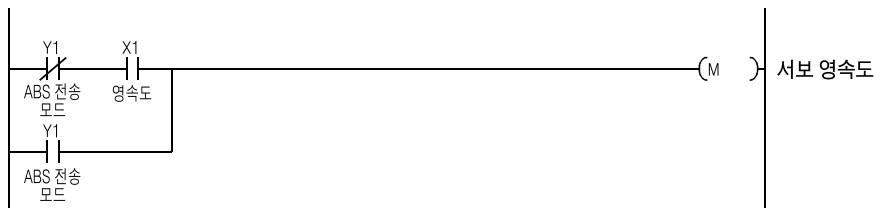
(e) ABS ( ON ON ) 가  
 No.1 “ 1 1 ” (MBR)



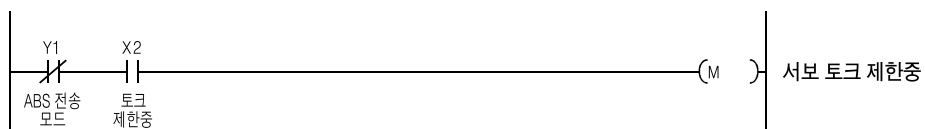
(f) ABS ( ON ON ) 가



(g) ABS ( ON ON ) 가



(h) ABS ( ON ON ) OFF

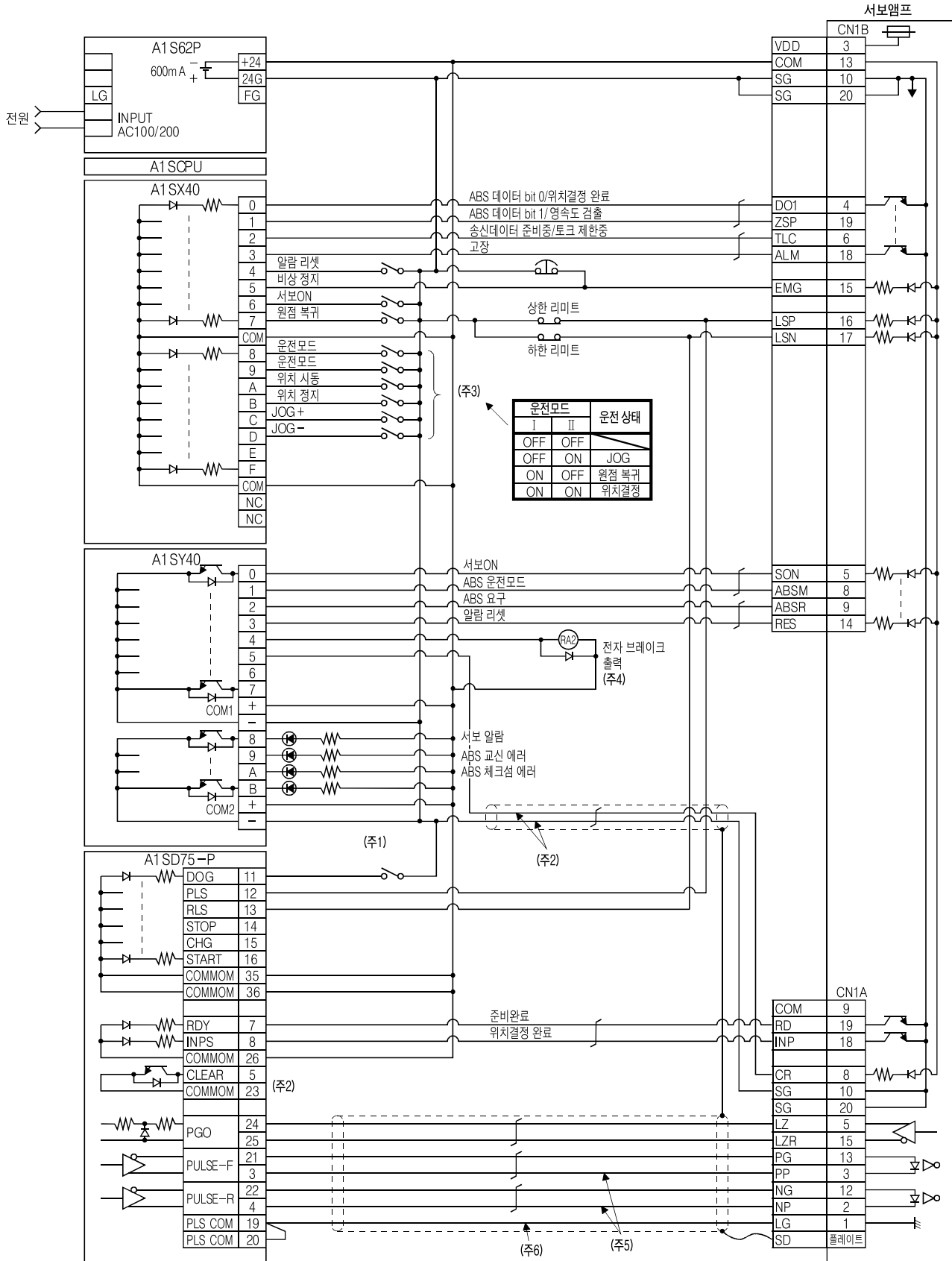


FX(2N)

(FX(2N) - 1PG) ABS

15.8.3 MELSEC A1SD75(AD75)

(1)





(2)

(a)

ON PB ABS  
 ON PB GND  
 PC - RESET RUN ABS  
 가 ABS  
 , ABS 가 3  
 ABS (Y31) ON , ABS (Y32) ON , ABS (Y3AON)  
 (X22) OFF (ON OFF)  
 , ABS 가 .(Y3AON)

(b)

X		Y	
X20	ABS bit 0 /	Y30	ON
X21	ABS bit 1 /	Y31	ABS
X22	ABS /	Y32	ABS
X23		Y33	
X24		Y34( 2)	
X25		Y35( 1)	
X26	ON	Y38	
X27		Y39	ABS
X28		Y3A	ABS
X29			
D		M	
D0	ABS	M5	ABS
D1		M6	
D2	가	M7	NG
D3	ABS 16bit	M8	ABS
D4	ABS 16bit	M9	가
D5	ABS 2bit	M10	2bit
D6		M11	ABS 2bit
D7		M12	ABS 2bit
D8		M13	ON
D9	16bit	M14	
D10	16bit	M15	ABS
D11		M16	
D12		M17	
D110	16bit	M18	PSL
D111	16bit	M20( 1)	ON
		M21( 2)	
T		C	
T0	ABS	C0	ABS
T1	ABS	C1	
T2		C2	
T3	ABS		
T10( 1)	ON		
T200	10ms		

- 1.
- 2.

(c) X ABS

A1SD75 - P1 (AD75 - P1)

3 = pulse(PLS)

