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‘ ’ ‘ ’ 가 ‘ ’ ‘ ’



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● SV-iG5



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10

(DC 30V )

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(1)

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3 (200V ) , 3 (400V )  
PCB

|  |                                       |
|--|---------------------------------------|
|  | - 10 ~ 40 ( )                         |
|  | 90% RH ( )                            |
|  | - 20 ~ 65                             |
|  | 가 , 가 , ,                             |
|  | 1000m · 5.9m/sec <sup>2</sup> (=0.6g) |
|  | 70 ~ 106 kPa                          |

(2)

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( U, V, W)

(+/-)

가

(3)

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가

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(4)

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가

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● 400V

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(5)

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가

가

가

가

(6)

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가

(

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6

(7)

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(8)

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가

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|   |       |        |       |      |
|---|-------|--------|-------|------|
| 1 | 1.1   |        | ----- | 1-1  |
|   | 1.2   |        | ----- | 1-2  |
| 2 | 2.1   |        | ----- | 2-1  |
|   | 2.2   |        | ----- | 2-4  |
| 3 | 3.1   |        | ----- | 3-1  |
|   | 3.2   |        | ----- | 3-3  |
|   | 3.2.1 |        | ----- | 3-3  |
|   | 3.2.2 |        | ----- | 3-5  |
|   | 3.2.3 |        | ----- | 3-8  |
|   | 3.2.4 | RS485  | ----- | 3-9  |
|   | 3.2.5 |        | ----- | 3-10 |
| 4 | 4.1   |        | ----- | 4-1  |
|   | 4.1.1 |        | ----- | 4-1  |
|   | 4.1.2 |        | ----- | 4-2  |
|   | 4.1.3 |        | ----- | 4-4  |
|   | 4.2   |        | ----- | 4-7  |
|   | 4.2.1 |        | ----- | 4-7  |
|   | 4.2.2 |        | ----- | 4-7  |
|   | 4.2.3 |        | ----- | 4-8  |
| 5 | 5.1   |        | ----- | 5-1  |
|   | 5.2   | [DRV ] | ----- | 5-10 |
| 6 | 6.1   |        | ----- | 6-1  |
|   | 6.1.1 |        | ----- | 6-1  |
|   | 6.1.2 |        | ----- | 6-3  |
|   | 6.1.3 |        | ----- | 6-4  |
|   | 6.1.4 |        | ----- | 6-5  |
|   | 6.2   |        | ----- | 6-6  |
|   | 6.2.1 |        | ----- | 6-6  |
|   | 6.2.2 |        | ----- | 6-6  |

7

|              |       |     |
|--------------|-------|-----|
| 7.1          | ----- | 7-1 |
| 7.2 DIN RAIL | ----- | 7-3 |
| 7.3          | ----- | 7-4 |
| 7.4 NEMA     | ----- | 7-4 |

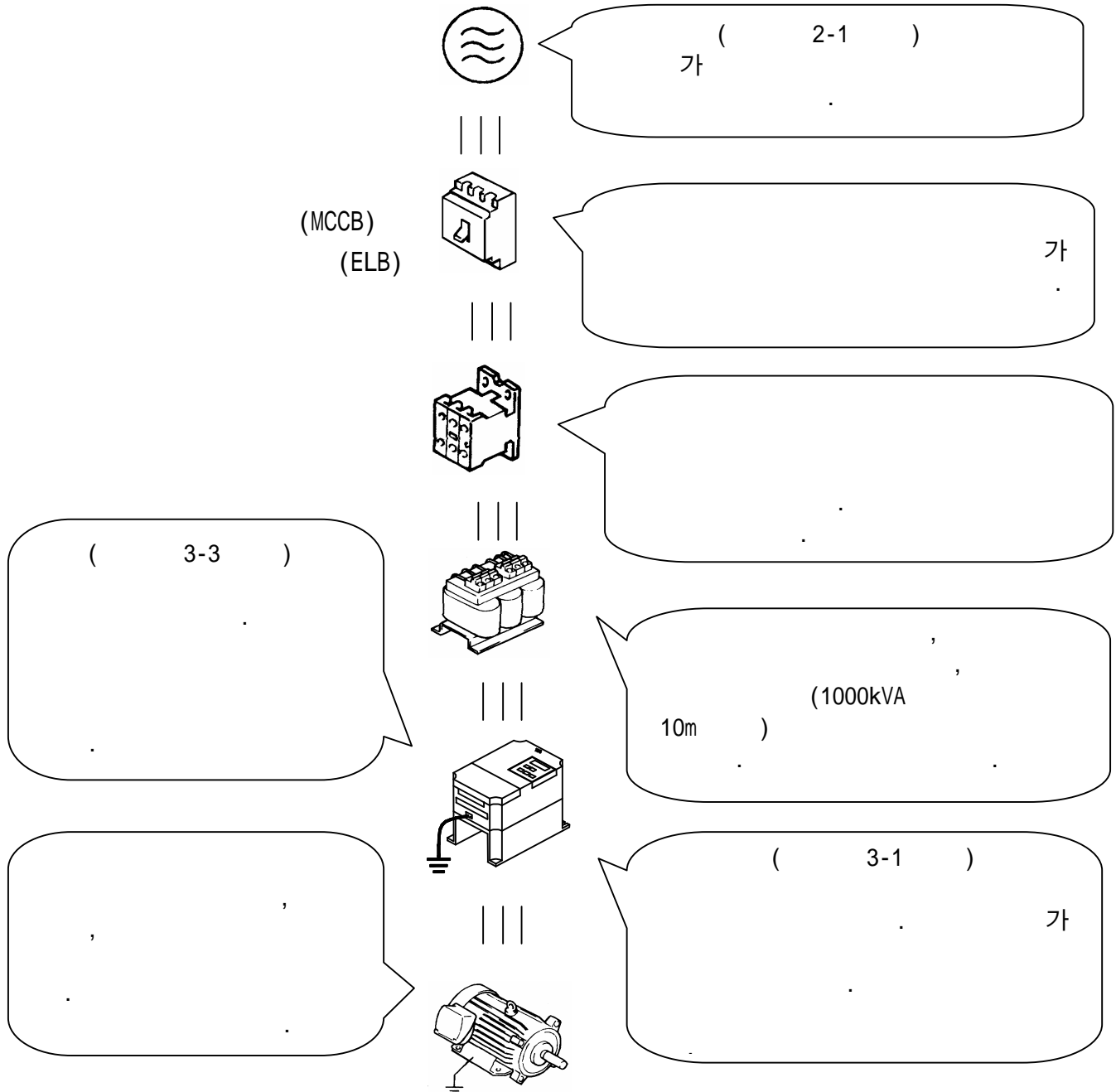
- 1.
- 2.
3. DECLARATION OF CONFORMITY



가

가

가





## 2.1

|                  |      |           |                          |       |                          |         |       |       |       |     |
|------------------|------|-----------|--------------------------|-------|--------------------------|---------|-------|-------|-------|-----|
| 2<br>0<br>0<br>V | SV   | iG5-      | 008-1                    | 015-1 | 008-2                    | 008-2NC | 015-2 | 022-2 | 037-2 |     |
|                  | ( 1) | [HP]      | 1                        | 2     | 1                        | 1       | 2     | 3     | 5     |     |
|                  |      | [kW]      | 0.75                     | 1.5   | 0.75                     | 0.75    | 1.5   | 2.2   | 3.7   |     |
|                  |      | [kVA]( 2) | 1.9                      | 3.0   | 1.9                      | 1.9     | 3.0   | 4.5   | 6.1   |     |
|                  |      | [A]       | 5                        | 8     | 5                        | 5       | 8     | 12    | 16    |     |
|                  |      |           | 0.1 ~ 400 Hz             |       |                          |         |       |       |       |     |
|                  |      |           | 3 200 ~ 230 V ( 3)       |       |                          |         |       |       |       |     |
|                  |      |           | 1 200 ~ 230V<br>(± 10 %) |       | 3 200 ~ 230V<br>(± 10 %) |         |       |       |       |     |
|                  |      |           | 50 ~ 60 Hz(± 5 %)        |       |                          |         |       |       |       |     |
|                  |      |           | (kg)                     | 1.8   | 2.1                      | 1.2     | 1.7   | 1.8   | 2.1   | 2.2 |
| 4<br>0<br>0<br>V | SV   | iG5-      | 008-4                    |       |                          |         | 015-4 | 022-4 | 037-4 |     |
|                  | ( 1) | [HP]      | 1                        |       |                          |         | 2     | 3     | 5     |     |
|                  |      | [kW]      | 0.75                     |       |                          |         | 1.5   | 2.2   | 3.7   |     |
|                  |      | [kVA]     | 1.9                      |       |                          |         | 3.0   | 4.5   | 6.1   |     |
|                  |      | [A]       | 2.5                      |       |                          |         | 4     | 6     | 8     |     |
|                  |      |           | 0.1 ~ 400 Hz             |       |                          |         |       |       |       |     |
|                  |      |           | 3 380 ~ 460V( 3)         |       |                          |         |       |       |       |     |
|                  |      |           | 3 380 ~ 460 V ± 10 %)    |       |                          |         |       |       |       |     |
|                  |      |           | 50 ~ 60 Hz ± 5 %)        |       |                          |         |       |       |       |     |
|                  |      |           | (kg)                     | 1.7   |                          |         |       | 1.8   | 2.1   | 2.2 |

|  |                  |  |
|--|------------------|--|
|  |                  | 20% ( 4)   |
|  | /                | ( ) ( 5)   |
|  |                  | ( 6)   |
|  |                  | (IP00)   |
|  |                  | V/F  |
|  |                  | :0.01Hz(100 Hz ),0.1Hz(100Hz )<br>:0.03 Hz / 60 Hz |
|  |                  | : 0.01 %<br>: 0.1 %                                |
|  | V/F              | , 2 , User V/F                                     |
|  |                  | 150 % 1 ( )  |
|  |                  | (0 ~ 15 % ),                                       |
|  |                  | / / 가  |
|  |                  | : 0 ~ 10V / 4 ~ 20 mA<br>:                         |
|  |                  | ,  |
|  |                  | 8 가 ( )  |
|  | 가                | 0 ~ 9,999 , 8 , 가<br>( )<br>가 : , U , S 가          |
|  |                  |  |
|  |                  |  |
|  |                  |  |
|  |                  |  |
|  |                  | (30A, 30C, 30B) – AC250V 1A, DC30V 1A              |
|  | (1 )<br>0 ~ 10V  |  |
|  | , , 2 ,<br>, PID |  |

|  |  |   |             |
|--|--|---|-------------|
|  |  |   | 1,2,<br>CPU |
|  |  |   |             |
|  |  | 15 msec :<br>15 msec :                  | 가           |
|  |  |   |             |
|  |  |   | 5           |
|  |  | -10 ~ 40                                |             |
|  |  | -20 ~ 65                                |             |
|  |  | 90 % RH ( )                             |             |
|  |  | 1,000 m · 5.9m/sec <sup>2</sup> (=0.6g) |             |
|  |  | 가 , 가 ,                                 |             |
|  |  | 70 ~ 106 kPa                            |             |

( 1) 4 OTIS-LG

( 2) ( $=\sqrt{3}VI$ ) 200V 220V,400V 440V

( 3) 가

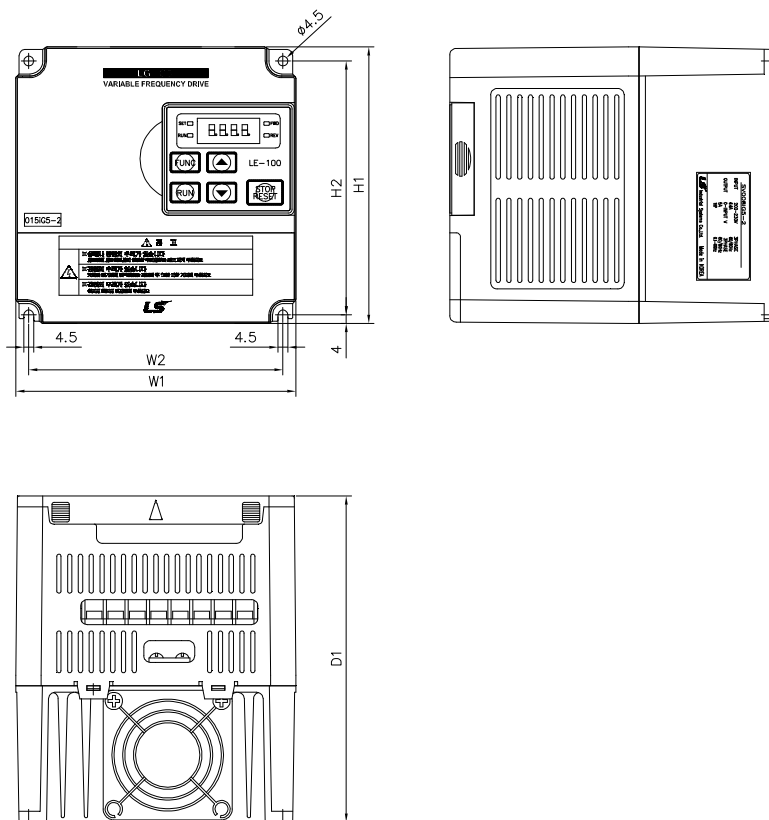
( 4) 20%

( 5) 7

( 6) SV008iG5-2NC , SV008iG5-4

( 7) FU2-39 [ ] 3 kHz , 1 kHz. 5%

2.2



: [mm]

|               | W1  | W2  | H1  | H2    | D1    |
|---------------|-----|-----|-----|-------|-------|
| SV008 iG5-2   | 100 | 88  | 128 | 117.5 | 130.9 |
| SV008 iG5-1   | 130 | 118 | 128 | 117.5 | 152.9 |
| SV008 iG5-2NC | 130 | 118 | 128 | 117.5 | 152.9 |
| SV015 iG5-2   | 130 | 118 | 128 | 117.5 | 152.9 |
| SV008 iG5-4   | 130 | 118 | 128 | 117.5 | 152.9 |
| SV015 iG5-4   | 130 | 118 | 128 | 117.5 | 152.9 |
| SV015 iG5-1   | 150 | 138 | 128 | 117.5 | 155   |
| SV022 iG5-2   | 150 | 138 | 128 | 117.5 | 155   |
| SV037 iG5-2   | 150 | 138 | 128 | 117.5 | 155   |
| SV022 iG5-4   | 150 | 138 | 128 | 117.5 | 155   |
| SV037 iG5-4   | 150 | 138 | 128 | 117.5 | 155   |

3

3.1

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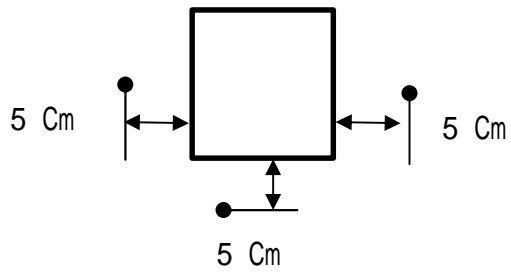
1)

2)

3)

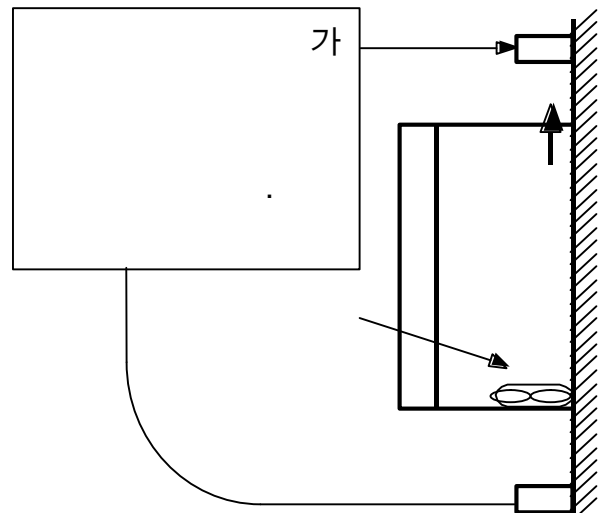
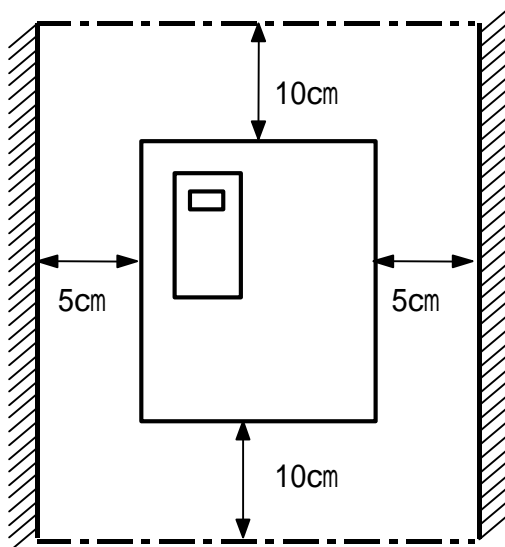
가