1

1 = 1pulse

, 1

가

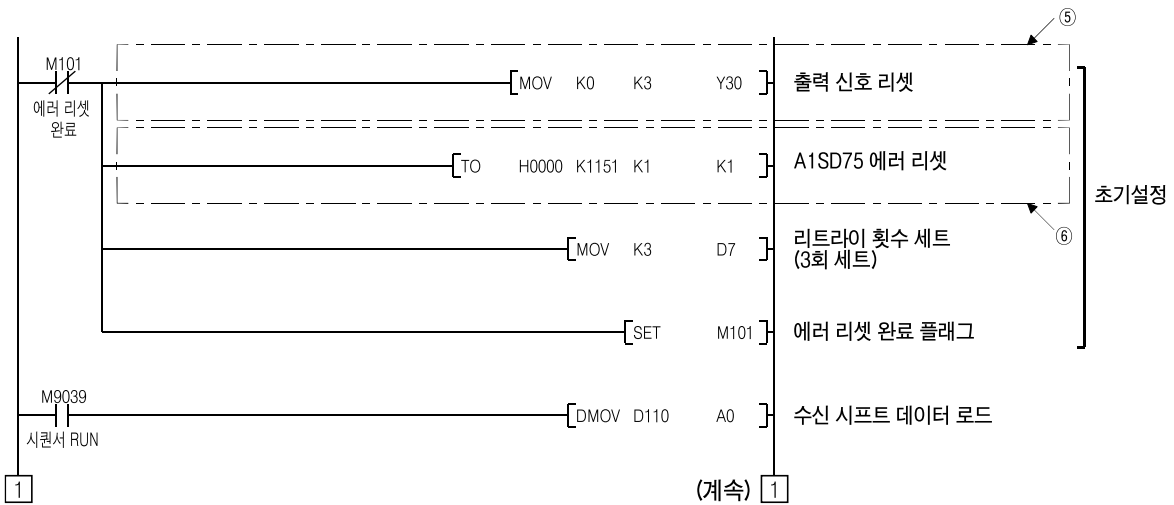
가

<< 가 >>

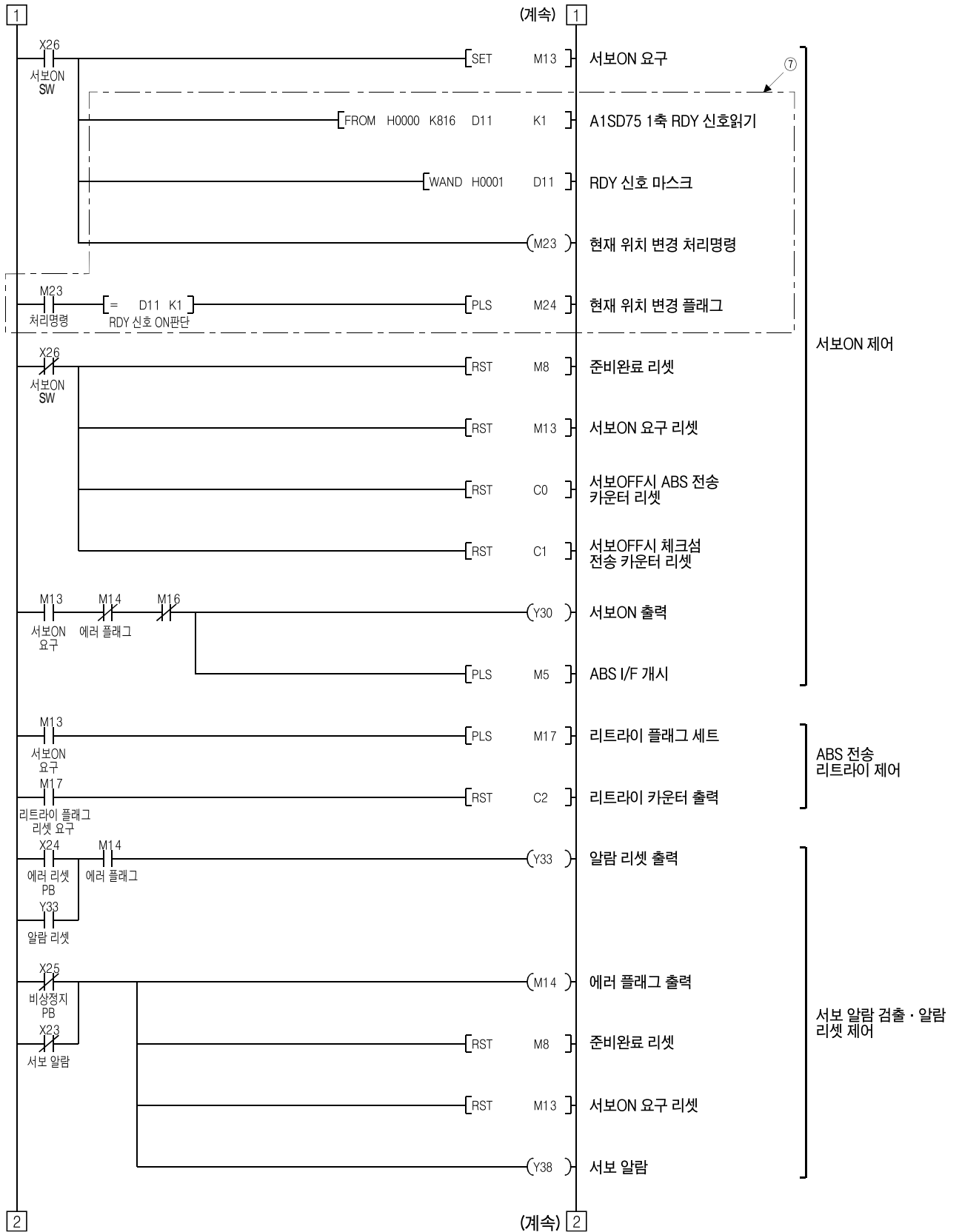
[ D \* P K D3 D3 ]

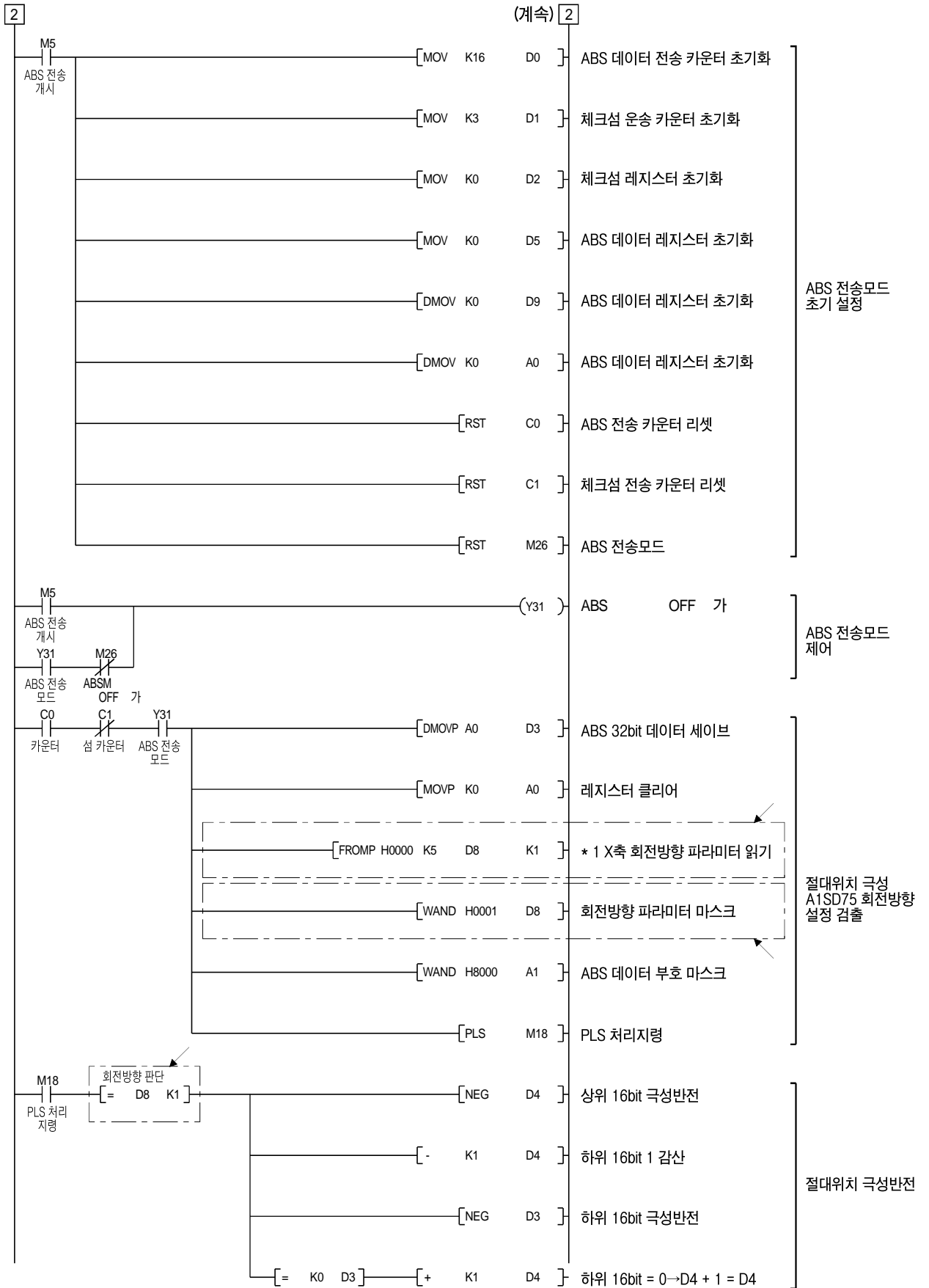
	mm				inch				degree				pulse
	0				1				2				3
1	0.1~	1~	10~	100	0.00001~	0.0001~	0.001~	0.01~	0.00001~	0.0001~	0.001~	0.01~	
	μm/PLS				inch/PLS				degree/PLS				PLS
K	1~	10~	100~	1000~	1~	10~	100~	1000~	1~	10~	100~	1000~	

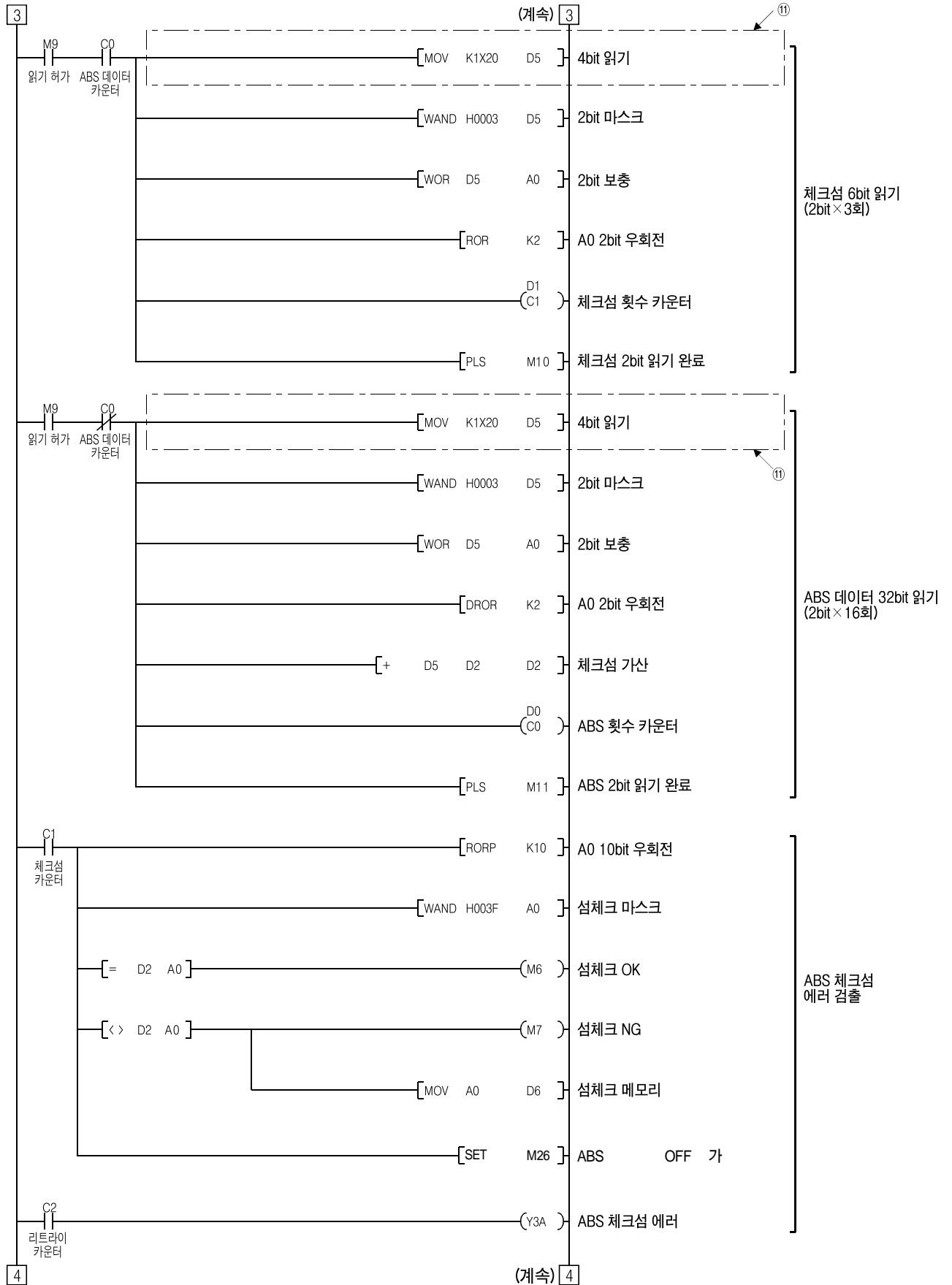
- 1μm/PLS      K    10
- 5μm/PLS      K    50
- pulse    가