( - 10 ~ 40 )



4)

5)



3

6)

7)

, 가 , ,

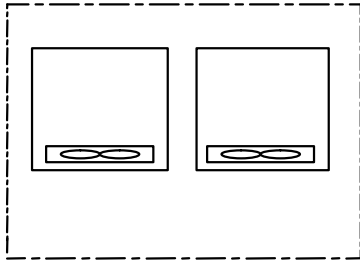
(Panel)

8)

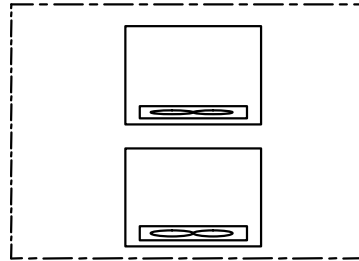
(Panel)

(Panel)

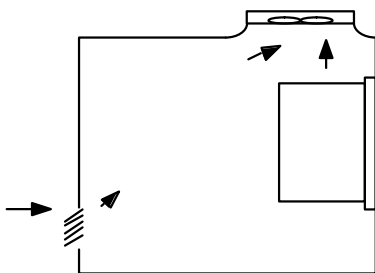
, 가 가 가 가 가



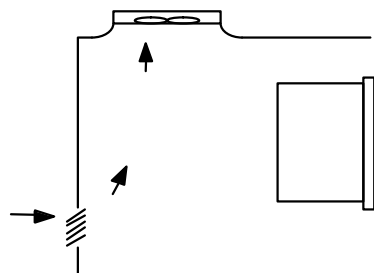
(0)



(X)



(0)

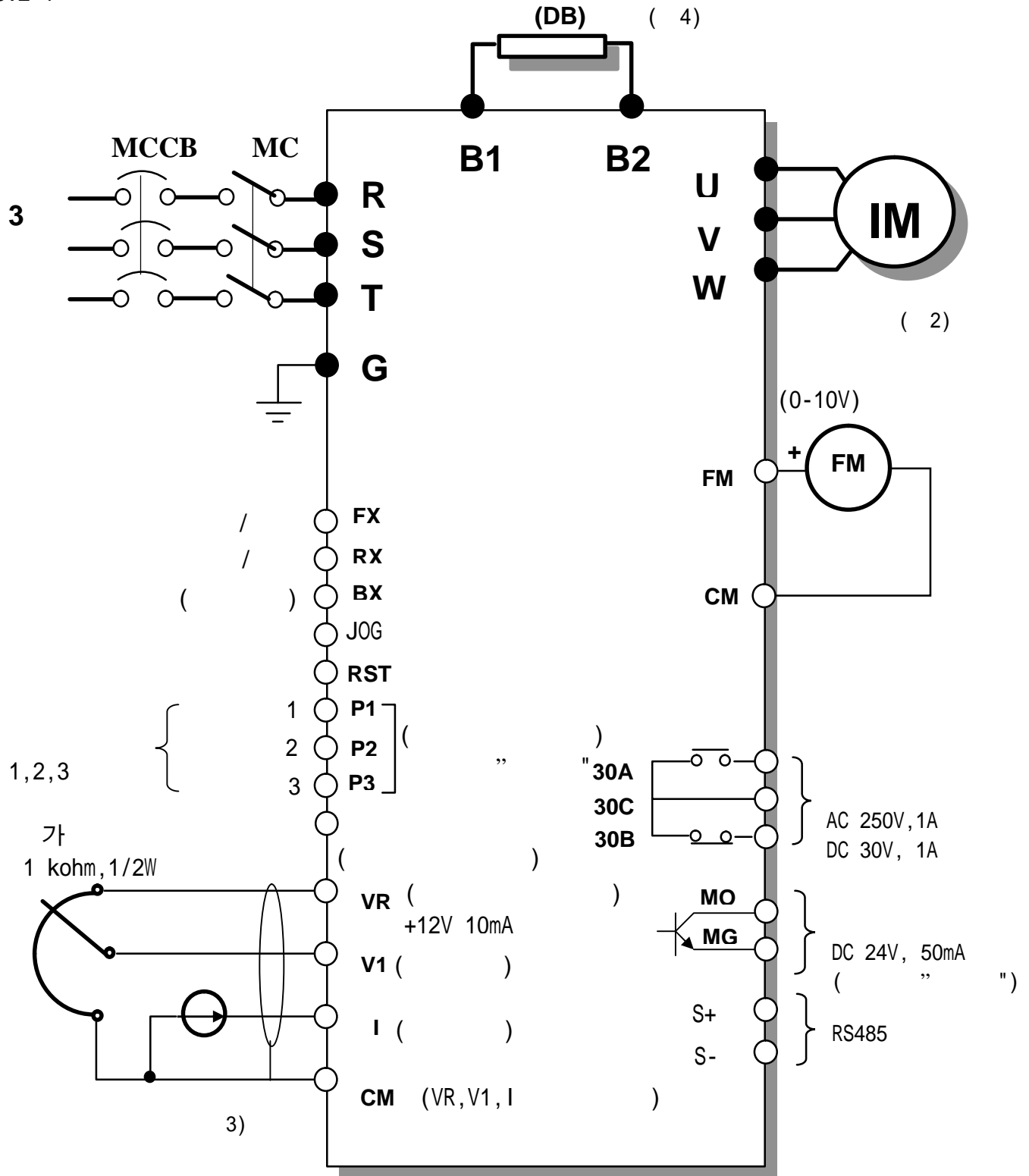


(X)

9)

가

3.2  
3.2 1



- 1. , .
- 2. 12V 가 .
- 3. , + 가 . ( )
- 4. .

3

2)

|   |   |   |    |    |   |   |   |
|---|---|---|----|----|---|---|---|
| R | S | T | B1 | B2 | U | V | W |
|---|---|---|----|----|---|---|---|

|           |  |              |
|-----------|--|--------------|
| R , S , T |  | , 200V (R-T) |
| B1 , B2   |  |              |
| U , V , W |  | 3            |

3)

|     |     |     |
|-----|-----|-----|
| 30A | 30C | 30B |
|-----|-----|-----|

|      |      |      |      |      |      |      |       |       |       |      |      |      |      |      |      |     |      |      |       |
|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|-----|------|------|-------|
| 1 MO | 2 MG | 3 CM | 4 FX | 5 RX | 6 CM | 7 BX | 8 JOG | 9 RST | 10 CM | 1 P1 | 2 P2 | 3 P3 | 4 VR | 5 V1 | 6 CM | 7 I | 8 FM | 9 S+ | 10 S- |
|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|-----|------|------|-------|

|  |            |         |   |
|--|------------|---------|---|
|  |            |         |   |
|  | P1, P2, P3 | 1, 2, 3 | 가<br>1, 2, 3                            |
|  | FX         |         | ON/OFF /                                |
|  | RX         |         | ON/OFF /                                |
|  | JOG        |         | ON<br>FX( RX)                           |
|  | BX         |         | BX ON<br>BX ( )<br>OFF FX ( RX) 가<br>ON |
|  | RST        |         |   |
|  | CM         |         |   |



|       |        | VR            | (+12V)         | +12V, 10mA  |
|-------|--------|---------------|----------------|---|
|       |        | V1            | ( )            | DC 0 ~ 10V<br>20K   |
|       |        | I             | ( )            | DC 4 ~ 20mA<br>250  |
|       |        | CM            |                | FM( )   |
|       |        | FM-CM         |                | 0 ~ 12V,<br>1mA   |
|       |        | 30A, 30C, 30B |                | AC250V 1A<br>, DC30V 1A<br>: 30A-30C (30B-30C )<br>: 30B-30C (30A-30C ) |
|       |        | MO-MG         |                | MG<br>DC 24V 50MA<br>" "  |
| RS485 | S+, S- |               | RS485<br>(S-)가 |   |

3.2.2

(1)

1)

(U, V, W)

2)

3)

4)

가

가 2%

가

가

가

5)

1

500m

가

가

2

3

가

500m

500m

3

6) B1, B2

가

7)

가

가

가

8)

가

9)

가

가



!

가

200V

3

100

400V

3

10

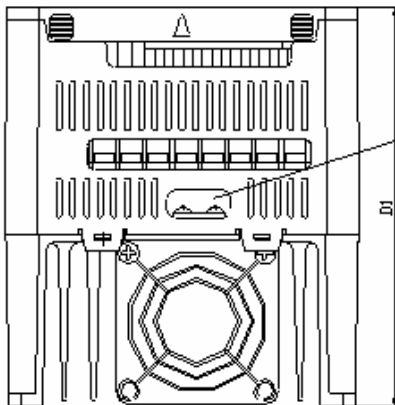
가

가

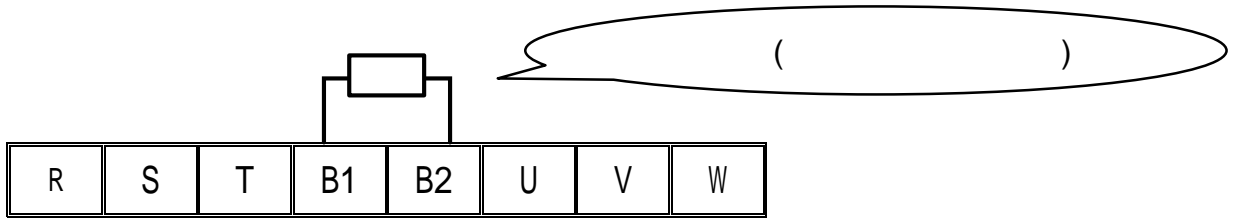
가

가

| ( mm <sup>2</sup> ) |      |
|---------------------|------|
| 200V                | 400V |
| 3.5                 | 2    |



(2)



(3)

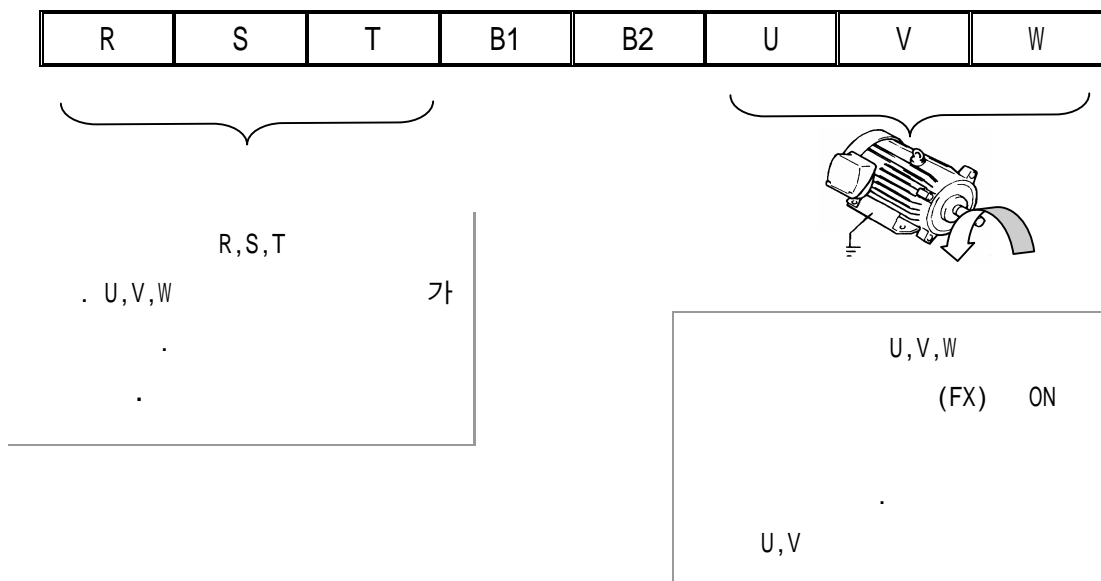
(R,S,T), (U,V,W)

|              |         |      | ( 1 )<br>(Kgf · cm) | ( 2 )           |       |       |       |
|--------------|---------|------|---------------------|-----------------|-------|-------|-------|
|              |         |      |                     | mm <sup>2</sup> |       | AWG   |       |
|              |         |      |                     | R,S,T           | U,V,W | R,S,T | U,V,W |
| 200V<br>(1Φ) | 0.75 kW | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 1.5 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |
| 200V<br>(3Φ) | 0.75 kW | M3.5 | 10                  | 2               | 2     | 14    | 14    |
|              | 1.5 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 2.2 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 3.7 kW  | M4   | 15                  | 3.5             | 3.5   | 12    | 12    |
| 400V<br>(3Φ) | 0.75 kW | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 1.5 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 2.2 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |
|              | 3.7 kW  | M4   | 15                  | 2               | 2     | 14    | 14    |

( 1 )

( 2 ) 600V, 75

(4)



3

3.2.3

(1)



- (200V )
- V1 15M, I 100M
- (600V, 75 )

(2)

|     |     |     |
|-----|-----|-----|
| 30A | 30C | 30B |
|-----|-----|-----|

|    |    |    |    |    |    |    |     |     |    |    |    |    |    |    |    |   |    |    |    |
|----|----|----|----|----|----|----|-----|-----|----|----|----|----|----|----|----|---|----|----|----|
| 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8   | 9   | 10 | 1  | 2  | 3  | 4  | 5  | 6  | 7 | 8  | 9  | 10 |
| MO | MG | CM | FX | RX | CM | BX | JOG | RST | CM | P1 | P2 | P3 | VR | V1 | CM | I | FM | S+ | S- |

|          |    | (Nm) |                    |                    | Stripped (mm) |    |     |     |     |     |
|----------|----|------|--------------------|--------------------|---------------|----|-----|-----|-----|-----|
|          |    |      | (mm <sup>2</sup> ) | (mm <sup>2</sup> ) |               |    |     |     |     |     |
| 30 A B C |    | M3   | 0.5                | 2.5                | 1.5           | 7  |     |     |     |     |
| MO       | MG | CM   | FX                 | RX                 | ~ S           | M2 | 0.4 | 1.5 | 1.0 | 5.5 |

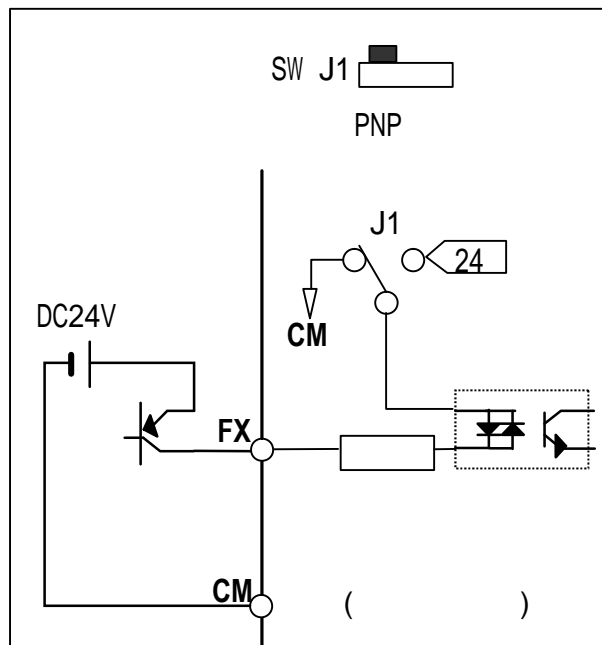
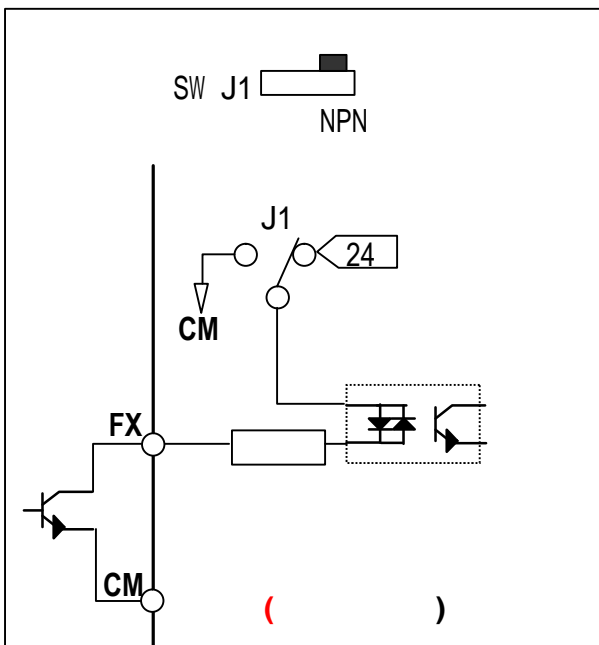
(3)