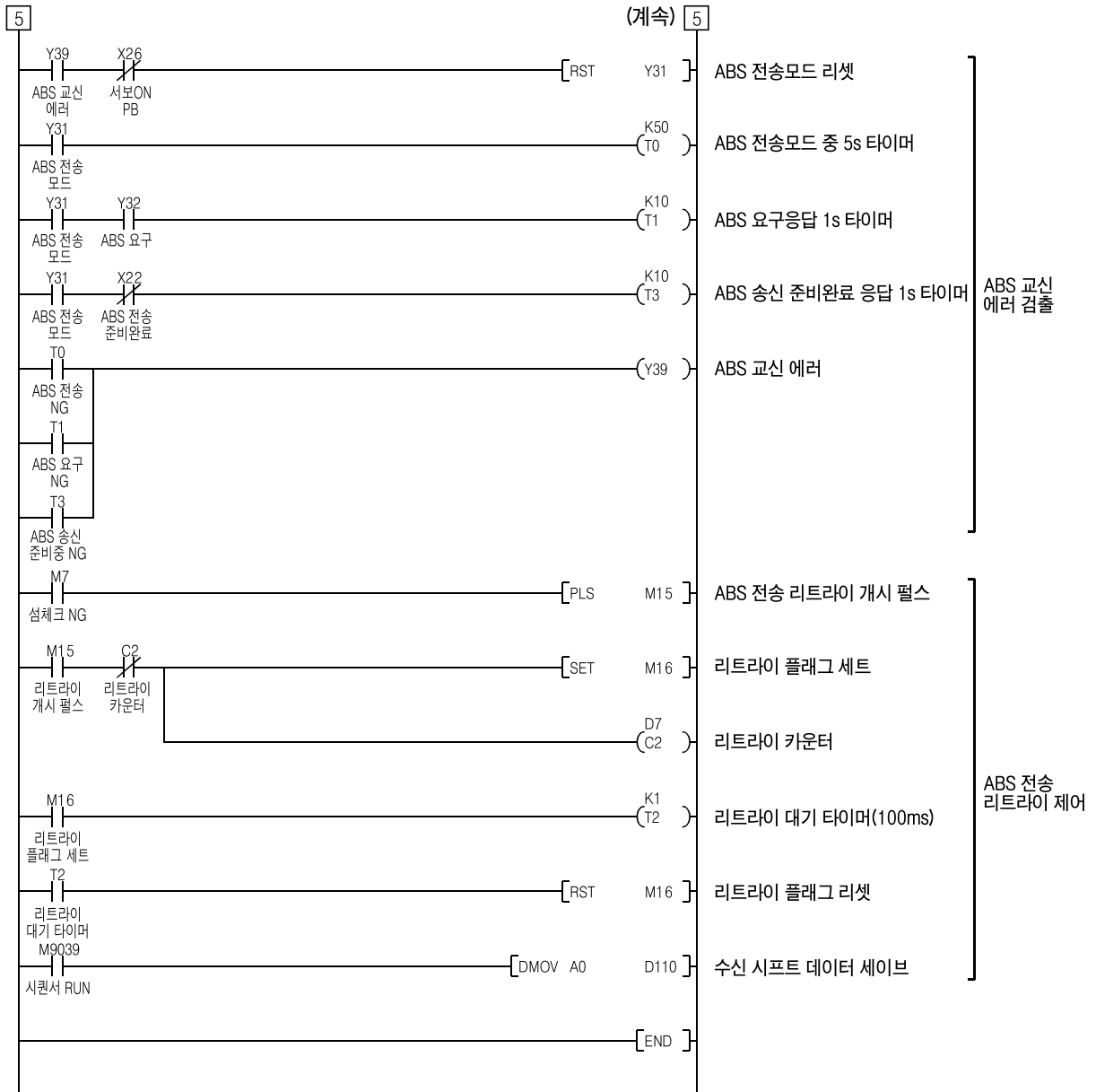




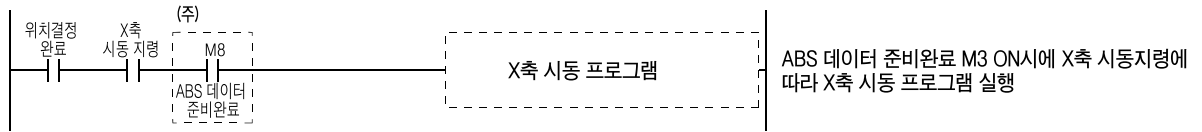




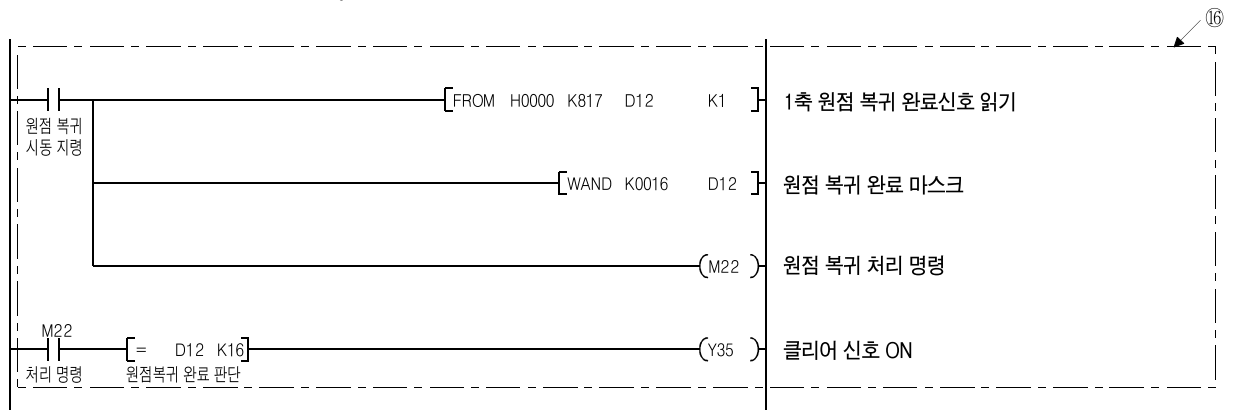




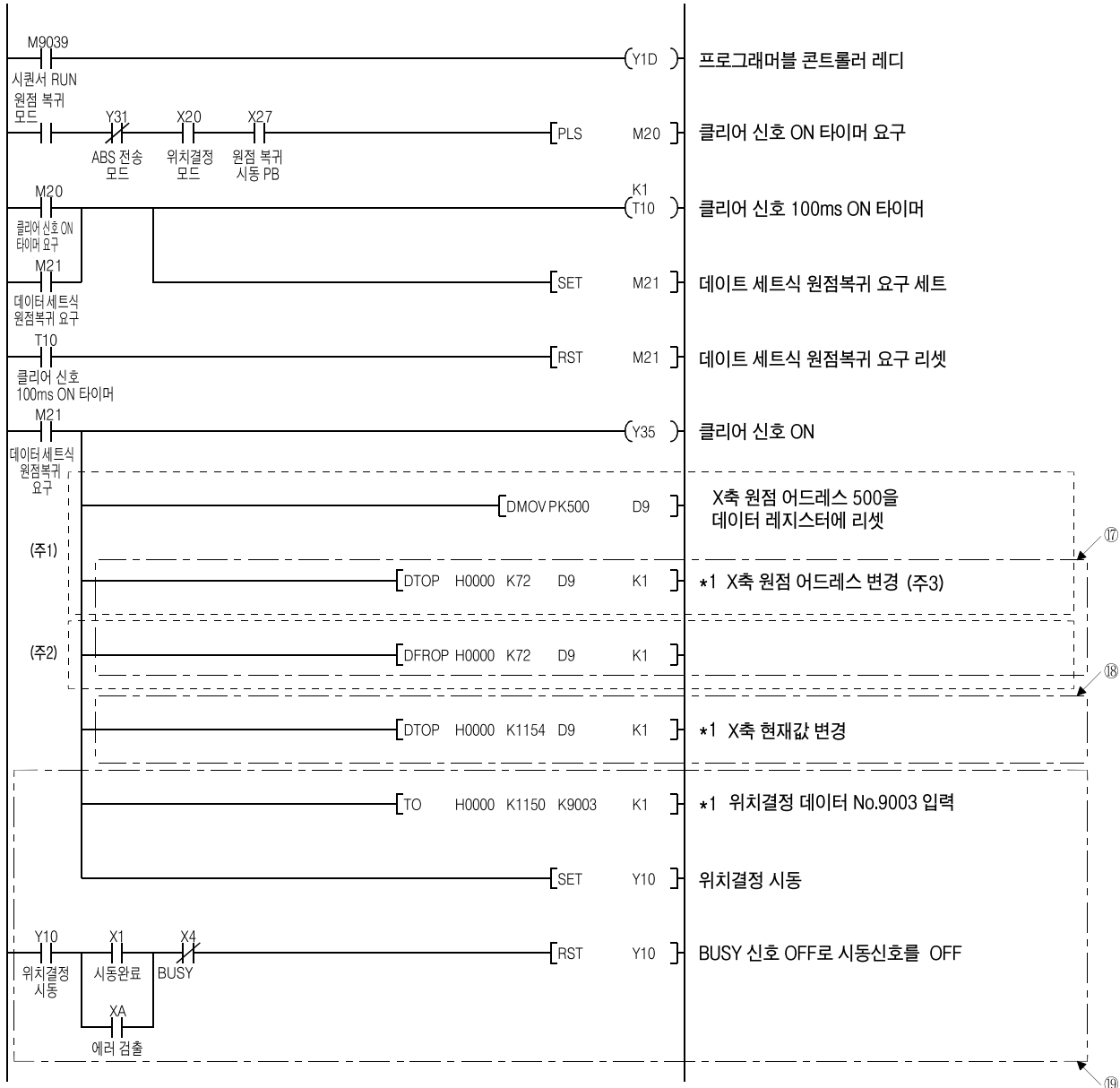
(d) X  
ABS (M8) OFF X



(e)  
A1SD71  
,  
가 (Y35)

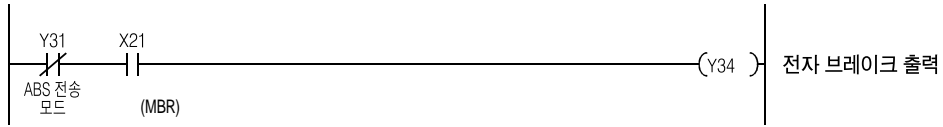


(f) JOG (PBO) ( 500 ) , 1 (Y45) ON 가 .



1. 가 , 2. A7PHP
2. 1. , 가 .
3. , OS ROM 가

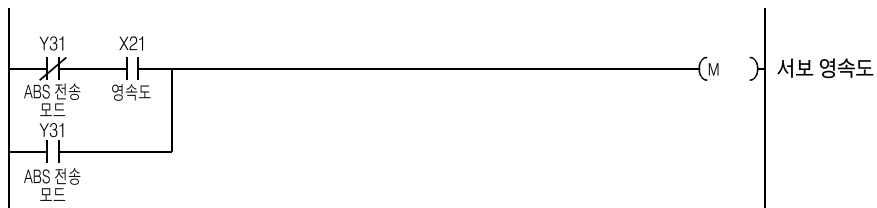
(g) ABS ( ON ON ) 가  
 No.1 “ 1 1 ” (MBR)



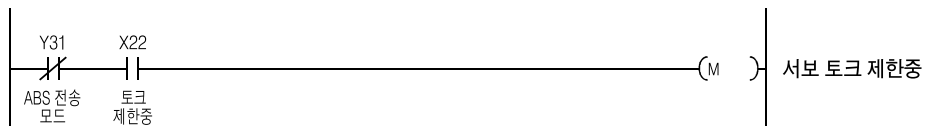
(h) ABS ( ON ON ) 가



(i) ABS ( ON ON ) 가



(j) ABS ( ON ON ) 가





(4) 2  
 1 A1SD71 2 (Y ) ABS  
 .3 가

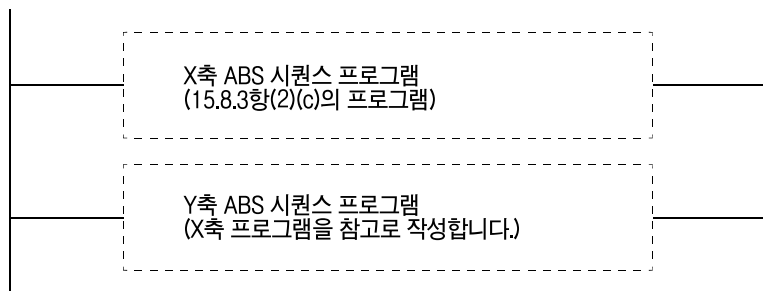
(a) Y

X ABS Y  
 Y X .Y .D .M .T .C X

A1SD71 (buffer memory) X Y  
 15.8.3 (2)(c) \*1  
 Y

[FROMP H0000 K5 D8 K1]	[FROMP H0000 K155 D8 K1]
[DFROP H0000 K72 D9 K1]	[DFROP H0000 K222 D9 K1]
[DTOP H0000 K1154 D3 K1]	[DTOP H0000 K1204 D3 K1]
[TO H0000 K1150 K9003 K1]	[TO H0000 K1200 K9003 K1]

[프로그램 구성]



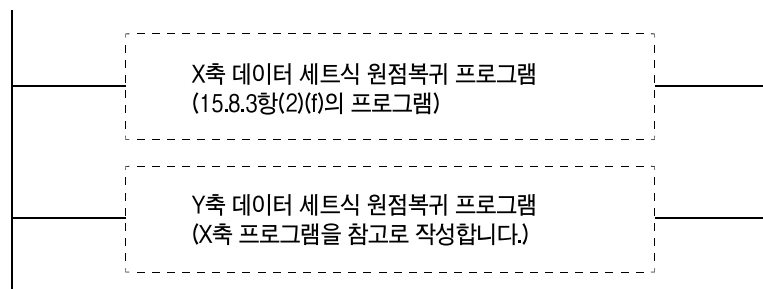
(b)

15.8.3 (2)(f)  
 2  
 X Y  
 Y X .Y .D .M .T X

A1SD71 (buffer memory) X Y  
 15.8.3 (2)(c) \*1  
 Y

[DTOP H0000 K72 D9 K1]	[DTOP H0000 K222 D9 K1]
[DTOP H0000 K1154 D9 K1]	[DTOP H0000 K1204 D3 K1]
[TO H0000 K1150 K9003 K1]	[TO H0000 K1200 K9003 K1]

[프로그램 구성]



(5) A1SD(AD71)

(2)

, A1SD71(AD71)

(2)

(a)

A1SD75(AD75)

32

1

, 48

2 A1SD71

A1SD75(AD75)

D M

				: ON
1	2	3		
X0			AD75	/WDT
X4	X5	x6	BUSY	BUSY( )
XA	XB	XC		
Y10	Y11	Y12		
Y13	Y14	Y1C		
Y16	Y18	Y1A	JOG	
Y17	Y19	Y1B	JOG	
Y1D				CPU
M0				
M1			ROM	
M2	M3	M4		
M100			AD75	AD75
M101				
M102			BUSY OFF	BUSY OFF
M103			AD75 가	가
D100			ROM	
D101	D102	D103		
D104	D105	D106		
D107	D108	D109		

(b) ABS

A1SD75

가

201 1154(1 ),

H0001(

1)

H0000(

2)

, A1SD75

X

[FROMP H0001

K7872 D8 K1]

[FROMP H0000 K5 D8 K1]

[WAND H0004 D8]

[WAND H0001 D8]

[ = D8 K4] [ = D8 K1]

6bit

, ABS

32bit

4bit

[MOV K1X30 D5]

[MOV K1X20 D5]

A1SD75 [DFOP H0001  
K7912 D9 K1] [DFOP H0000 K72 D9 K1]

A1SD75  
X [DTOP H0001 K41 D3 K1]  
[DTOP H0000 K1154 D3 K1] . A1SD75

No.9003  
No.9003 가  
[WAND H0004 D8] [WAND H0001 D8]

X  
X  
[DTOP H0001 K7912 D9 K1] [DTOP H0000 K72 D9 K1]  
[DFORP H0001 K7912 D9 K1] [DFORP H0000 K72 D9 K1]

X  
[DTOP H0001 K41 D3 K1] [DTOP H0000 K1154 D3 K1]

A1SD75 No.9003  
가

Y , Y

AD75  
A1SD75 가 ON  
, A1SD75 CPU  
가 ON , A1SD75(AD75)  
ON/OFF , 가  
가

ABC  
A1SD75 가 A1SD75(AD75)  
ABS

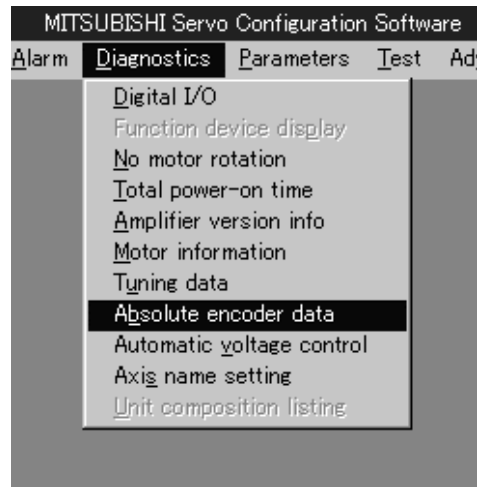
(4)(a)

(Y35)

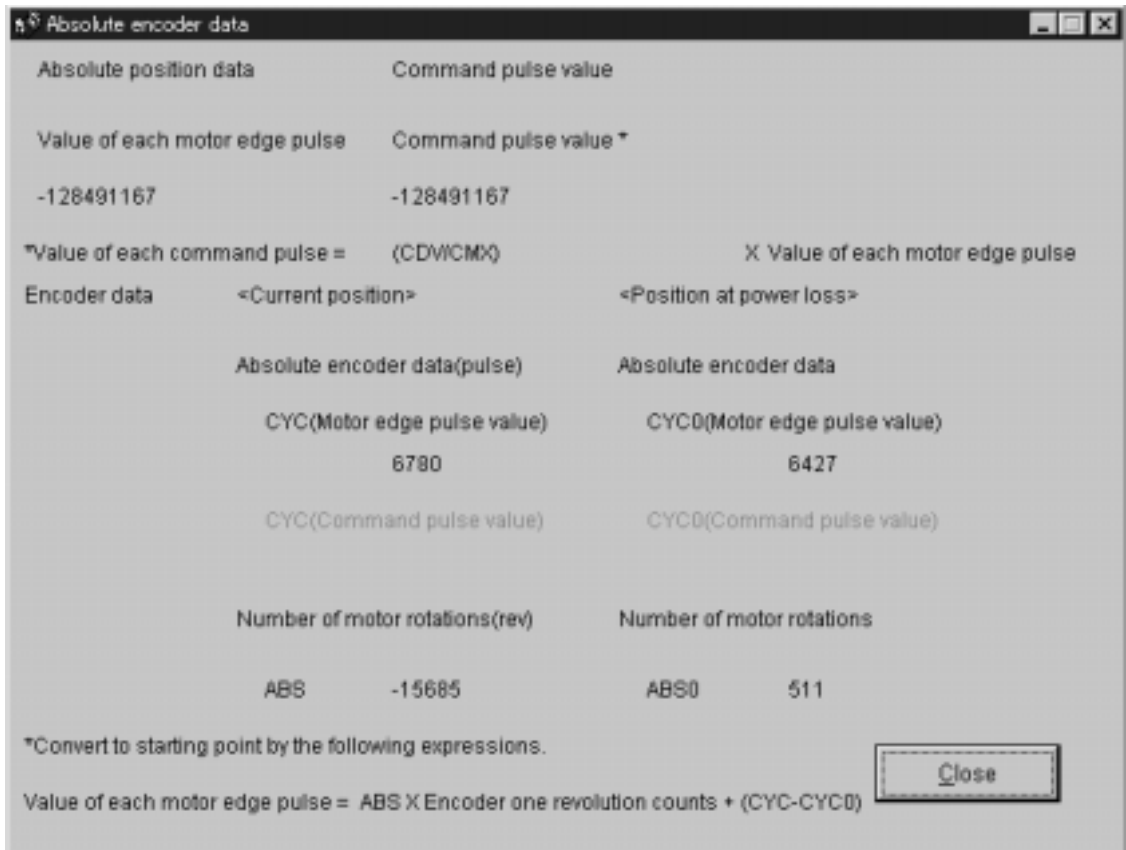
15.9

- (MRZJW3 - SETUP161E)  
 “ (D) ” “ ABS ” “ (B) ”

(1) “ (D) ” 가



(2) “ ABS ” “ (B) ” ABS 가



(3) “ (Q) ” ABS

15.10

15.10.1

(1)

( ) A1SD71(AD71)