NPN      PNP

PCB      J1

NPN

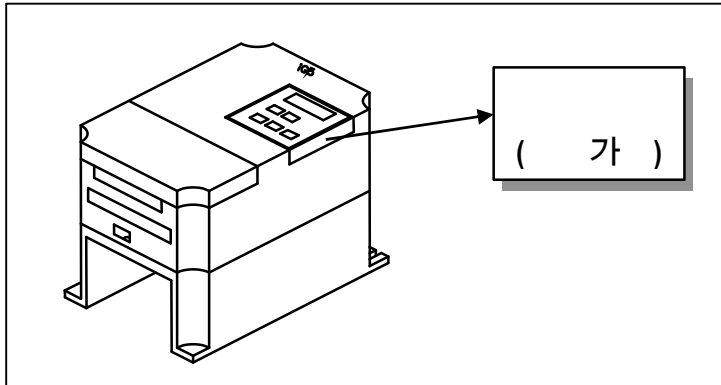
CM



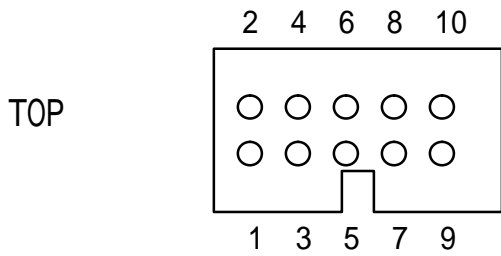
3.2 4

1)

( ) . ( . )  
 ( . )  
 가 가



2)



|    |     |  |              |
|----|-----|--|--------------|
|    |     |  |              |
| 1  | 5V  |  | 5V VR, V1, I |
| 2  | GND |  | CM           |
| 3  | RES |  | Writer       |
| 4  | VPP |  |              |
| 5  | LAT |  | Latch        |
| 6  | TXD |  | GND          |
| 7  | CLK |  | CLOCK GND    |
| 8  | RXD |  | GND          |
| 9  |     |  |              |
| 10 |     |  |              |

3

3) RS485

S+, S-

S-가

.

.

3.2.5

1)

가

ON

.

가 ON

2)

(FX, RX )

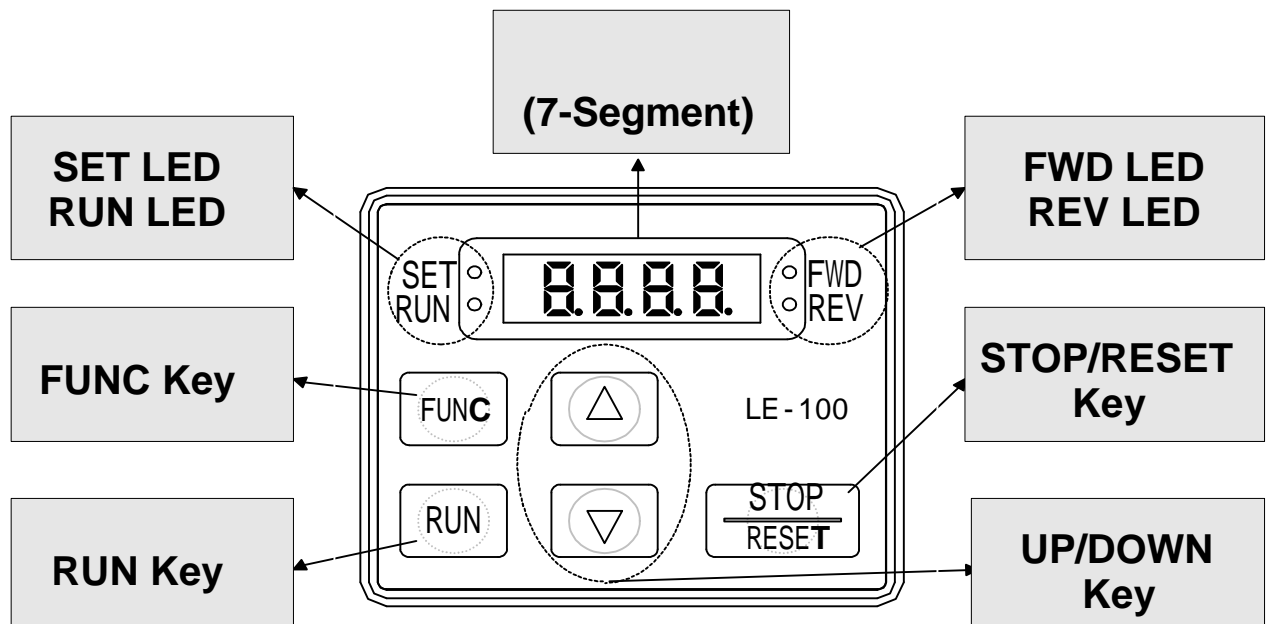
가

.

4.1

4.1.1

가 가 4 ,



|     |            |   |        |
|-----|------------|---|--------|
|     |            |   |        |
|     | FUNC       |   | /      |
|     | ▲ (Up)     |   | 가      |
|     | ▼ (Down)   |   |        |
|     | RUN        |   | 가 ) (  |
|     | STOP/RESET | / | ) .( 가 |
| LED | REV        |   |        |
|     | FWD        |   |        |
|     | SET        |   | FUNC   |
|     | RUN        |   | 가,     |

4.1.2

가

5

[FUNC]

LED (SET)가

[▲ (Up)], [▼ (Down)]

[FUNC]

가

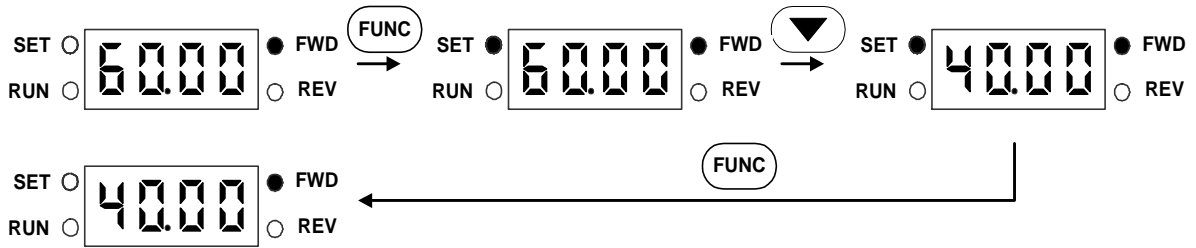
) 가

\* 가 ( 5 )

\* 가 (FU2- 94 [ ])

● [DRV]

- . )가 60 40



- . 가

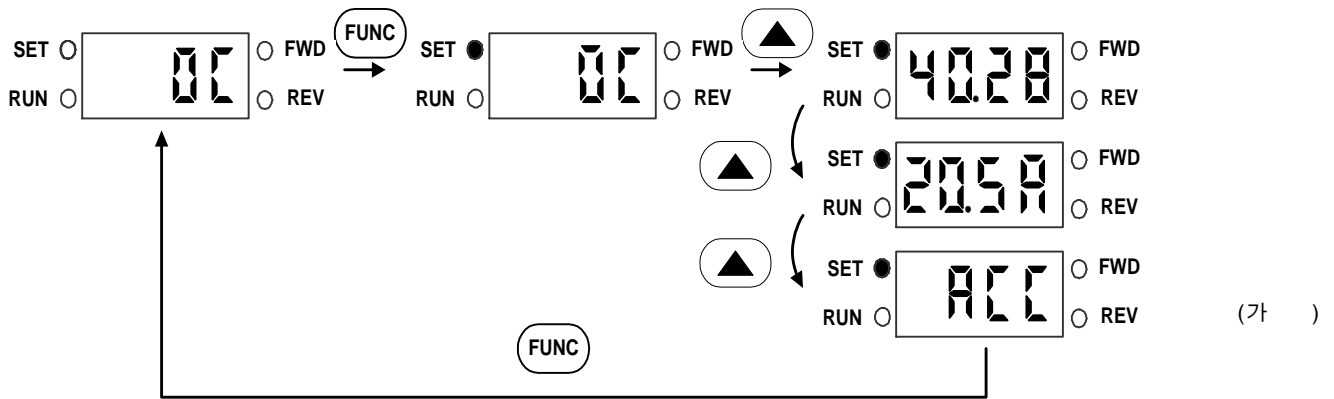
● [DRV]

- . ( . )





- [DRV]  
( . )  
-.0C 가

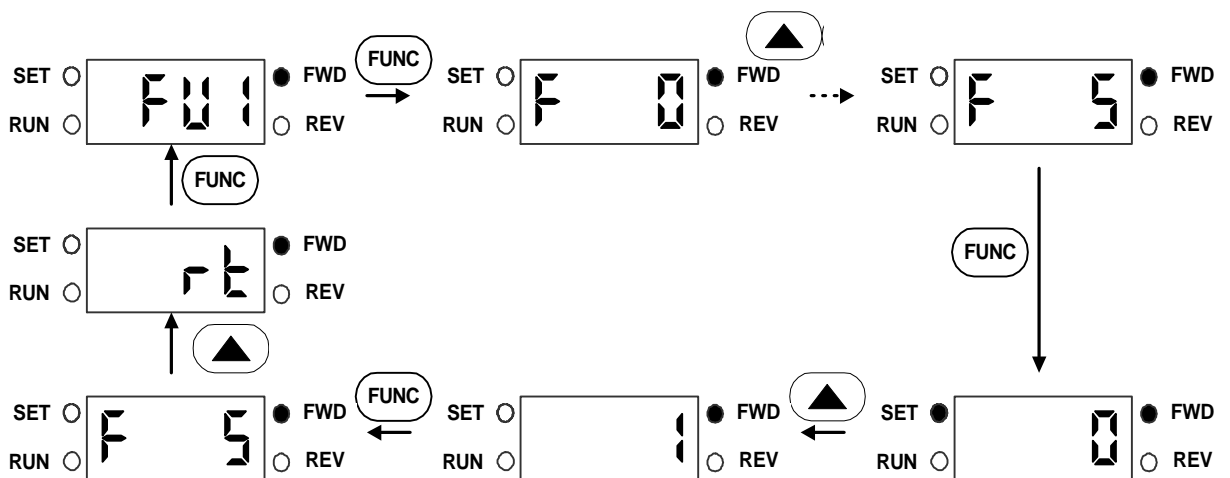


- . , , (가 , , )

( :40.28 Hz , 20.5A 가 )  
LED 4

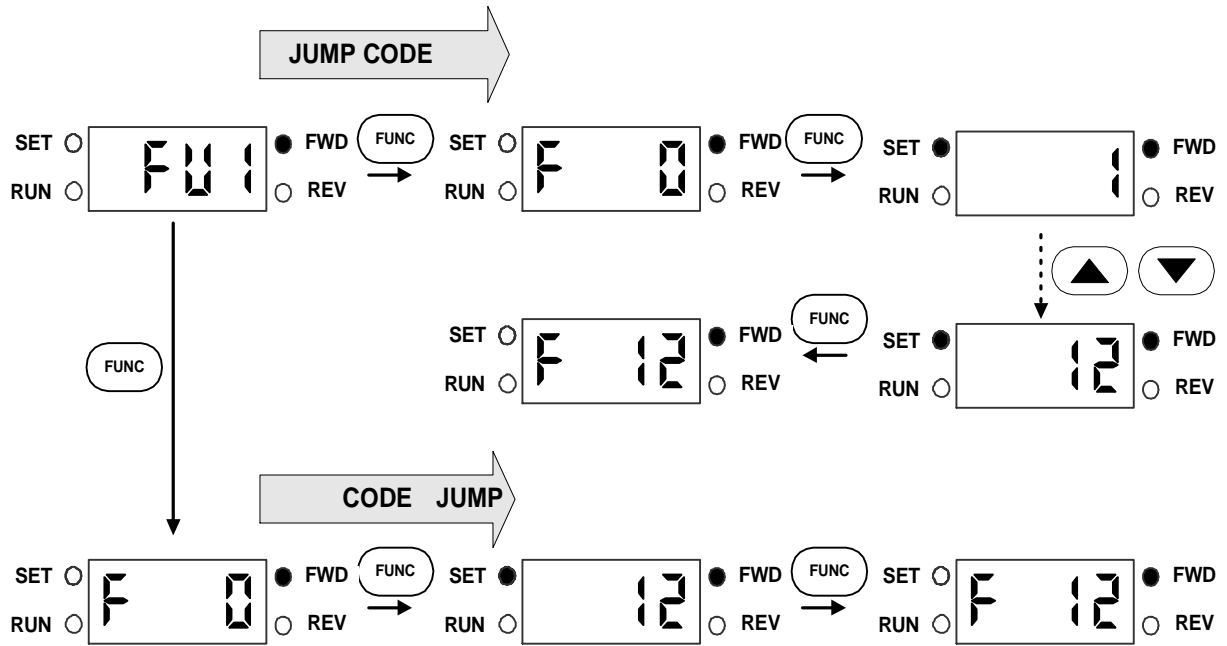
- . / [STOP/RESET]  
LED OFF .  
( [HW] OFF ON . )

- 1[FU1] [I/O ]  
-. )FU1 5 1



4

- 1[FU1]