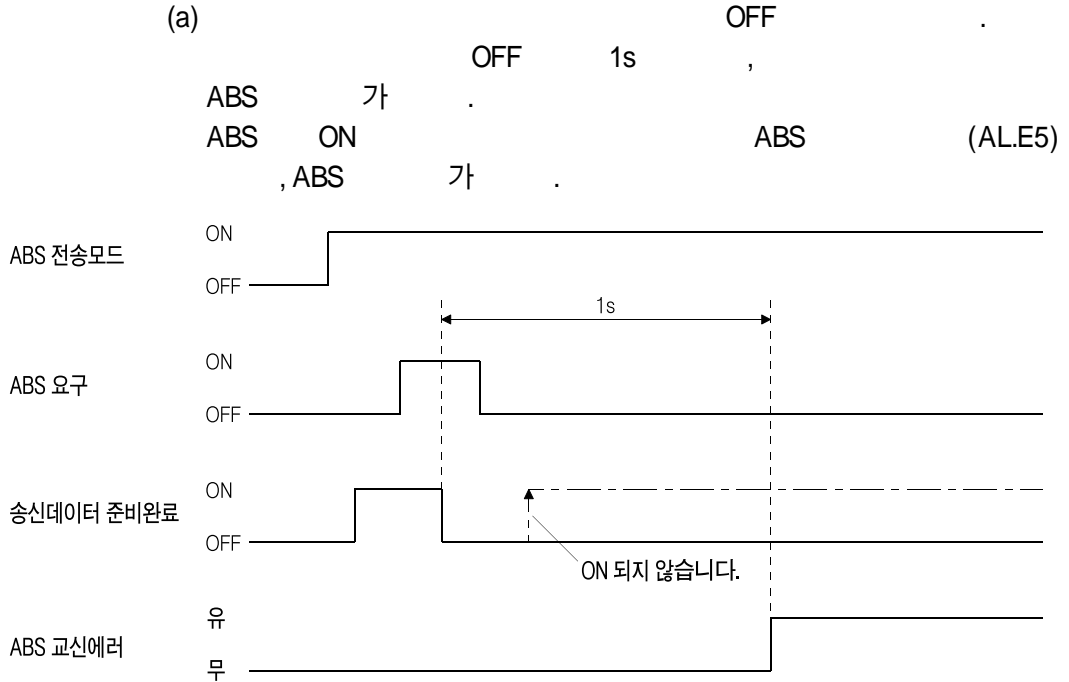
	AD71	1PG			
( ) ABS	Y49	Y11	1. ABS (Y41)가 5s 2. ABS (Y42)가 ON 1s (X32) OFF 3. (X32) 1s OFF 가	1. ABS · ABS · SG 가 가	
				2.	
				3.	
				4.	
				5. OFF	
ABS	Y4A	Y12	ABS 4	1. 2. 3. 4.	
ABS	Y4B		ON (-) 가 가	1. ON ON 2. 가 ON ON/OFF	1. ON 2.
	Y48	Y10		1. OFF (EMG) 2. ON (ALM)	ON EMG 10.22

)

(2)

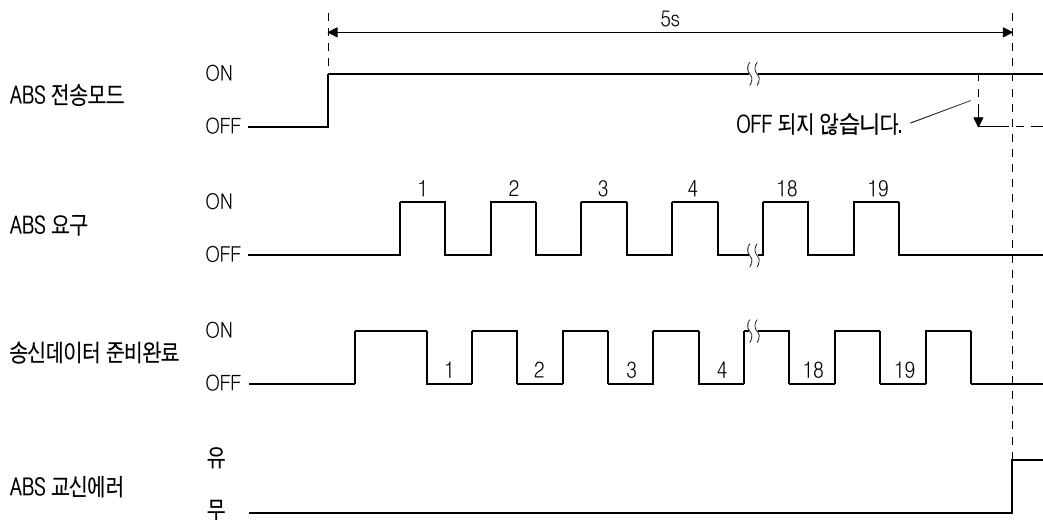
(2) ABS

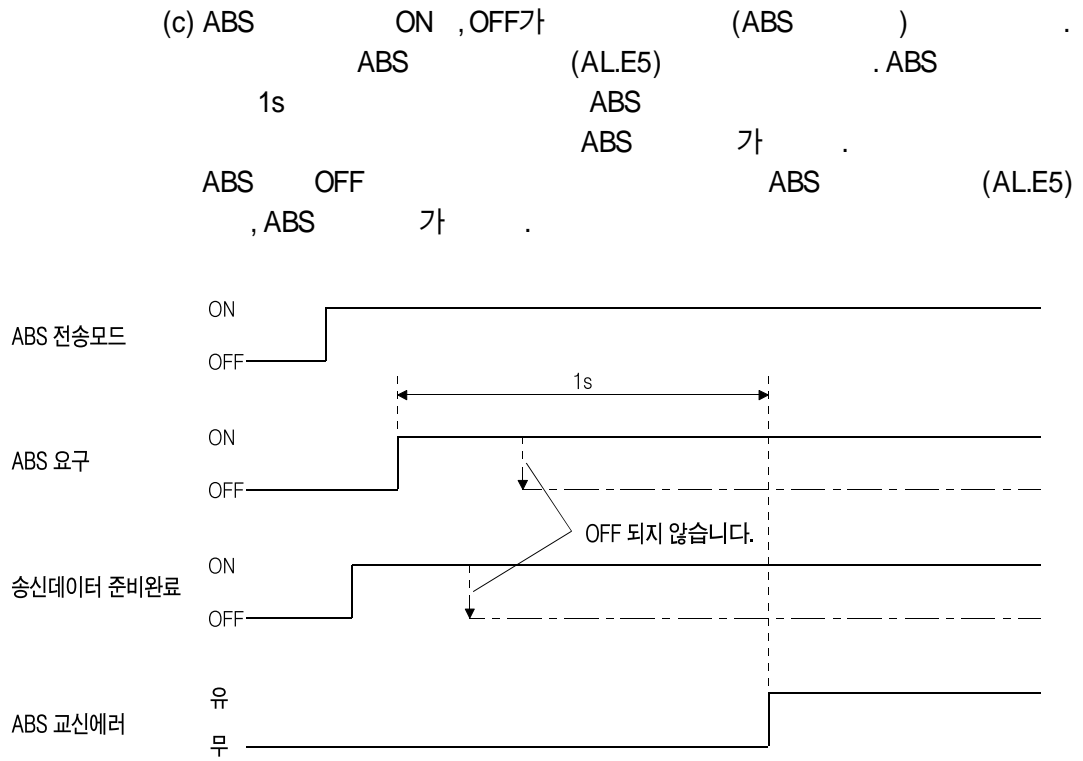
(a)



(b) ABS

ABS ON, OFF가 (ABS )  
 ABS 5s  
 ABS 가 . ABS  
 ABS (A.L.E5) , ABS 가 .