4.1.4

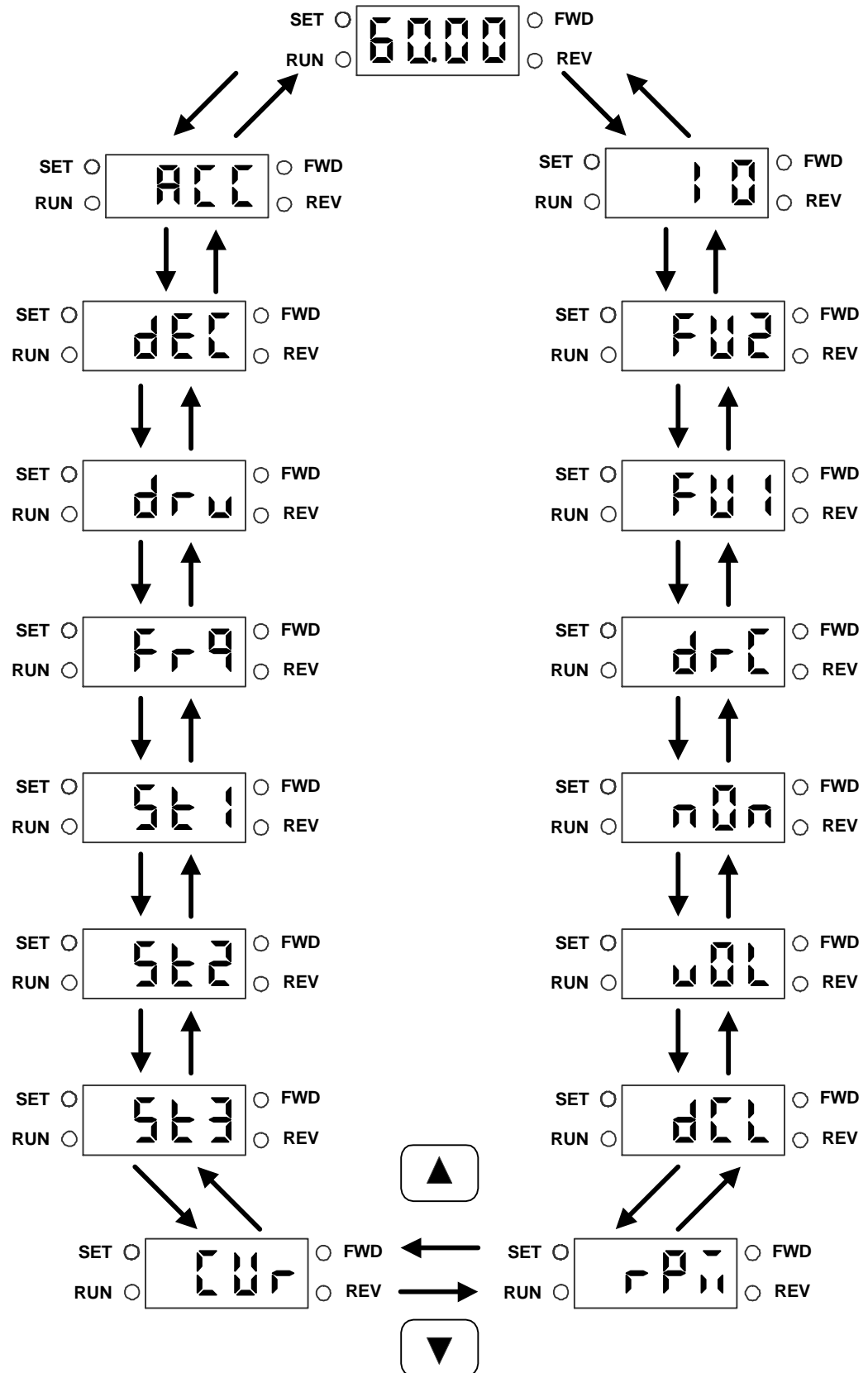
4

|   | [ DRV ] | , 가, |
|---|---------|------|
| 1 | [ FU1 ] | ,    |
| 2 | [ FU2 ] | ,    |
|   | [ I/O ] |      |

5

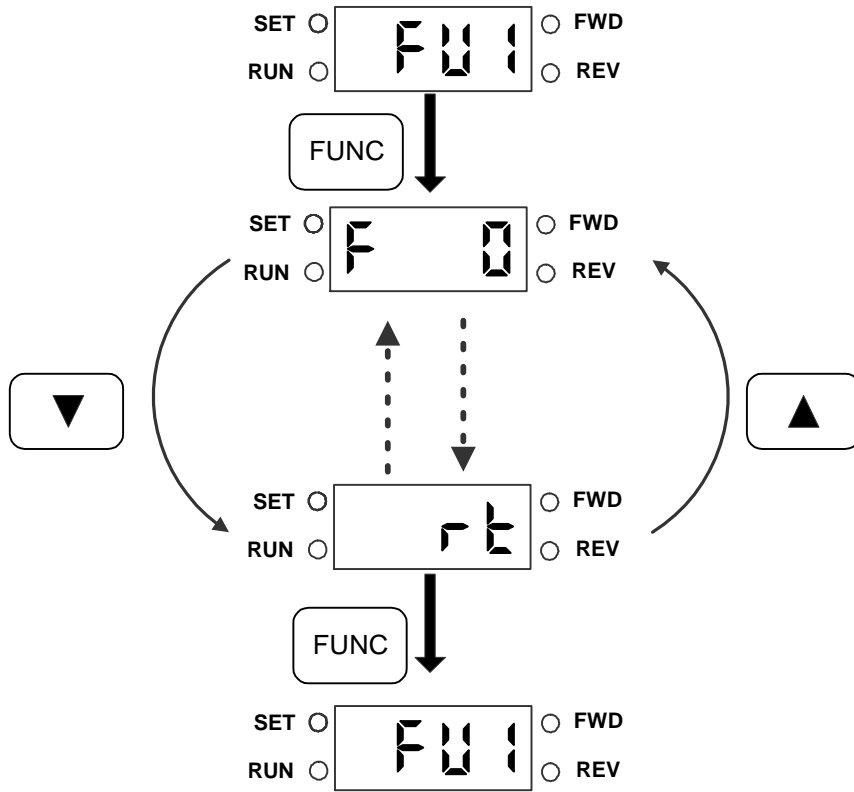
1)

[DRV]

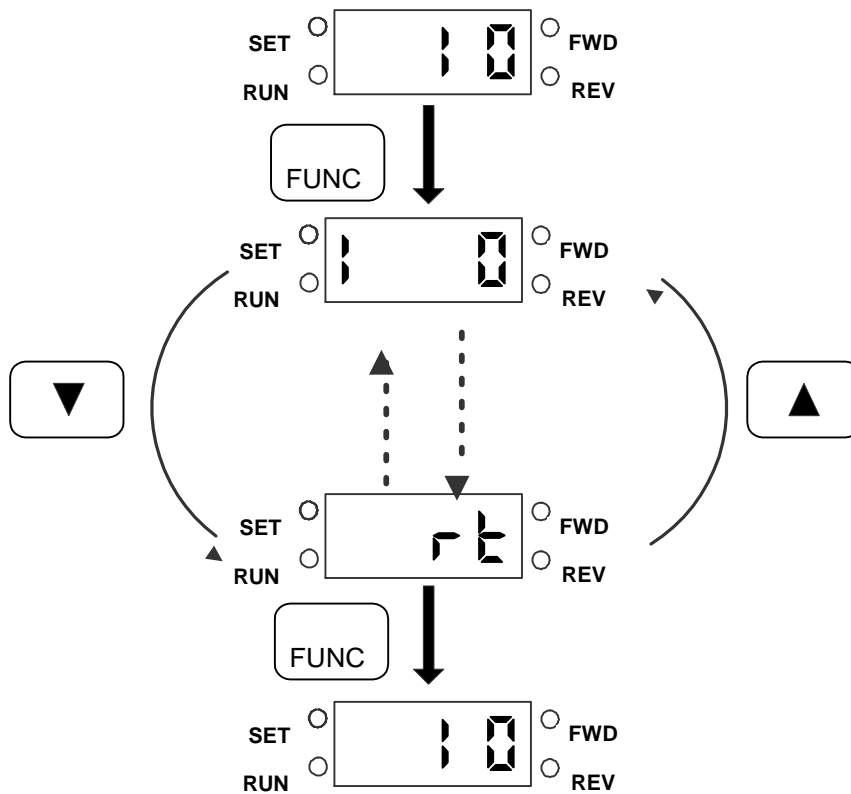


4

- 1, 2 [FU1, FU2]



- [I/O]



4.2

4.2.1

- 1) ON  
 (DRV-drv[ ] 1(Fx/Rx-1) , DRV-Frq[ ] 0( -1) )  
 DRV-drv[ ] 0( -1) 가
- 2) FX( RX) ON LED(FWD REV)가
- 3) 60.00Hz 가, FUNC, ▲ (Up), FUNC LED (RUN)
- 4) FX ( RX) OFF LED (FWD REV) 가

: DRV-drv [ ] 0( ) , DRV-Frq [ ] 가  
 2(V1),3(I),4(V1+I) )

4.2.2

- 1) ON  
 (DRV-drv[ ] 1(Fx/Rx-1) ,DRV-Frq[ ] 2(V1), 3(I),  
 4(V1+I) )  
 FX( RX) ON LED(FWD REV)가
- 2) ( ) 4 ~ 20mA  
 (60.00 Hz)

4

3) ( ) 20 ~ 4 mA  
가 . 가 0.00 Hz

4) FX ( RX) OFF .

#### 4.2.3

1) ON Keypad .  
(DRV-drv[ ] 0(Keypad) , DRV-Frq[ ] 0(Keypad-1)  
.)

4) FUNC, ▲ (Up), FUNC 60.00Hz .

5) [RUN] . 가 .

6) / [STOP/RESET] . 가 .

5

## 5.1

[DRV ]

|                 |   |  |       |   |
|-----------------|---|--|-------|---|
| 0.00            | ∴ | 0 – [Hz]   | 0.00  | 0 |
| ACC             | 가 | 0 – 999.9 [sec]  | 10.0  | 0 |
| dEC             |   | 0 – 999.9 [sec]  | 20.0  | 0 |
| drv             |   | 0 (Keypad)<br>1 (Fx/Rx-1)<br>2 (Fx/Rx-2)<br>3 (RS485)                    | 1     | X |
| Frq             |   | 0 (Keypad-1)<br>1 (Keypad-2)<br>2 (V1)<br>3 (I)<br>4 (V1+I)<br>5 (RS485) | 0     | X |
| St1             | 1 | 0 –  | 10.00 | 0 |
| St2             | 2 | 0 –  | 20.00 | 0 |
| St3             | 3 | 0 –  | 30.00 | 0 |
| CUr             |   | * [A]  | *     | * |
| rPM             |   | * [rpm]  | *     | * |
| dCL             |   | * [V]  | *     | * |
| vOL/P0r/<br>t0r |   | * [V]  | vOL   | * |
| n0n             |   | *  | *     | * |
| drC             |   | F ( )<br>r ( )   | F     | 0 |
| FU1             | 1 |  | *     | 0 |
| FU2             | 2 |  | *     | 0 |
| I 0             |   |  | *     | 0 |

)

-.

FU2

H73

0(

-vOL), 1(

-P0r), 2(

-t0r)

(

[FU1 ]

|      |       |  |      |   |
|------|-------|--|------|---|
| F 0  |       | 1 – 99   | 3    | 0 |
| F 3  | ,     | 0 (None)<br>1 (Fwd disable)<br>2 (Rev disable) | 0    | X |
| F 5  | 가     | 0 (Linear)<br>1 (S-curve)<br>2 (U-curve)       | 0    | X |
| F 6  |       | 3 (Minimum)<br>4 (Optimum)                     |      |   |
| F 7  |       | 0 (Decel)<br>1 (Dc-brake)<br>2 (Free-run)      | 0    | X |
| F 8  |       | -60.00 [Hz]                                    | 5.00 | X |
| F 9  |       | 0 – 60 [sec]                                   | 0.1  | X |
| F 10 |       | 0 – 200 [%]                                    | 50   | X |
| F 11 |       | 0 – 60 [sec]                                   | 1    | X |
| F 12 |       | 0 – 200 [%]                                    | 50   | X |
| F 13 |       | 0 - 60 [sec]                                   | 0    | X |
| F 20 |       | 40 – 400 [Hz]                                  | 60   | X |
| F 21 |       | 30– [Hz]                                       | 60   | X |
| F 22 |       | 0.1 - 10 [Hz]                                  | 0.1  | X |
| F 23 |       | 0 (No), 1 (Yes)                                | 0    | X |
| F 24 |       | 0 – [Hz]                                       | 0    | X |
| F 25 |       | [Hz] –   | 60   | X |
| F 26 | /     | 0 (Manual)<br>1 (Auto)                         | 0    | X |
| F 27 |       | 0.0 – 15.0 [%]                                 | 2.0  | X |
| F 28 |       |  |      |   |
| F 29 | V/F   | 0 (Linear)<br>1 (Square)<br>2 (User V/F)       | 0    | X |
| F 30 | V/F 1 | 0 – V/F 2[Hz]                                  | 15   | X |
| F 31 | V/F 1 | 0 - 100 [%]                                    | 25   | X |
| F 32 | V/F 2 | V/F 1 –<br>V/F 3[Hz]                           | 30   | X |



|      |       |                                  |     |   |
|------|-------|----------------------------------|-----|---|
| F 33 | V/F 2 | 0 - 100 [%]                      | 50  | X |
| F 34 | V/F 3 | V/F 2-<br>V/F 4[Hz]              | 45  | X |
| F 35 | V/F 3 | 0 - 100 [%]                      | 75  | X |
| F 36 | V/F 4 | V/F 3 -<br>[Hz]                  | 60  | X |
| F 37 | V/F 4 | 0 - 100 [%]                      | 100 | X |
| F 38 |       | 40.0 - 110.0 [%]                 | 100 | X |
| F 39 |       | 0 - 30 [%]                       | 0   | 0 |
| F 50 |       | 0 (No), 1 (Yes)                  | 0   | 0 |
| F 51 | 1     | 250 [%]                          | 180 | 0 |
| F 52 |       | 50 - 1 [%]                       | 120 | 0 |
| F 53 |       | 0 (Self-cool)<br>1 (Forced-cool) | 0   | 0 |
| F 54 |       | 30 - 250 [%]                     | 150 | 0 |
| F 55 |       | 0 - 30 [sec]                     | 10  | 0 |
| F 56 |       | 0 (No) , 1 (Yes)                 | 1   | 0 |
| F 57 |       | 30 - 250 [%]                     | 200 | 0 |
| F 58 |       | 0 - 60 [sec]                     | 60  | 0 |
| F 59 |       | 000 - 111( )<br>0:가<br>1:<br>2:  | 000 | X |
| F 60 |       | 30 - 250 [%]                     | 200 | X |
| rt   |       | *                                | *   | 0 |

)

- F8, F9, F10, F11      F7      1(Dc-brake)
- F24, F25      F23      1(Yes)
- F27, F28      F26      0
- F30, F31, F32, F33, F34, F35, F36, F37      F29      2(UserV/F)
- F51, F52, F53      F50      1
- F57, F58      F56      1

[FU2 ]

|      |   |  |       |   |
|------|---|--|-------|---|
| H 0  |   | 1 – 99   | 30    | 0 |
| H 1  | 1 |  | n0n   | * |
| H 2  | 2 |  | n0n   | * |
| H 3  | 3 |  | n0n   | * |
| H 4  | 4 |  | n0n   | * |
| H 5  | 5 |  | n0n   | * |
| H 6  |   | 0 (No) , 1 (Yes)                               | 0     | 0 |
| H 7  |   | 0 ~ [Hz]                                       | 5     | X |
| H 8  |   | 0 – 10sec                                      | 0     | X |
| H 10 |   | 0 (No) , 1 (Yes)                               | 0     | X |
| H 11 | 1 | 0 – 1 [Hz]                                     | 0     | X |
| H 12 | 1 | 1 - [Hz]                                       | 0     | X |
| H 13 | 2 | 0 – 2 [Hz]                                     | 0     | X |
| H 14 | 2 | 2 - [Hz]                                       | 0     | X |
| H 15 | 3 | 0 – 3 [Hz]                                     | 0     | X |
| H 16 | 3 | 3 - [Hz]                                       | 0     | X |
| H 19 |   | 00 – 11[ ]<br>0:<br>1:                         | 00    | 0 |
| H 20 |   | 0 (No)<br>1 (Yes)                              | 0     | 0 |
| H 21 |   | 0 (No)<br>1 (Yes)                              | 0     | 0 |
| H 22 |   | 0000 – 1111[ ]<br>0:가<br>1:<br>2:<br>3:H20 YES | 0000  | X |
| H 23 |   | 80 – 250 [%]                                   | 180   | 0 |
| H 24 | P | 0 – 9,999                                      | 100   | 0 |
| H 25 | I | 0 – 9,999                                      | 5,000 | 0 |
| H 26 |   | 0 – 10   | 0     | 0 |

|      |       |  |       |   |
|------|-------|--|-------|---|
| H 27 |       | 0 – 60 [sec]   | 1     | 0 |
| H 30 |       | 0.4, 0.8, 1.5, 2.2, 3.7  | -     | X |
| H 31 |       | 2 - 12   | 4     | X |
| H 32 |       | 0 – 10 [Hz]  | *     | X |
| H 33 | (rms) | 0.1 – 99.9[A]  | *     | X |
| H 34 | (rms) | 0.1 – 99.9[A]  | *     | X |
| H 36 |       | 50 – 100 [%]   | *     | X |
| H 37 |       | 0 – 2  | 0     | X |
| H 39 |       | 1 – 10 [kHz]   | 3.0   | 0 |
| H 40 |       | 0 (V/F)<br>1 (Slip compen)<br>2 (PID)  | 0     | X |
| H 50 | PID   | 0 (I)<br>1 (V1)  | 0     | X |
| H 51 | PID P | 0 – 9,999  | 3,000 | 0 |
| H 52 | PID I | 0 – 9,999  | 300   | 0 |
| H 53 | PID D | 0 – 9,999  | 0     | 0 |
| H 54 | PID   | 0 –  | 60    | 0 |
| H 70 | 가,    | 0 (Max freq)<br>1 (Delta freq)   | 0     | X |
| H 71 | 가,    | 0 (0.01 sec)<br>1 (0.1 sec)<br>2 (1 sec)   | 1     | 0 |
| H 72 |       | 0 (Cmd. Freq)<br>1 (Acc. Time)<br>2 (Dec. Time)<br>3 (Drv mode)<br>4 (Frq mode)<br>5 (Step Freq 1)<br>6 (Step Freq 2)<br>7 (Step Freq 3)<br>8 (Current)<br>9 (Speed)<br>10 (DC link Vtg)<br>11 (User disp)<br>12 ( )<br>13 ( ) | 0     | 0 |
| H 73 |       | 0 (Voltage)<br>1 (Watt)<br>2 (Torque)  | 0     | 0 |

|      |        |   |      |   |
|------|--------|---|------|---|
| H 74 |        | 1 – 1000 [%]  | 100  | 0 |
| H 75 | (DB)   | 0 (None)<br>1 (None)<br>2 (Ext. DB-R)                       | 2    | 0 |
| H 76 |        | 0 ~ 30 [%]  | 10   | 0 |
| H 79 |        | x.xx  | x.xx | * |
| H 81 | 2 가    | 0 – 999.9 [sec]   | 5    | 0 |
| H 82 | 2      |   | 10   | 0 |
| H 83 | 2      | 30 – [Hz]   | 60   | X |
| H 84 | 2 V/F  | 0 (Linear)<br>1 (Square)<br>2 (User V/F)                    | 0    | X |
| H 85 | 2      | 0.0 – 15.0[%]   | 2.0  | X |
| H 86 | 2      |   |      |   |
| H 87 | 2      | 30 – 250 [%]  | 200  | X |
| H 88 | 2<br>1 | 2<br>– 250 [%]  | 180  | 0 |
| H 89 | 2      | 50 – 2<br>1 [%]   | 120  | 0 |
| H 90 | 2      | 0.1 – 99.9 [A]  | *    | X |
| H 91 |        | 0 (No), 1 (Yes)   | 0    | X |
| H 92 |        | 0 (No), 1 (Yes)   | 0    | X |
| H 93 |        | 0 (No) 3 (FU1)<br>1 (All Groups) 4 (FU2)<br>2 (DRV) 5 (I/O) | 0    | X |
| H 94 |        | 0 – 255   | 0    | 0 |
| rt   |        | *   | *    | 0 |

- )
- H11, H12, H13, H14, H15, H16 H10 1(Yes)
  - H32, H34 H40 1(Slip Compen)
  - H50, H51, H52, H53, H54 H40 2
  - H81, H82, H83, H84, H85, H86, H87, H88, H89, H90 10  
12, I13, I14 7(2nd Func)
  - H94( ):
  - H7( )

[ I/O ]

|      |   |  |          |   |
|------|---|--|----------|---|
| I 0  |   | 1 – 99   | 1        | 0 |
| I 1  | V1  | 0 –9,999 [msec]  | 100      | 0 |
| I 2  | V1  | 0 - V1 [V]   | 0        | 0 |
| I 3  | V1  | 0 – [Hz]   | 0        | 0 |
| I 4  | V1  | V1 - 12[V]   | 10       | 0 |
| I 5  | V1  | 0 – [Hz]   | 60       | 0 |
| I 6  | I   | 0 – 9,999 [msec]   | 100      | 0 |
| I 7  | I   | 0 - I [mA]   | 4        | 0 |
| I 8  | I   | 0 – [Hz]   | 0        | 0 |
| I 9  | I   | I - 24[mA]   | 20       | 0 |
| I 10 | I   | 0 – [Hz]   | 60       | 0 |
| I 11 |   | 0 (None)<br>1 (half of x1)<br>2 (below x1)   | 0        | 0 |
| I 12 | P1<br><br>8, 15, 20, 21, 22, 23<br>24, 25, 26<br>(- Reserved -) | 0 (Speed-L)<br>1 (Speed-M)<br>2 (Speed-H)<br>3 (XCEL-L)<br>4 (XCEL-M)<br>5 (XCEL-H)<br>6 (Dc-brake)<br>7 (2nd Func)<br>9 (V1-Ext)<br>10 ( Up)                      11 (Down)<br>12 (3-Wire)<br>13 (Ext trip – A)<br>14 (Ext trip – B)<br>16 (Open-loop)<br>17 (Main-drive)<br>18 (Analog hold)<br>19 (XCEL stop) | 0        | 0 |
| I 13 | P2  | I 12   | 1        | 0 |
| I 14 | P3  | I 12   | 2        | 0 |
| I 15 |   | 00000000 –11111111 [ ]   | 00000000 | * |
| I 16 |   | 0-1 [ ]  | 0        | * |

|      |                                       |   |     |   |
|------|---------------------------------------|---|-----|---|
| I 17 |                                       | 2 – 50  | 2   | 0 |
| I 20 |                                       | 0 – [Hz]  | 10  | 0 |
| I 21 | 4                                     | 0 – [Hz]  | 40  | 0 |
| I 22 | 5                                     | 0 – [Hz]  | 50  | 0 |
| I 23 | 6                                     | 0 – [Hz]  | 40  | 0 |
| I 24 | 7                                     | 0 – [Hz]  | 30  | 0 |
| I 25 | 가 1                                   | 0 – 999.9 [sec]   | 20  | 0 |
| I 26 | 1                                     | 0 – 999.9 [sec]   | 20  | 0 |
| I 27 | 가 2                                   | 0 – 999.9 [sec]   | 30  | 0 |
| I 28 | 2                                     | 0 – 999.9 [sec]   | 30  | 0 |
| I 29 | 가 3                                   | 0 – 999.9 [sec]   | 40  | 0 |
| I 30 | 3                                     | 0 – 999.9 [sec]   | 40  | 0 |
| I 31 | 가 4                                   | 0 – 999.9 [sec]   | 50  | 0 |
| I 32 | 4                                     | 0 – 999.9 [sec]   | 50  | 0 |
| I 33 | 가 5                                   | 0 – 999.9 [sec]   | 40  | 0 |
| I 34 | 5                                     | 0 – 999.9 [sec]   | 40  | 0 |
| I 35 | 가 6                                   | 0 – 999.9 [sec]   | 30  | 0 |
| I 36 | 6                                     | 0 – 999.9 [sec]   | 30  | 0 |
| I 37 | 가 7                                   | 0 – 999.9 [sec]   | 20  | 0 |
| I 38 | 7                                     | 0 – 999.9 [sec]   | 20  | 0 |
| I 40 | FM                                    | 0 (Frequency)<br>1 (Current)<br>2 (Voltage)<br>3 (DC link Vtg)  | 0   | 0 |
| I 41 | FM                                    | 10 – 200 [%]  | 100 | 0 |
| I 42 |                                       | 0 - [Hz]  | 30  | 0 |
| I 43 |                                       | 0 - [Hz]  | 10  | 0 |
| I 44 | MO<br><br>15,16,18,19<br>(-Reserved-) | 0 (FDT-1) 14 (Steady)<br>1 (FDT-2) 17 (Search)<br>2 (FDT-3) 20 (Ready)<br>3 (FDT-4)<br>4 (FDT-5)<br>5 (OL)<br>6 (IOL)<br>7 (Stall)<br>8 (OV)<br>9 (LV)<br>10 (OH)<br>11 (Lost Command)<br>12 (Run)<br>13 (Stop) | 12  | 0 |

|      |                              |   |      |   |
|------|------------------------------|---|------|---|
|      |                              |   |      |   |
| I 45 | (30A, 30B, 30C )<br>0:<br>1: | 000 – 111 [ ]<br>0: (LV)<br>1:<br>2:  | 010  | 0 |
| I 46 |                              | 1 – 250   | 1    | 0 |
| I 47 |                              | 0 (1200 bps)<br>1 (2400 bps)<br>2 (4800 bps)<br>3 (9600 bps)<br>4 (19200 bps)   | 3    | 0 |
| I 48 |                              | 0 (None)<br>1 (FreeRun)<br>2 (Stop)   | 0    | 0 |
| I 49 |                              | 0.1 – 120 [sec]   | 1.0  | 0 |
| I 50 |                              | 0 ~ 6 :LS-Bus ASCII<br>7 ~ 11 : Modbus RTU<br>0 (Data:8, Parity:None, Stop:1)<br>1 (Data:7, Parity:None, Stop:2)<br>2 (Data:7, Parity:Even, Stop:1)<br>3 (Data:7, Parity:Odd, Stop:1)<br>4 (Data:8, Parity:None, Stop:2)<br>5 (Data:8, Parity:Even, Stop:1)<br>6 (Data:8, Parity:Odd, Stop:1)<br>7 (Parity:None, Stop:2)<br>8 (Parity:None, Stop:1)<br>9 (Parity:None, Stop:2)<br>10 (Parity:Even, Stop:1)<br>11 (Parity:Odd, Stop:1) | 7    | 0 |
| I 53 |                              | 0.02 – 1 [sec]  | 0.02 | 0 |
| rt   |                              | *   | *    | 0 |

) - I 50 7

Dummy data(FF)가

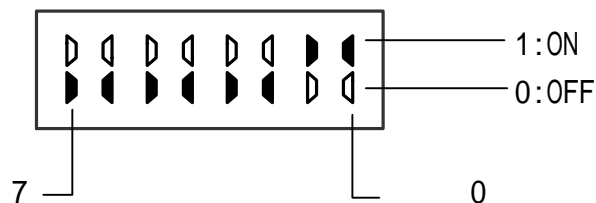
- (bit)

가 0 가

1

( F59, H19, H22, I15, I16, I45 가 )

) 00000011



5.2 [DRV ]

DRV-0.00 [ ]

: DRV-Frq [ ]  
 FU1-20 [ ]  
 I/O-1 ~ 10 [ ]

- DRV-0.00 [ ] 2 가  
 DRV-Frq [ ] Keypad-1, Keypad-2  
 FU1-20 [ ]
- DRV-Frq [ ]
- DRV-Frq [ ] V1, I, V1+I I/O-1 ~ 10 [ ]

| DRV-Frq      |  |   |
|--------------|--|---|
| 0 (Keypad-1) |  | DRV-0.00 [FUNC]<br>[FUNC]<br>( )                      |
| 1 (Keypad-2) |  | DRV-0.00 [FUNC]<br>[ ^ (Up) ], [ v (Down) ]<br>[FUNC] |
| 2 (V1)       |  | “ V1 ” (0 ~ 10V)<br>I/O-1 ~ 5                         |
| 3 (I)        |  | “ I ” (4 ~ 20mA)<br>I/O-6 ~ 10                        |
| 4 (V1+I)     |  | “ V1 ”, “ I ” (0 ~ 10V, 4 ~ 20mA)<br>I/O-1 ~ 10       |
| 5 (RS485)    |  | RS485   |



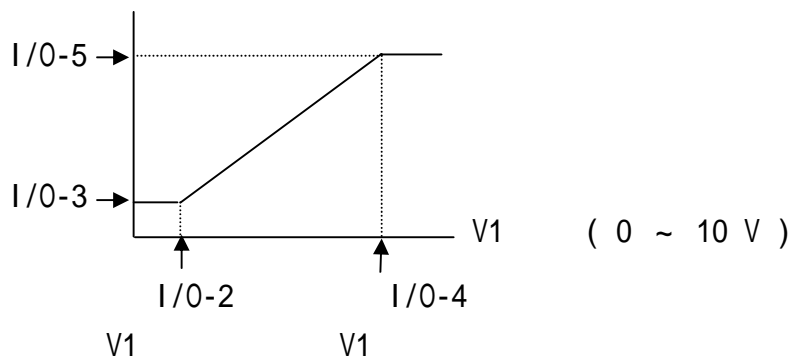
I/O-1 ~ 5 [ ( V1 ) ]

- “ V1 ”
- DRV-Frq [ ] V1, V1+I

| I/O-1 | V1 | V1   |
|-------|----|------|
| I/O-2 | V1 | 가 V1 |
| I/O-3 | V1 | V1   |
| I/O-4 | V1 | 가 V1 |
| I/O-5 | V1 | V1   |

| I/O-1 | 100 [msec] | 0 ~ 9999 [msec] |
|-------|------------|-----------------|
| I/O-2 | 0 [V]      | 0 ~ V1 [V]      |
| I/O-3 | 0 [Hz]     | 0 ~             |
| I/O-4 | 10 [V]     | V1 ~ 12 [V]     |
| I/O-5 | 60 [Hz]    | 0 ~             |

→ : I/O-01 [V1  
] 가 가



I/O-6 ~ 10 [ ( I ) ]

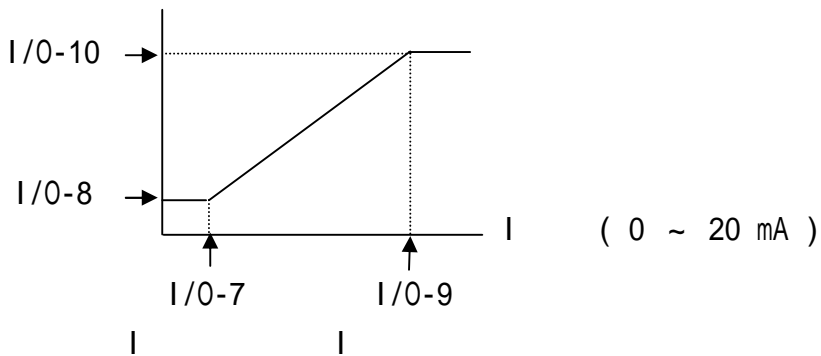
“ | ”

DRV-Frq [ ] I, V1+I

| I/O-6  |  |   |
|--------|--|---|
| I/O-7  |  | 가 |
| I/O-8  |  |   |
| I/O-9  |  | 가 |
| I/O-10 |  |   |

| I/O-6  | 100 [msec] | 0 ~ 9999 [msec] |
|--------|------------|-----------------|
| I/O-7  | 4 [mA]     | 0 ~ [mA]        |
| I/O-8  | 0 [Hz]     | 0 ~             |
| I/O-9  | 20 [mA]    | ~ 24 [mA]       |
| I/O-10 | 60 [Hz]    | 0 ~             |

➔ : I/O-6 [I  
] 가 가



DRV-ACC, dEC[ 0 가, ]

: FU1-20 [ ]  
 FU2-70 [가, ]  
 FU2-71 [가, ]  
 I/O-12 ~ 14 [ ]  
 I/O-25 ~ 38 [ 1,2,3 가, ]

- 가, FU2-70 [가, ] 가, . 가,  
 가 가 0 Hz  
 FU1-20 [ ] .  
 FU1-20 [ ] 0 Hz .
- FU2-70 [가, ]가 가,

- 가, 가  
 (P1, P2, P3) “ XCEL-L ” , “ XCEL-M ” , “ XCEL-H ”  
 가,  
 I/O-25 ~ 38 [ 1 ~ 7가, ] .