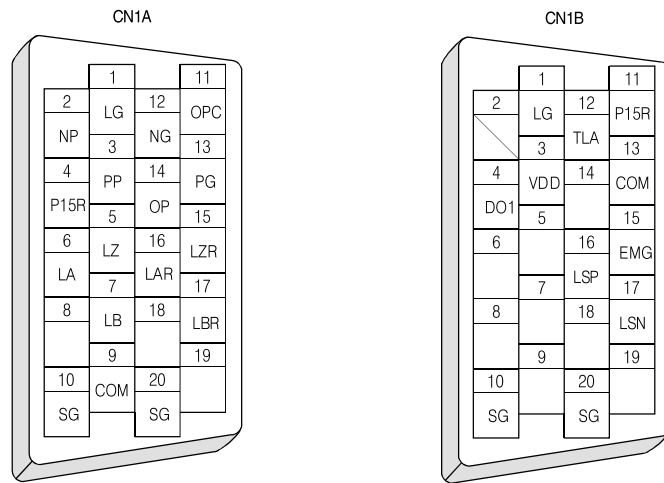


15.10.2

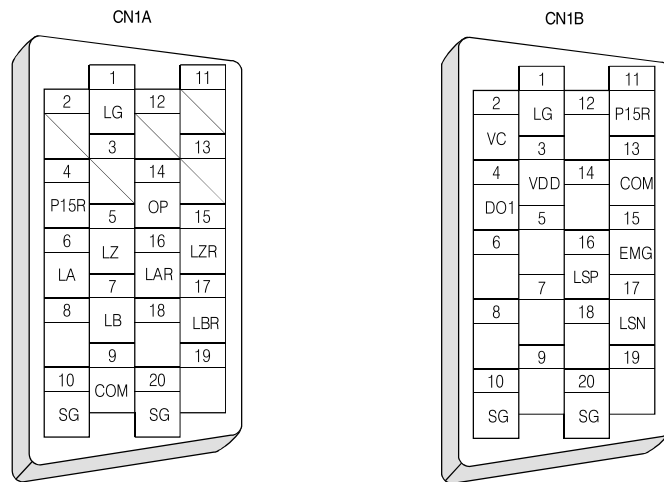
	AD71	1PG		
ABS	Y49	Y11	(RD) OFF	ON PB(X36) OFF
ABS	Y4A	Y12	(RD) ON	AD71 ON PB(X36) OFF ON
				FX - 1PG ON PB(X36) OFF
ABS	Y4B		(RD) ON	JOG (+) ON PB(X36) OFF ON
	Y48	Y10	(RD) OFF	PBON ON OFF ON

1.

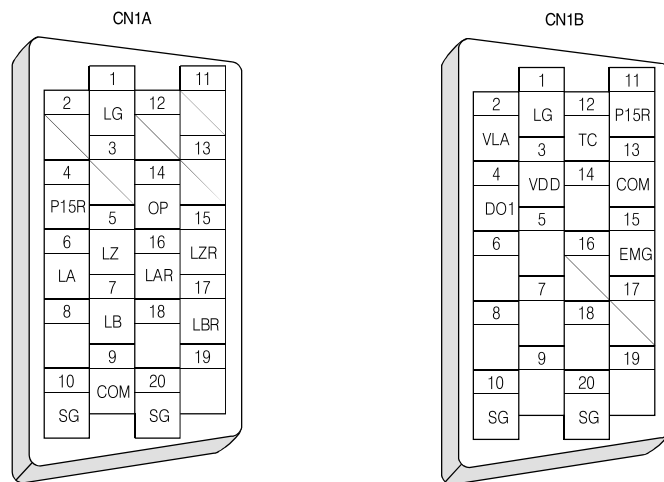
(1)



(2)



(3)







3.

( )

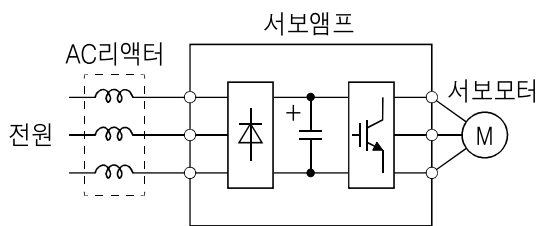
	( )		( )
HC - KFS053	MR - J2S - 10A MR - J2S - 10A1	HC - RFS103	MR - J2S - 200A
HC - KFS13	MR - J2S - 10A MR - J2S - 10A1	HC - RFS153	MR - J2S - 200A
HC - KFS23	MR - J2S - 20A MR - J2S - 20A1	HC - RFS203	MR - J2S - 350A(B0 )
HC - KFS43	MR - J2S - 40A MR - J2S - 40A1	HC - RFS353	MR - J2S - 500A(B0 )
HC - KFS73	MR - J2S - 70A(A4 )	HC - RFS503	MR - J2S - 500A(B0 )
HC - MFS053	MR - J2S - 10A MR - J2S - 10A1	HC - UFS72	MR - J2S - 70A
HC - MFS13	MR - J2S - 10A MR - J2S - 10A1	HC - UFS152	MR - J2S - 200A
HC - MFS23	MR - J2S - 20A MR - J2S - 20A1	HC - UFS202	MR - J2S - 350A(B0 )
HC - MFS43	MR - J2S - 40A MR - J2S - 40A1	HC - UFS352	MR - J2S - 500A(B0 )
HC - MFS73	MR - J2S - 70A	HC - UFS502	MR - J2S - 500A(B0 )
HC - SFS81	MR - J2S - 100A(A1 )	HC - UFS13	MR - J2S - 10A MR - J2S - 10A1
HC - SFS121	MR - J2S - 200A(A1 )	HC - UFS23	MR - J2S - 20A MR - J2S - 20A1
HC - SFS201	MR - J2S - 200A(A1 )	HC - UFS43	MR - J2S - 40A MR - J2S - 40A1
HC - SFS301	MR - J2S - 350A(A1 )	HC - UFS73	MR - J2S - 70A
HC - SFS52	MR - J2S - 60A	HC - LFS52	MR - J2S - 60A(B3 )
HC - SFS102	MR - J2S - 100A	HC - LFS102	MR - J2S - 100A(B3 )
HC - SFS152	MR - J2S - 200A	HC - LFS152	MR - J2S - 200A(B3 )
HC - SFS202	MR - J2S - 200A	HC - LFS202	MR - J2S - 350A(B3 )
HC - SFS352	MR - J2S - 350A	HC - LFS302	MR - J2S - 500A(B3 )
HC - SFS502	MR - J2S - 500A(B0 )	HA - LFS801	MR - J2S - 11KA
HC - SFS702	MR - J2S - 700A(B0 )	HA - LFS12K1	MR - J2S - 11KA
HC - SFS53	MR - J2S - 60A(A1 )	HA - LFS15K1	MR - J2S - 15KA
HC - SFS103	MR - J2S - 100A(A1 )	HA - LFS20K1	MR - J2S - 22KA
HC - SFS153	MR - J2S - 200A(A1 )	HA - LFS25K1	MR - J2S - 22KA
HC - SFS203	MR - J2S - 200A(A1 )	HA - LFS11K1M	MR - J2S - 11KA
HC - SFS353	MR - J2S - 350A(A1 )	HA - LFS15K1M	MR - J2S - 15KA
		HA - LFS502	MR - J2S - 500A(B0 )
		HA - LFS702	MR - J2S - 700A(B0 )
		HA - LFS11K2	MR - J2S - 11KA
		HA - LFS15K2	MR - J2S - 15KA
		HA - LFS22K2	MR - J2S - 22KA



4. 2

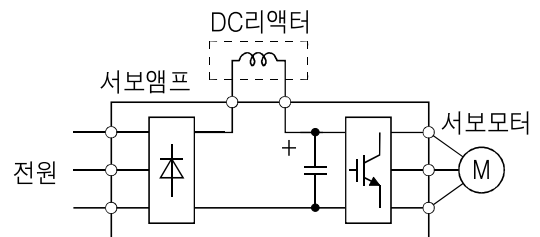
100V		1994 9 ( ) 가 가 」
200V		,
200V		(( ) )
400V		가 」
		JEM - TR225 - 2003

4. 3



AC리액터인 경우

가



DC리액터인 경우

가

5.