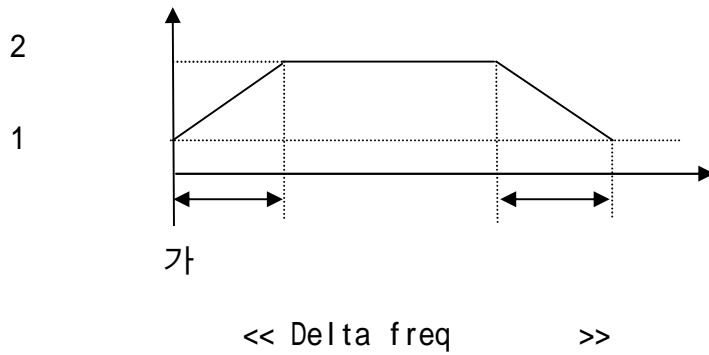
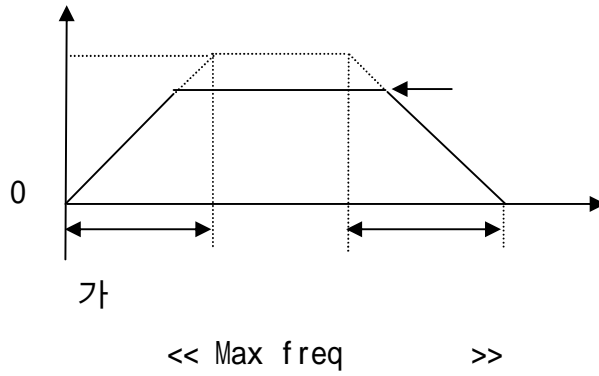
➔ : P1, P2, P3 I/O 12 ~ 14[ ]

|         |     | XCEL-H | XCEL-M | XCEL-L |        |
|---------|-----|--------|--------|--------|--------|
| DRV-ACC | 0 가 | 0      | 0      | 0      | 10 sec |
| DRV-dEC | 0   | 0      | 0      | 0      | 20 sec |
| I/O-25  | 1 가 | 0      | 0      | 1      | 20 sec |
| I/O-26  | 1   | 0      | 0      | 1      | 20 sec |
| I/O-27  | 2 가 | 0      | 1      | 0      | 30 sec |
| I/O-28  | 2   | 0      | 1      | 0      | 30 sec |
| I/O-29  | 3 가 | 0      | 1      | 1      | 40 sec |
| I/O-30  | 3   | 0      | 1      | 1      | 40 sec |
| I/O-31  | 4 가 | 1      | 0      | 0      | 50 sec |
| I/O-32  | 4   | 1      | 0      | 0      | 50 sec |
| I/O-33  | 5 가 | 1      | 0      | 1      | 40 sec |
| I/O-34  | 5   | 1      | 0      | 1      | 40 sec |
| I/O-35  | 6 가 | 1      | 1      | 0      | 30 sec |
| I/O-36  | 6   | 1      | 1      | 0      | 30 sec |
| I/O-37  | 7 가 | 1      | 1      | 1      | 20 sec |
| I/O-38  | 7   | 1      | 1      | 1      | 20 sec |

FU2-70 [ 가, ]

- 가, . 가 .

|                |  |         |
|----------------|--|---------|
| FU2-70         |  |         |
| 0 (Max freq)   |  | 0 . ( ) |
| 1 (Delta freq) |  | .       |



FU2-71 [ 가, ]

- 가,

| FU2-71       |                   |        |           |
|--------------|-------------------|--------|-----------|
| 0 (0.01 sec) | 10 msec<br>99.99  | 가<br>가 | .<br>.    |
| 1 (0.1 sec)  | 100 msec<br>999.9 | 가<br>가 | .<br>.( ) |
| 2 (1 sec)    | 1 sec<br>9999     | 가<br>가 | .<br>.    |

DRV-drv [ ]

- 

| Drv-drv     |                             |
|-------------|-----------------------------|
| 0 (Keypad)  | .                           |
| 1 (Fx/Rx-1) | (FX,RX)<br>FX : ,<br>RX : , |
| 2 (Fx/Rx-2) | (FX,RX)<br>FX : ,<br>RX : , |
| 3 (RS485)   | RS485 , .                   |

DRV-Frq [ ]

: DRV-0.00 [ ]  
I/O-1 ~ 10 [ ]

- DRV-Frq [ ]
- DRV-Frq [ ] V1,I,V1+I I/O-1 ~ 10 [ ]

| DRV-Frq      |  |   |
|--------------|--|---|
| 0 (Keypad-1) |  | DRV-0.00 . [FUNC]<br>[ ▲ (Up) ], [ ▼ (Down) ]<br>. [FUNC] |
| 1 (Keypad-2) |  | DRV-0.00 . [FUNC]<br>[ ▲ (Up) ], [ ▼ (Down) ]<br>. [FUNC] |
| 2 (V1)       |  | “ V1 ” (0 ~ 10V)<br>. I/O-1 ~ 5                           |
| 3 (I)        |  | “ I ” (4 ~ 20mA)<br>. I/O-6 ~ 10                          |
| 4 (V1+I)     |  | “ V1 ” , “ I ” (0 ~ 10V ,<br>4 ~ 20mA) . I/O-1 ~ 10       |
| 5(RS485)     |  | RS485   |

DRV-St1, St2, St3 [ ]

: I/O-12 ~ 14 [ ]  
I/O-17 [ ]

- (P1 ~ P3) . Speed-L, Speed-M, Speed-H 가

Speed-L:  
Speed-M:  
Speed-H:

|         | Speed-H | Speed-M | Speed-L | JOG |   |
|---------|---------|---------|---------|-----|---|
| DRV-Frq | 0       | 0       | 0       | 0   |   |
| I/O-20  | X       | X       | X       | 1   |   |
| DRV-St1 | 0       | 0       | 1       | 0   | 1 |
| DRV-St2 | 0       | 1       | 0       | 0   | 2 |
| DRV-St3 | 0       | 1       | 1       | 0   | 3 |

0 : OFF, 1: ON, X : ( )

☒ : 0 DRV-Frq .

| DRV-Frq  | 0 |  |
|----------|---|--|
| Keypad-1 |   |  |
| Keypad-2 | “ |  |
| V1       |   |  |
| I        | “ |  |
| V1+I     | “ |  |

DRV-CUr [ ]

● (rms ) .

DRV-rPM [ ]

: FU2-74 [ ]

●  
● (r/min) (m/min)

FU2-74 [ ]

|  |
|--|
| $= 120 \times F / P \quad (F: \quad , P: \quad )$ $= \quad \times \quad$ |
|--|

DRV-dCL [ ]

● .





→ : H/W FAN , EEPROM , Wire , CPU2  
 (GF),NTC H/W ON

→ : 가 가

- FU2-1 ~ 5 [ ] 5  
 가 [FUNC] [▲ (Up)],  
 [▼ (Down)] ( , ,가 ,  
 , ) . [FUNC]

| FU2-1 | -1 | 1 |
|-------|----|---|
| FU2-2 | -2 | 2 |
| FU2-3 | -3 | 3 |
| FU2-4 | -4 | 4 |
| FU2-5 | -5 | 5 |

- FU2- 6 [ ] FU2-1 ~ 5 [ ]

DRV-drC [ ]

- . DRV-drv[ ] 0(Keypad)

| DRV-drC |  |
|---------|--|
| F       |  |
| r       |  |

DRV FU1 [ FU1 ]

DRV FU2 [ FU2 ]

DRV I/O [ I/O ]

- [FUNC] .  
, 가 .

- .

6

6.1.

6.1.1

| 7-   |           |                          |
|------|-----------|--------------------------|
| 0C   |           | 가                        |
| 0u   |           | 가                        |
| 0LH  | ( )       | 가                        |
| 0H   |           | 가                        |
| E4H  |           | : 150% 1                 |
| Lu   |           |                          |
| COL  |           | (R,S,T) 가<br>50% 가<br>10 |
| OP0  |           | (U,V,W)                  |
| b4   | BX<br>( ) | BX 가<br>BX 가 OFF         |
| 10LH |           | 가<br>( )                 |
| E4HA | A         | (A )                     |

|      |          |                             |
|------|----------|-----------------------------|
| 7-   |          |                             |
| E4E6 | B        | (B )                        |
| ---  |          | (I/O-48)<br>가 가             |
| E01  | EEPROM 1 |                             |
| E02  | EEPROM 2 |                             |
| HW   |          | CPU , EEP , FAN , (GF), NTC |
| CPU2 | CPU      | CPU                         |
| EEP  | EEP      | EEPROM                      |
| FAN  | FAN      | FAN                         |
| GF   |          | ON                          |
| NTC  | NTC      | NTC                         |



"FAN", "EEP", "CPU2", "GF", "NTC" "HW",  
[FUNC], [^], [^], [^]

[ ]

● I/O-48

3 가 가

| I/O-48      |          |
|-------------|----------|
| 0 (None)    | ( )      |
| 1 (FreeRun) | Free Run |
| 2 (Stop)    |          |

●

|      |      |
|------|------|
| ___L | V1 I |
|------|------|

[  
1) ( : ) ]

|         |     |      |
|---------|-----|------|
|         |     |      |
| DRV-n0n | 0 C | .( ) |

- [FUNC]  
[ ^ (Up)], [ ▼ (Down)] ( , , )  
가 , , )  
[FUNC] . [STOP/RESET( )] <FU2-1  
>

2)

- H 1 ~ H 5 < > 5  
가

|     |   |
|-----|---|
|     |   |
| H 1 | 1 |
| H 2 | 2 |
| H 3 | 3 |
| H 4 | 4 |
| H 5 | 5 |

- H 6 < > H 1 ~ 5 < >

6.1.2 ( )

3 가

1. [STOP/RESET( )]
2. RST-CM
3. OFF , ON

6.1.3

|     |   |  |
|-----|---|--|
|     | <ol style="list-style-type: none"> <li>1) GD<sup>2</sup> 가,</li> <li>2) 가</li> <li>3) Free run 가</li> <li>4)</li> <li>5)</li> <li>6) 가</li> </ol> | <ol style="list-style-type: none"> <li>1) 가,</li> <li>2) 가</li> <li>3) 가</li> <li>4)</li> <li>5)</li> <li>6) ( ) IGBT</li> </ol> |
|     | <ol style="list-style-type: none"> <li>1) GD<sup>2</sup></li> <li>2) 가</li> <li>3)</li> </ol>   | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> <li>3)</li> </ol>   |
| ( ) | <ol style="list-style-type: none"> <li>1) 가</li> <li>2)</li> <li>3) V/F</li> </ol>  | <ol style="list-style-type: none"> <li>1) ,</li> <li>2)</li> <li>3) V/F</li> </ol>   |
|     | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> <li>3) 가</li> </ol>  | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> <li>3) 40</li> </ol>  |
|     | <ol style="list-style-type: none"> <li>1) 가</li> <li>2) 가</li> <li>3) ETH</li> <li>4)</li> <li>5) V/F</li> <li>6)</li> </ol>                      | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> <li>3) ETH</li> <li>4)</li> <li>5) V/F</li> <li>6)</li> </ol>         |
|     | <ol style="list-style-type: none"> <li>1)</li> <li>2) 가 ( , 가 )</li> <li>3)</li> </ol>  | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> <li>3)</li> </ol>   |
|     | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> </ol>  | <ol style="list-style-type: none"> <li>1)</li> <li>2)</li> </ol>   |
| H/W | <ol style="list-style-type: none"> <li>1) FAN</li> <li>2) CPU2 (CPU )</li> <li>3) EEP ( )</li> <li>4) GF</li> <li>5) NTC</li> </ol>               | <ol style="list-style-type: none"> <li>1)</li> <li>2) ~ 3)</li> <li>4) , ,</li> <li>5)</li> </ol>                                |
|     | <ol style="list-style-type: none"> <li>1)</li> </ol>  | <ol style="list-style-type: none"> <li>1)</li> </ol>   |
|     | <ol style="list-style-type: none"> <li>1) 가</li> <li>2)</li> </ol>  | <ol style="list-style-type: none"> <li>1) ,</li> <li>2)</li> </ol>   |



가

6.1.4

|                    |  |
|--------------------|--|
| <p>가 .</p>         | <p>1) ● ( LED 가 가- 가? )<br/>         ● 가 가?<br/>         2) ● 가 가?<br/>         ● 가 가?<br/>         ● 가 가?<br/>         3) ● (F 3)가 가?<br/>         ● (DRV-drv) 가?<br/>         ● 0 가?<br/>         4) ● 가 가? 가?<br/>         ( )<br/>         5) ● LED (STOP LED )가<br/>         가?</p> |
| <p>.</p>           | <p>● U,V,W 가?<br/>         ● ( / ) 가?</p>  |
| <p>가 .<br/>가 .</p> | <p>● 가 가?( )<br/>         ● 가?<br/>         ● (F 24), (F 25)<br/>         (10 1 ~ 10) 가?<br/>         ● 가?( )</p>  |
| <p>가,<br/>가,</p>   | <p>● 가, 가?<br/>         ● 가 가?<br/>         ● (F 27, F 28)<br/>         가?</p>   |
| <p>가</p>           | <p>● 가 가?<br/>         ● ( ) 가?</p>  |
| <p>가</p>           | <p>● (FU1-25) 가?<br/>         ● 가 가?<br/>         ● (FU1-27, 28) (FU1-59, 60)<br/>         가?</p>  |
| <p>가 .</p>         | <p>1) ● 가 가?<br/>         2) ● 가 가?<br/>         3) ● V/F 가?(500m )</p>  |

6

6.2.

SV-iG5

6.2.1

●

●

B1-B2

DC 30V

●

PWM

6.2.2

1)

●

가

가?

●

가?

●

가?

●

가?

●

가?

2)

●

가?

➔

●

가?

➔

●

가?

➔

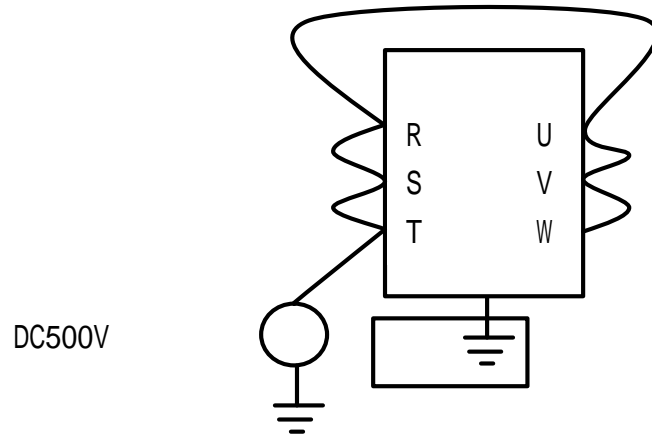


3)

- 
- 

가

DC 500V



4)

- 

가 가

5)

|  |  |     | 1 | 2 |       |           |   |
|--|--|-----|---|---|-------|-----------|---|
|  |  | '가' | O |   |       | -10 ~ +40 | , |
|  |  | 가.  | O |   |       | 50%       | , |
|  |  | 가.  | O |   | R,S,T |           | / |

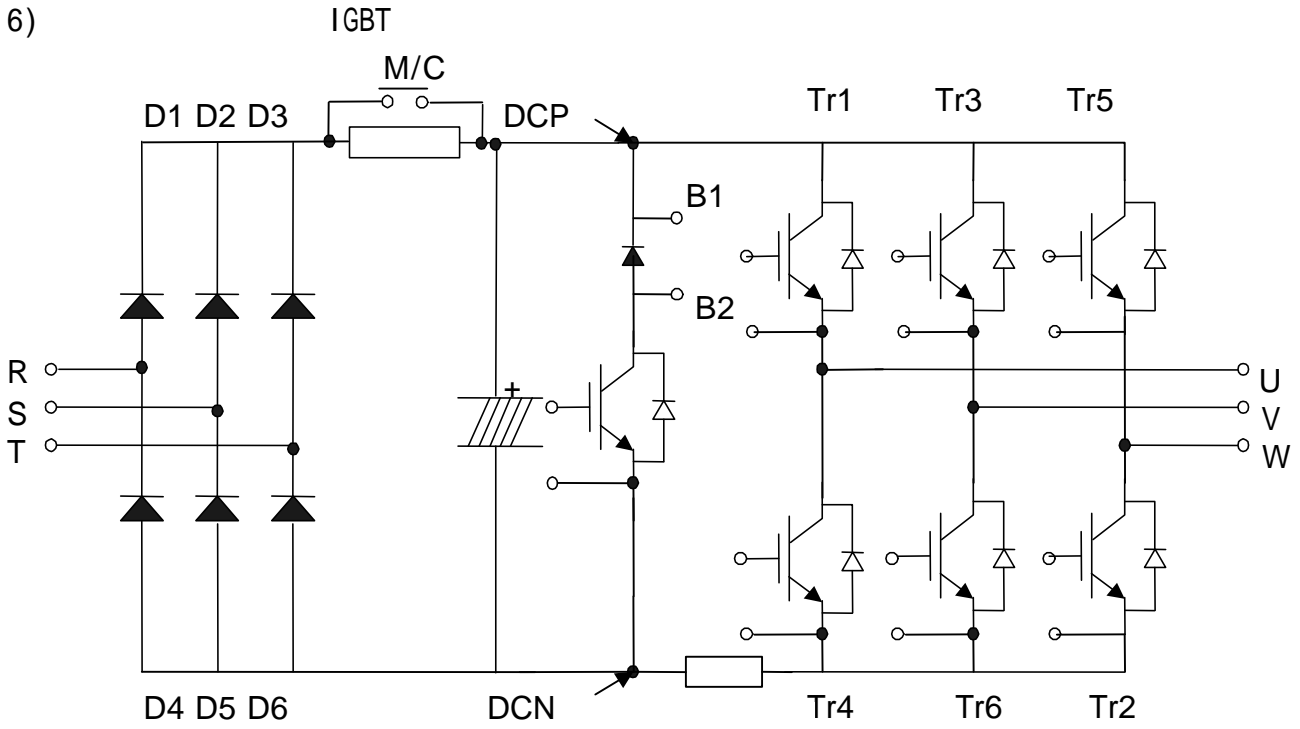
|  |           |                                |  | 1             |                                    |                     |            | 2 |
|--|-----------|--------------------------------|--|---------------|------------------------------------|---------------------|------------|---|
|  |           | 1) ( )<br>2) 가?<br>3) 가?<br>4) |  | O O<br>O<br>O | 1) R,S,T, U,V,W<br><br>2)<br>3)    | 1)5M<br>2),3)       | DC<br>500V |   |
|  | /         | 1) 가.<br>2) 가.                 |  | O<br>O        | .                                  |                     |            |   |
|  |           | 가?                             |  | O             | .                                  |                     |            |   |
|  | IGBT<br>/ |                                |  |               | R,S,T<-> P,N<br>, U,V,W<br><-> P,N | ( )                 | /          |   |
|  |           | 1) 가?<br>2) 가,<br>가?<br>3)     |  | O<br>O<br>O   | 1),2)<br><br>3)                    | 1),2)<br><br>3) 85% |            |   |
|  |           | 1) 가?<br>2) 가?                 |  | O<br>O        | 1)<br>2)                           |                     |            |   |
|  |           | 1) 가?<br>2)                    |  | O<br>O        | 1)<br>2)                           | 1)<br>2) ± 10%      | /          |   |

|  |  | 1)<br>2)       |        | O<br>O |   | 1) U, V, W<br>2) | 1) 200V (400V)<br>4V(8V)<br>2) 가<br>/ |
|--|--|----------------|--------|--------|---|------------------|---------------------------------------|
|  |  | 1) 가.<br>2) 가. | O      | O      |   | 1) OFF<br>2)     | 1)<br>2)                              |
|  |  | 가.             |        | O      |   |                  | ,<br>/                                |
|  |  | 1) 가.<br>2) 가. | O<br>O |        |   | 1) , ,<br>2) ,   |                                       |
|  |  | (<br>)         |        |        | O | U, V, W          | 5M<br>500V                            |

( ) ( ) 400V .

가 .

6)



- (R, S, T) (U, V, W) .
- R, S, T, U, V, W, B1, B2 .
- 가 .
- .
- 가 .
- 가 가 . Ω~
- Ω . , .

|      |     | +  | -  |     |     | +   | -   |  |
|------|-----|----|----|-----|-----|-----|-----|--|
|      | D1  | R  | B1 | D4  | R   | DCN |     |  |
|      |     | B1 | R  |     | DCN | R   |     |  |
|      | D2  | S  | B1 |     | D5  | S   | DCN |  |
|      |     | B1 | S  |     |     | DCN | S   |  |
|      | D3  | T  | B1 |     | D6  | T   | DCN |  |
|      |     | B1 | T  |     |     | DCN | T   |  |
| IGBT | Tr1 | U  | B1 | Tr4 | U   | DCN |     |  |
|      |     | B1 | U  |     | DCN | U   |     |  |
|      | Tr3 | V  | B1 | Tr6 | V   | DCN |     |  |
|      |     | B1 | V  |     | DCN | V   |     |  |
|      | Tr5 | W  | B1 | Tr2 | W   | DCN |     |  |
|      |     | B1 | W  |     | DCN | W   |     |  |

7)

가

●

:

1~3 5  
2~3

●

:

가

가

5

1 )

1 (

:

:

:

85% 가

●

:

6

|  | 2 ~ 3 |  |
|--|-------|--|
|  | 5     |  |
|  | -     |  |

7

## 7.1

## 7.1.1

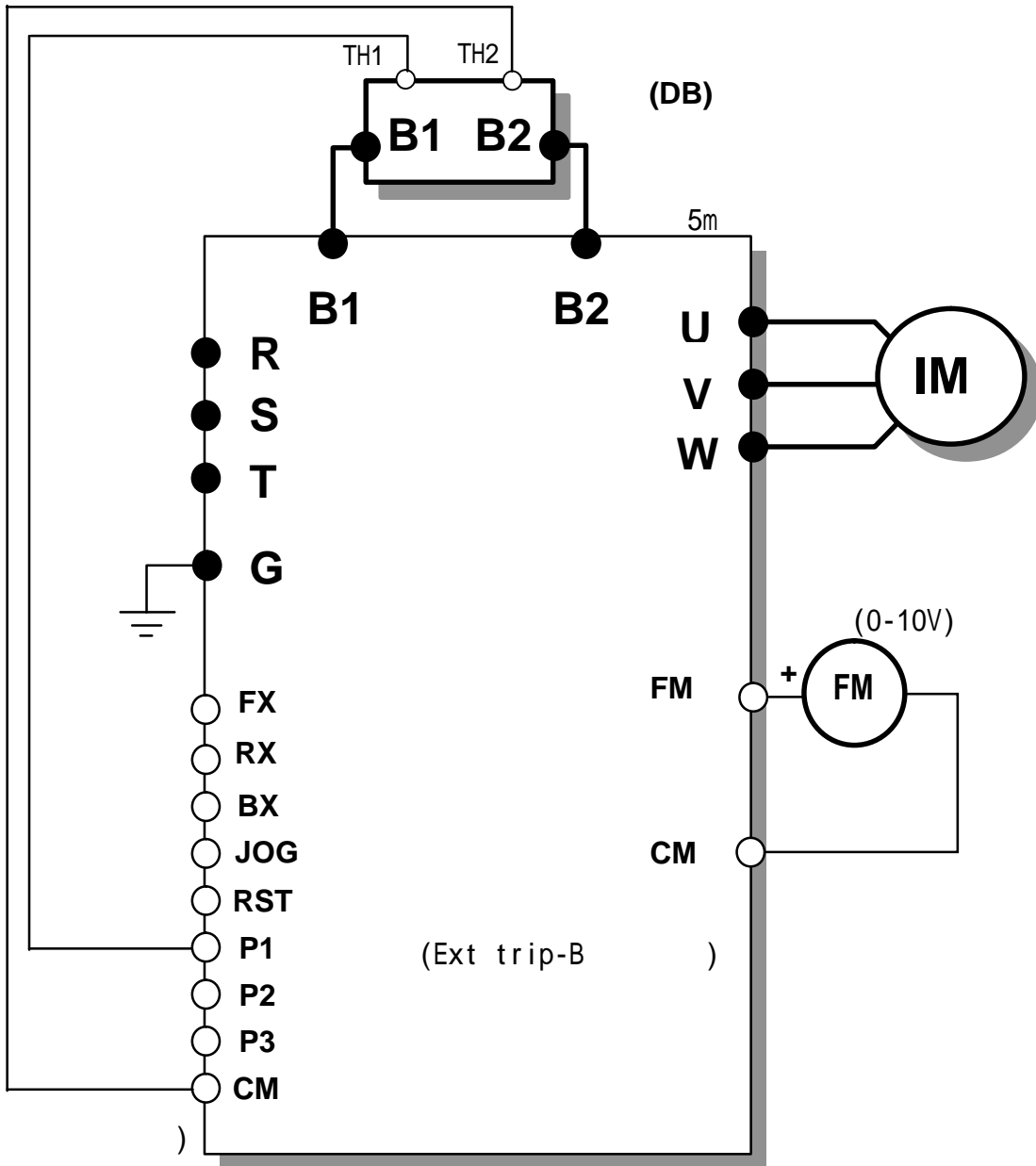
[200V]

| [kW] |     | SV008IG5-2/2NC/1 |      | SV015IG5-2/1 |      | SV022IG5-2 |      | SV037IG5-2 |      |
|------|-----|------------------|------|--------------|------|------------|------|------------|------|
|      |     | 100%             | 150% | 100%         | 150% | 100%       | 150% | 100%       | 150% |
|      | %ED | 5%               | 5%   | 5%           | 5%   | 5%         | 5%   | 5%         | 5%   |
|      |     | 5                | 5    | 5            | 5    | 5          | 5    | 5          | 5    |
|      | [Ω] | 200              | 150  | 100          | 60   | 60         | 50   | 40         | 33   |
|      | [W] | 100              | 150  | 200          | 300  | 300        | 400  | 500        | 600  |

[400V]

| [kW] |     | SV008IG5-4 |      | SV015IG5-4 |      | SV022IG5-4 |      | SV037IG5-4 |      |
|------|-----|------------|------|------------|------|------------|------|------------|------|
|      |     | 100%       | 150% | 100%       | 150% | 100%       | 150% | 100%       | 150% |
|      | %ED | 5%         | 5%   | 5%         | 5%   | 5%         | 5%   | 5%         | 5%   |
|      |     | 5          | 5    | 5          | 5    | 5          | 5    | 5          | 5    |
|      | [Ω] | 900        | 600  | 450        | 300  | 300        | 200  | 200        | 130  |
|      | [W] | 100        | 150  | 200        | 300  | 300        | 400  | 500        | 600  |

[ (DB) ]  
 - 가 .

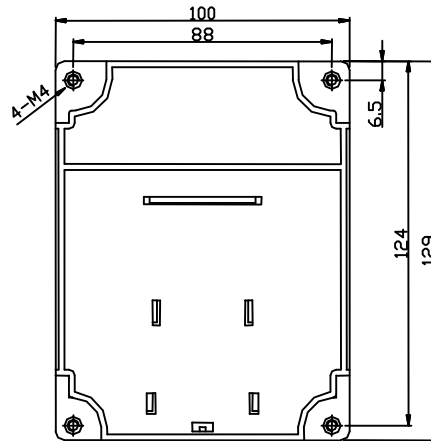


|          |   |
|----------|---|
|          |   |
| B1, B2   | (DB) B1, B2 .                                       |
| TH1, TH2 | ON (TH1-TH2 ) ,<br>OFF (TH1-TH2 ) .<br>Ext trip - B |

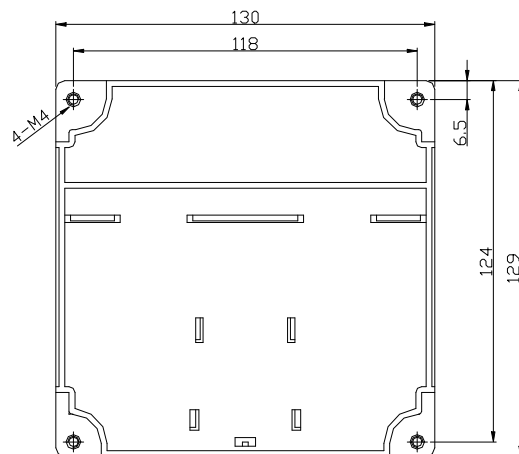


## 7.2 DIN

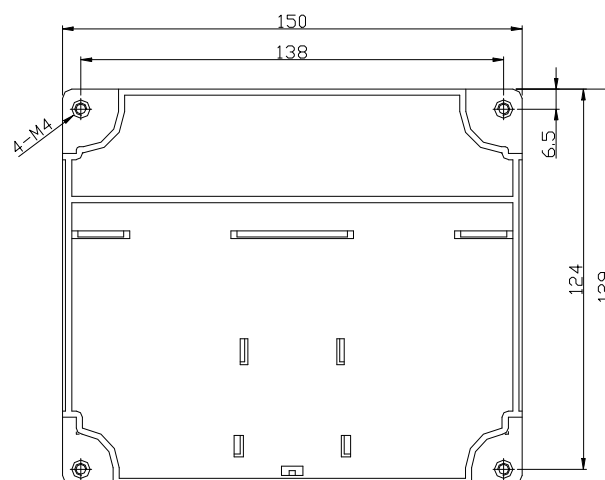
## (1). SV008iG5-2



(2). SV008iG5-1  
 SV008iG5-2NC  
 SV015iG5-2  
 SV008iG5-4  
 SV015iG5-4

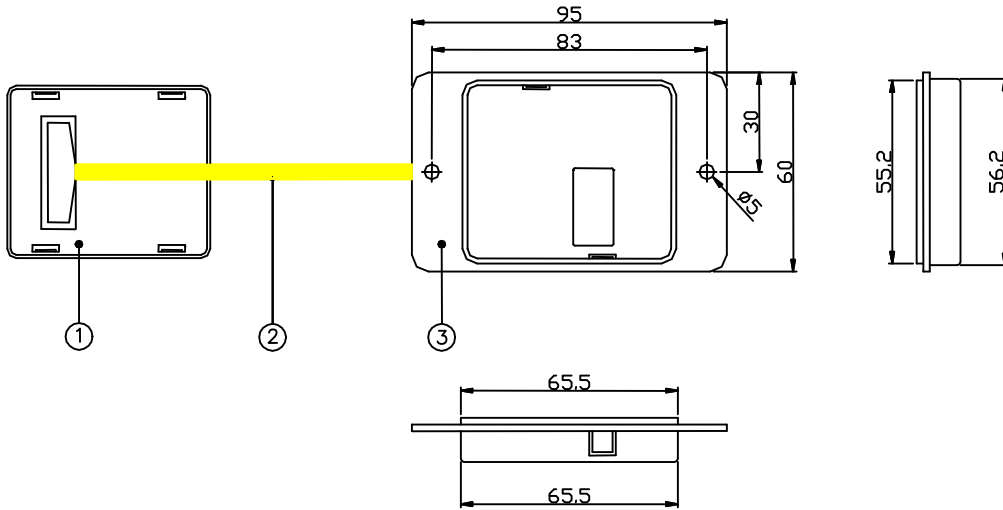


(3). SV015iG5-1  
 SV022iG5-2  
 SV037iG5-2  
 SV022iG5-4  
 SV037iG5-4



7.3

( )



|  |            |
|--|------------|
|  |            |
|  |            |
|  | (2, 3, 5m) |
|  |            |

( ) ( + + 가 .)

|                       |        |
|-----------------------|--------|
|                       |        |
| INV,REMOTE 2M(SV-IG5) | ( 2m ) |
| INV,REMOTE 3M(SV-IG5) | ( 3m ) |
| INV,REMOTE 5M(SV-IG5) | ( 5m ) |

)

7.4 NEMA

|                        |  |
|------------------------|--|
|                        |  |
| INVERTER NEMA OPTION 1 | SV008iG5-2                                   |
| INVERTER NEMA OPTION 2 | SV008iG5-1 SV008/015iG5-2NC/2 SV008/015iG5-4 |
| INVERTER NEMA OPTION 3 | SV015IG5-1 SV022/037iG5-2 SV022/037iG5-4     |

**1**

|      | [kW] |            | (LS)          |         | (mm <sup>2</sup> ) |         |      |
|------|------|------------|---------------|---------|--------------------|---------|------|
|      |      |            |               |         | R, S, T            | U, V, W | G( ) |
| 200V | 0.75 | SV008iG5-2 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 3.5  |
|      | 1.5  | SV015iG5-2 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 3.5  |
|      | 2.2  | SV022iG5-2 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 3.5  |
|      | 3.7  | SV037iG5-2 | ABS33b, EBS33 | GMC-18P | 3.5                | 3.5     | 3.5  |
| 400V | 0.75 | SV008iG5-4 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 2    |
|      | 1.5  | SV015iG5-4 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 2    |
|      | 2.2  | SV022iG5-4 | ABS33b, EBS33 | GMC-9P  | 2                  | 2       | 2    |
|      | 3.7  | SV037iG5-4 | ABS33b, EBS33 | GMC-12P | 2                  | 2       | 2    |

|      |      |            | AC  | AC            |
|------|------|------------|-----|---------------|
| 200V | 0.75 | SV008iG5-2 | 10A | 2.13mH, 5.7 A |
|      | 1.5  | SV015iG5-2 | 15A | 1.20mH, 10 A  |
|      | 2.2  | SV022iG5-2 | 25A | 0.88mH, 14 A  |
|      | 3.7  | SV037iG5-2 | 40A | 0.56mH, 20 A  |
| 400V | 0.75 | SV008iG5-4 | 6A  | 8.63mH, 2.8 A |
|      | 1.5  | SV015iG5-4 | 10A | 4.81mH, 4.8 A |
|      | 2.2  | SV022iG5-4 | 15A | 3.23mH, 7.5 A |
|      | 3.7  | SV037iG5-4 | 20A | 1.14mH, 10 A  |