( )

2005 12

/		
( )	052 - 937 - 7611	
( )	044 - 844 - 8013	
( )	06 - 6532 - 4488	
( )	0729 - 64 - 8663	
( )	03 - 5730 - 8001	EMC

6. RoHS

( ) 2006 9 RoHS

RoHS

가

RoHS

MR - J2CNM MR - J2CN1	(3M ) 10120 - 3000VE( )	(3M ) 10120 - 3000PE( )
MR - J2CNS	(3M ) 10120 - 3000VE( ) (DDK) MS3057 - 12A( ) MS3106B20 - 29S( )	(3M ) 10120 - 3000PE( ) (DDK) D/MS3057 - 12A( ) D/MS3106B20 - 29S( )
MR - ENCNS	(3M ) 10120 - 3000VE( ) MS3106A20 - 29S(D190)( /DDK) CE3057 - 12A - 3(D265)( /DDK) CE02 - 20BS - S( /DDK)	(3M ) 10120 - 3000PE( ) D/MS3106A20 - 29S(D190)( /DDK) CE3057 - 12A - 3 - D( /DDK) CE02 - 20BS - S - D( /DDK)
MR - PWCNS1	(DDK) CE05 - 6A22 - 23SD - B - BSS( + ) CE3057 - 12A - 2(D265)( )	(DDK) CE05 - 6A22 - 23SD - D - BSS( + ) CE3057 - 12A - 2 - D( )
MR - PWCNS2	(DDK) CE05 - 6A24 - 24SD - B - BSS( + ) CE3057 - 16A - 2(D265)( )	(DDK) CE05 - 6A24 - 10SD - B - BSS( + ) CE3057 - 16A - 2 - D( )
MR - PWCNS3	(DDK) CE05 - 6A32 - 17SD - B - BSS( + ) CE3057 - 20A - 1(D265)( )	(DDK) CE05 - 6A32 - 17SD - D - BSS( + ) CE3057 - 20A - 1 - D( )
MR - BKCN	MS3106A10SL - 4S(D190)( /DDK)	D/MS3106A10SL - 4S(D190)( /DDK)

1999	7	SH( ) - 030000 - A	
2000	1	SH( ) - 030000 - B	AC 100V 가 EC 1 가 1.2 가 1.3 가 3.1.1 (1) Z 가 3.1.1 (2) 가 3.1.2 , 3.1.3 가 3.3.1 (2) 가 / , / , / 3.3.2 (1) Z 3.3.2 (2) AD75P 가 3.4.1 (1)(a) 가 3.4.1 (4) 가 3.4.3 (1)(a) 가 3.4.3 (3) 가 3.5 가 3.6.1 가 3.6.2 (7) 가 3.7.1 가 3.9 PL 가 3.9 (3)(a) 가 3.9 (3)(b), (c) 가 3.9 (3)(d), (e) 가 5.1.2 (2) No.2 2 No.3, 4 가 No.17 가 No.22TC, TLA No.27 가 No.28 1 No.47, 48 가 No.59 No.76 2 5.2.1 가 5.2.5 가 6.2.2 1 가 6.3 VC 가 6.6 (2)(a) 가 6.8 PL 가 7.3.2 No.34 가 7.3.2 (2)(c) 가 7.4 가 8.1.1 가 8.3.2 가 8.3.4 No.61 가 No.65 10.1.1 (1) 가 10.1.2 가 10.1.3 ST1, ST2 ON 가 SON ON 가 ST1, ST2 ON 가 10.2 가 10.2.2 AL.16 4 AL.26 가

2000 1	SH( )-030000-B	10.2.2 AL.30 AC100V 가 AL.33 가 11 11.2 (2) 가 12.2 (1) 12.1 가 13.1.2 (1) MR-PWCNF 13.1.2 (1) , 13.1.2 (1) , 13.1.2 (2)(a) 가 13.1.3 가 13.1.3 (4) 가 13.2.1 (1) 가 13.2.8 (1) 가 14.11.1 (6) 가 14.11.2 (8) 가 15.5 가 15.7 가 15.7.2 가 15.7.2 (3) 15.7.2 (4)(a) 가 15.7.2 (4)(b) 15.8.1 (1)(b) 0 b 15.8.1 (2) CN1B 가 15.8.2 (1)(a) 가 15.8.3 (1) CN1B 가 15.8.3 (2)(c) 15.10.1 (1) ABS 5
2000 10	SH( )-030000-C	MR-J2S-500A, MR-J2S-700A 가 HC-KFS73, SFS502, HC-SFS702, HC-RFS353, HC-RFS503, HC-UFS502, HC-UFS353 가 가 1.2 1.7 가 1.8 (1)(2) 가 3.7.1 (2) AC100~120V 가 3.7.2 , 가 5 5.1.2 (2) No.0 , 가 No.5 가 No.27 5.2.2 가 7.4 (1) 가 8 가 10.2 10.2.2 가 AL.24 가 13.1.1 MR-RB31, MR-RB51 가 13.1.2 가 13.1.3 가 13.2.1 (1) 가 13.2.8 MR-J2S-500A, MR-J2S-700A 가 15 AL.25 가
2002 10	SH( )-030000-D	MR-J2S-11KA, MR-J2S-15KA, MR-J2S-22KA 가 HA-LFS11K2, HA-LFS15K2, HA-LFS22K2, HC-LFS 가 가 UL/C-UL (4) MR-J2S-11KA~ MR-J2S-22KA 가 (6) 가 (7) 가 1.4

2002 10	SH( ) - 030000 - D	<p>3.5 가</p> <p>3.6.2 (2)</p> <p>3.7 가</p> <p>3.8.2</p> <p>3.8.3 가</p> <p>3.11</p> <p>3.13 가</p> <p>5.2 (2) No.2 가 No.6 No.23 No.35 No.36 No.37 No.49 AL37 가 No.84</p> <p>5.2.1 (3)</p> <p>10.2.2 16 4. 가 20 3. 가 50 51</p> <p>10.1 (7), (8) MR - J2S - 11KA, 15KA, 22KA 가</p> <p>12.1 (4) 가</p> <p>12.3 HC - KFS · HA - LFS 가</p> <p>13.1.1 (1) 가</p> <p>13.1.1 (3) 가</p> <p>13.1.1 (4)</p> <p>13.1.1 (5) 가</p> <p>13.1.2 FR - BU - 55K 가</p> <p>13.1.3 FR - BU - 55K 가</p> <p>13.1.4 가</p> <p>13.1.7 가</p> <p>13.1.8 (2)(a)</p> <p>13.2.1 (1)</p> <p>13.2.3</p> <p>13.2.7 (1) 가</p> <p>13.2.8 (1) EMC 가</p> <p>14.1.2 (2) PC D - SUB9</p> <p>14.4 (2)</p> <p>14.11 가</p> <p>14.12.7 (2)(c) 가</p> <p>15.2 (2)</p>
2003 5	SH( ) - 030000 - E	<p>3. 가</p> <p>4. (1) 가</p> <p>EC (6)(b) 가</p> <p>UL/C - UL (2) 2.8 m³/min 가</p> <p>1.3 가</p> <p>3.7.3 (3)</p> <p>3.8.2 EMG</p> <p>3.8.3 가</p> <p>3.13.1 (HA - LFS11K2)</p> <p>3.13.3</p> <p>4.2 가</p> <p>5.1.2 (1) No.2</p> <p>5.1.2 (2) No.0 No.2 No.17 5 (10v/500kpps) No.20 가</p> <p>6.4 (2)</p> <p>10.2.1</p>



2003 5	SH( )-030000-E	10.2.2 12~15 37 3. 가 51 : 2.5s 가 12.3 te 12.5 가 13.1.1 (4)(b) 13.1.2 가 13.1.3 가 13.1.3 (2) 13.1.4 (2) 13.1.10 가 13.2.1 (1) 13.1 AWG2/0 13.2.10 (2) RRS10N202 15.4
2003 10	SH( )-030000-F	- 3. EC (3)(4) IEC60664 - 1 1.6 3.1.1 3.1.2 3.1.3 3.3.1 (1)(b) CN33 - 13 3.6.2 (7) 11kW JP11 가 3.8.3 (2) 5.1.2 (2) No.20 No.76 5.2.1 (3) 10 <sup>3</sup> 가 8.5.3 No.63 10.2.2 AL.32 . . 가 12.5 1m 13.1.1 (4) 13.1.1 (5) 13.1.9 (2)(a) Windows 13.2.9 (3) HF3040A - TM/HF3050A - TM/HF3060A - TMA/HF3080A - TMA /HF3100A - TMA 15.8.1 (3)(c) 15.8.3 (2) 3 가 4
2004 3	SH( )-030000-G	1.2 1.5 (2) 가. 3.4.1 (5) 가 3.4.2 (1)(a) 2 가 3.6.1 3.9 (3)(d) 3.9 (3)(e) 3.11 가 5.2.1 (1)(b) 가 10.2.2 52 가. 12.3 HC - LFS 가 13.1.1 (4) 가 13.1.1 (5)(c) 13.1.2 (2) 2 13.1.3 (2) 2 가 13.1.4 (1) 13.1.10 (2) 4 가 13.1.10 (3)(b) 가 13.1.11 가











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