2.

|      |   |
|------|---|
|      |   |
| 가,   | DRV-ACC[가 ], DRV-dEC[ ],<br>FU1-5[가 ], FU1-6[ ]               |
|      | FU1-3[ , ]  |
| 가,   | FU1-5[가 ], FU1-6[ ]   |
| 가,   | FU1-5[가 ], FU1-6[ ]   |
|      | FU1-7[ ], FU1-8 ~ 1[ ],<br>FU1-12 ~ 13[ ]                     |
| 60Hz | FU1-20[ ],<br>FU1-25[ ],<br>I/O-5[V1 ],<br>I/O-10[I ]         |
|      | FU1-20[ ],<br>FU1-21[ ]                                       |
|      | FU1-22[ ],<br>FU1-26 ~ 28[ ],<br>FU1-59 ~ 60[ ],<br>FU2-30[ ] |
|      | FU1-23 ~ 25[ ],<br>I/O-1 ~ 10[ ]                              |
|      | FU1-50 ~ 53[ ], FU2-30[ ]                                     |
|      | I/O-12 ~ 14[ ],<br>I/O-20 ~ 27[ , ],<br>FU1-23 ~ 25[ ]        |
|      | I/O-20[ ]   |
|      | FU2-10 ~ 16[ ]  |
|      | I/O-42 ~ 43[ ],<br>I/O-44[ ]                                  |
|      | DRV-rPM[ ],<br>FU2-74[ ]                                      |
|      | FU2-94[ ]   |
|      | FU1-39[ ]   |
|      | FU2-27 ~ 28[ ]  |
| 2    | FU2-81 ~ 90[ 2 ]  |
| PID  | FU2-50 ~ 54[PID ]   |
|      | I/O-1 ~ 10[ ]   |
|      | I/O-12 ~ 14[ ]  |
|      | I/O-44[ ]   |
| <->  | I/O-12 ~ 14[ ],<br>I/O-44[ ]                                  |
|      | I/O-40 ~ 41[FM ]  |
|      | I/O-46[ ],<br>I/O-47[ ],<br>I/O-48 ~ 49[ ]                    |

### 3. DECLARATION OF CONFORMITY

Council Directive(s) to which conformity is declared:

**CD 73/23/EEC and CD 89/336/EEC**

Units are certified for compliance with:

**EN50178 (1997)  
EN 50081-1 (1992)  
EN 55022 (1994)  
EN 50082-2 (1995)  
EN 61000-4-2 (1995)  
ENV 50140 (1993) & ENV 50204 (1995)  
EN 61000-4-4 (1995)  
EN 61000-4-5 (1995)  
ENV 50141 (1993)  
EN 61000-4-8 (1993)  
EN 61000-4-11 (1994)**

Type of Equipment: **Inverter (Power Conversion Equipment)**  
Model Name: **SV - iG5 Series**  
Trade Mark: **LG Industrial Systems Co., Ltd.**  
Representative: **LG International (Deutschland) GmbH**  
Address: **Lyoner Strasse 15,  
60528, Frankfurt am Main,  
Germany**

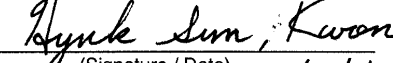
Manufacturer: **LG Industrial Systems Co., Ltd.**  
Address: **181, Samsung-Ri, Mokchon-Myon, Chonan-Si,  
330-845, Chungnam,  
Korea**

**We, the undersigned, hereby declare that equipment specified above conforms to the Directives and Standards mentioned.**

Place: **Frankfurt am Main  
Germany**

**Chonan, Chungnam,  
Korea**

 20/02/01  
(Signature / Date)

 02/04/01  
(Signature / Date)

**Mr. Ik-Seong Yang / Dept. Manager**  
(Full name / Position)

**Mr. Hyuk-Sun Kwon / Gneral Manager**  
(Full name / Position)

## TECHNICAL STANDARDS APPLIED

The standards applied in order to comply with the essential requirements of the Directives 73/23/CEE "Electrical material intended to be used with certain limits of voltage" and 89/336/CEE "Electromagnetic Compatibility" are the following ones:

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- **EN 50178 (1997)** "Safety of information technology equipment".
  - **EN 50081-1 (1992)** "Electromagnetic compatibility. Generic emission standard. Part 1: Residential, commercial and light industry."
  - **EN 55022 (1994)** "Limits and methods of measurements of radio interference characteristics of information technology equipment."
  - **EN 50082-1 (1997)** "Electromagnetic compatibility. Generic immunity standard. Part 1: Residential, commercial and light industry."
  - **EN 61000-4-2 (1995)** "Electromagnetic compatibility (EMC). Part 4: Testing and measurement techniques. Section 2: Electrostatic discharge immunity test. Basic EMC Publication (IEC 1000-4-2: 1995)."
  - **ENV 50140 (1993)** "Electromagnetic compatibility - Basic immunity standard - Radiated radio- frequency electro magnetic field - Immunity test."
  - **ENV 50204 (1995)** "Radio electromagnetic field from digital radio telephones."
  - **EN 61000-4-4: 1995** "Electromagnetic compatibility (EMC). Part 4: Testing and measurement techniques. Section 4: Electrical fast transients / burst immunity test. Basic EMC Publication (IEC 1000-4-4: 1995)."
  - **EN 61000-4-5: 1995** "Electromagnetic compatibility (EMC). Part 4: Testing and measurement techniques. Section 5: Surge immunity test. Basic EMC Publication (IEC 1000-4-5: 1995)."
  - **ENV 50141 (1993)** "Electromagnetic compatibility. Basic immunity standard. Conducted disturbances induced by radio-frequency fields."
  - **EN 61000-4-8: 1993** "Electromagnetic compatibility (EMC). Part 4: Testing and measurement techniques. Section 8: Power frequency magnetic field immunity test - Basic EMC Publication (IEC 1000-4-8: 1993)."
  - **EN 61000-4-11: 1994** "Electromagnetic compatibility (EMC). Part 4: Testing and measurement techniques. Section 11: Voltage dips, short interruptions and voltage variations immunity tests (IEC 1000-4-11: 1994)."
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## 1. Short Circuit Rating

“Suitable For Use On A Circuit Capable Of Delivering Not More Than 5,000 RMS Symmetrical Amperes, 240 for rated 240V drives or 480 for rated 480V drives Volts Maximum,” or equivalent.

## 2. Short Circuit FUSE/BREAKER Marking

Use Class H or K5 UL Listed Input Fuse and UL Listed Breaker Only. See the table below for the Voltage and Current rating of the fuse and the breaker.

| Input Voltage | Motor [kW] | Inverter   | External Fuse |             | Breaker     |             |
|---------------|------------|------------|---------------|-------------|-------------|-------------|
|               |            |            | Current [A]   | Voltage [V] | Current [A] | Voltage [V] |
| 200V          | 0.75       | SV008iG5-2 | 10            | 500         | 30          | 220         |
|               | 1.5        | SV015iG5-2 | 15            | 500         | 30          | 220         |
|               | 2.2        | SV022iG5-2 | 25            | 500         | 30          | 220         |
|               | 3.7        | SV037iG5-2 | 40            | 500         | 30          | 220         |
| 400V          | 0.75       | SV008iG5-4 | 6             | 500         | 30          | 460         |
|               | 1.5        | SV015iG5-4 | 10            | 500         | 30          | 460         |
|               | 2.2        | SV022iG5-4 | 15            | 500         | 30          | 460         |
|               | 3.7        | SV037iG5-4 | 20            | 500         | 30          | 460         |

## 3. Wires and Terminal Lugs

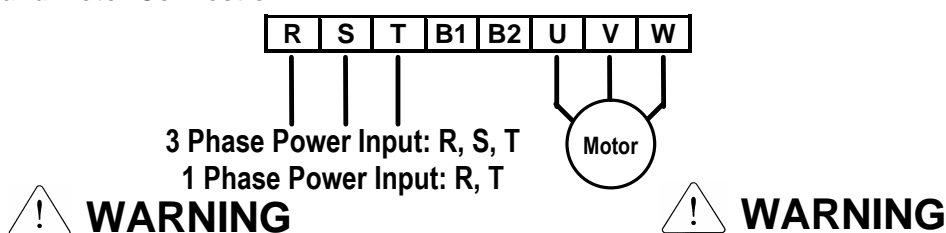
| Inverter  |               | Terminal Screw Size | Screw Torque (lb-in) <sup>(1)</sup> | Wire <sup>(2)</sup> |       |       |       |
|-----------|---------------|---------------------|-------------------------------------|---------------------|-------|-------|-------|
|           |               |                     |                                     | mm <sup>2</sup>     |       | AWG   |       |
|           |               |                     |                                     | R,S,T               | U,V,W | R,S,T | U,V,W |
| 200V (1Φ) | 0.75 ~ 1.5 kW | M4                  | 10                                  | 2                   | 2     | 14    | 14    |
| 200V (3Φ) | 0.75 kW       | M3.5                | 7                                   | 2                   | 2     | 14    | 14    |
|           | 1.5 ~ 2.2 kW  | M4                  | 10                                  | 2                   | 2     | 14    | 14    |
|           | 3.7 kW        | M4                  | 10                                  | 3.5                 | 3.5   | 12    | 12    |
| 400V (3Φ) | 0.75 ~ 3.7 kW | M4                  | 10                                  | 2                   | 2     | 14    | 14    |

(1) Apply the rated torque to terminal screws. Loosen screws can cause of short circuit and malfunction.

Tightening the screws too much can damage the terminals and cause short circuit and malfunction.

(2) Use copper wires only with 600V, 75 ratings for wiring.

### Power and Motor Connection



Power supply must be connected to the R, S, and T Terminals. **Connecting it to the U, V, W terminals causes internal damages to the inverter. Arranging the phase sequence is not necessary.**

**Motor should be connected to the U, V, and W Terminals.** If the forward command (FX) is on, the motor should rotate counter clockwise when viewed from the load side of the motor. If the motor rotates in the reverse, switch the U and V terminals.

## 4. Overload Protection

IOLT : IOLT(inverter Overload Trip) protection is activated at 150% of the inverter rated current for 1 minute and greater.

OLT : OLT is selected when F56 is set to 1 and activated at 200% of F57[Motor rated current] for 60 min in F58. This can be programmable.

**6. “Not Provided With Overspeed Protection” or equivalent.**

**7. WARNING**

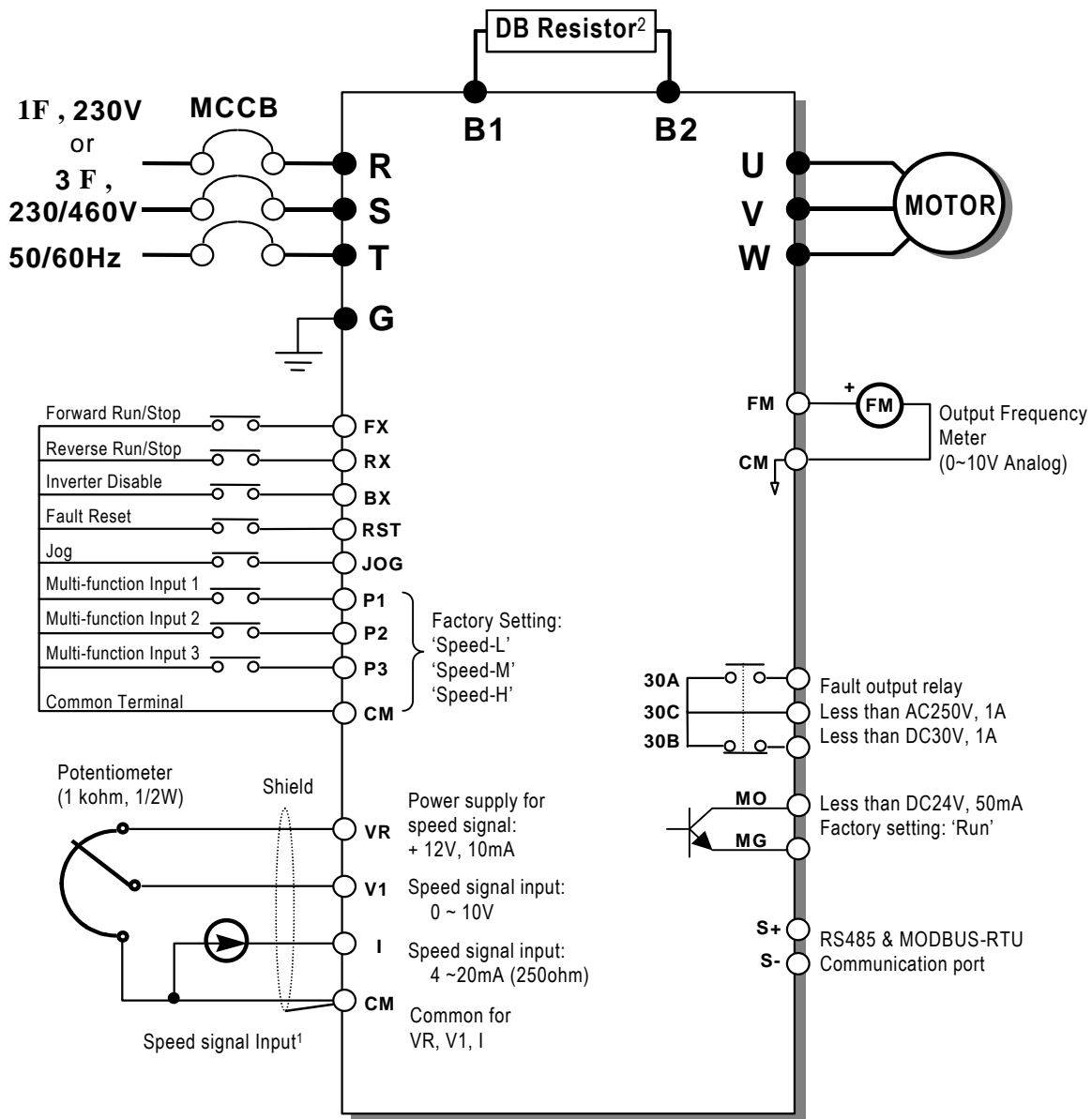
**Risk of injury or Electric shock :** Read the manual and follow the safety instruction before use.

**Risk of Electric Shock :** More than one disconnect switch may be required to de-energize the equipment before servicing.

**Risk of Electric shock :** Before opening the cover, disconnect all power and wait at least 10 minutes.

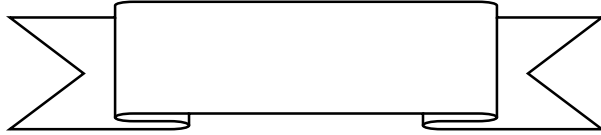
**Risk of Electric shock :** Securely ground(earth) the inverter.

**8. Basic Wiring**



- Note) ● display main circuit terminals (Class1),  
○ display control circuit terminals (Class2).
1. Analog speed command can be set by Voltage, Current and both of them.
  2. DB resistor is optional.
  3. Be sure to use insulated conductors for wiring Power terminals and Control terminals and always maintain the distance between power and control wiring greater than 12.7mm.





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|---|----------|---|-------------|--|
| 1 | 2000.06. |   | 1.00        |  |
| 2 | 2000.08. |   | 1.01        |  |
| 3 | 2001.01. |   | 1.02        |  |
| 4 | 2001.08. | 200V 2 (0.75,1.5kW) 가<br>CE DOC (Filter)<br>PNP/NPN<br>FM (0 ~ 10V)<br><br>(SV008IG-2F -> SV008IG5-2)<br>(SV008IG-2 -> SV008IG5-2NC)<br>IO 1,6<br>(1000mS -> 100mS)<br>IO 17<br>(15 -> 2) | 5.10        |  |
| 5 | 2002.03  | IO 12 ( 7 -> 0 )<br>V1-Ext 가 (9)<br>(150.9 -> 152.9 )   | 5.30        |  |
| 6 | 2002.11  | 가<br>가  | 5.40        |  |
| 7 | 2005.06  | CI 가 가  | 5.50        |  |

