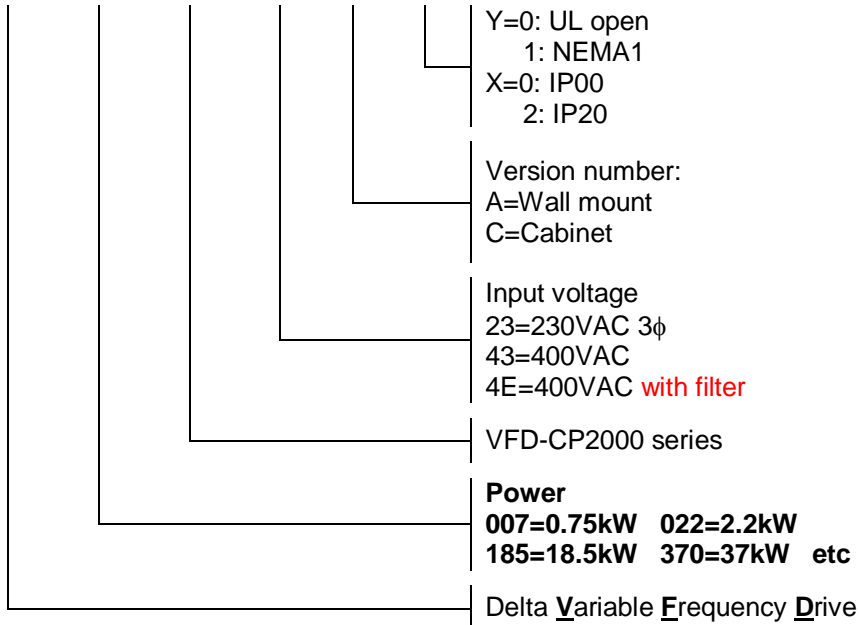
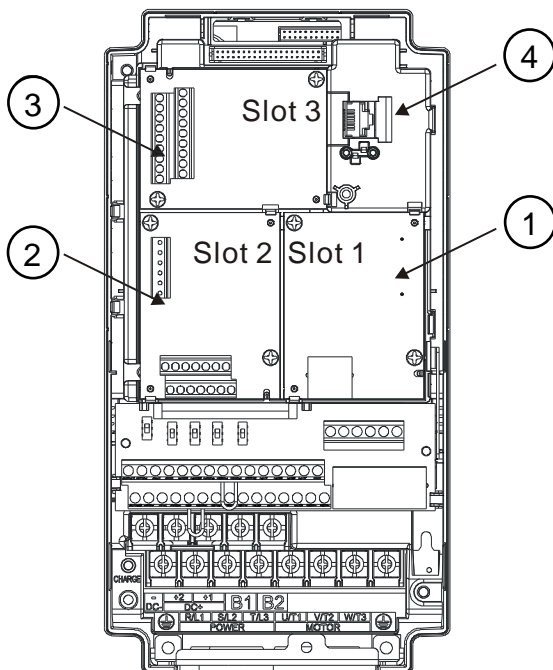


## Type number key

VFD 007 CP 43 **A**  
**C** -XY



## Option cards



### Slot 1: Communication cards

CMC-MOD01 Modbus TCP/IP  
CMC-PD01 Profibus  
CMC-DN01 DeviceNet  
EMC-COP01 CANopen  
CMC-EIP01 Ethernet IP

### Slot 2: No function

### Slot 3: I/O & Relay cards

EMC-D42A 4MI, 2MO  
EMC-R6AA 6 Relays (NO/NC)  
EMC-D611A 6MI, 2MO

### 4: RJ45(female) for digital keypad

KPC-CC01 Standard LCD  
KPC-CE01 Option LED

**400V 0.75 ~ 7.5kW with built-in filter**

| Type number                        | VFD□□□□□□□□-21     | 007CP4EA                     | 015CP4EA | 022CP4EA | 037CP4EA | 040CP4EA | 055CP4EA | 075CP4EA |
|------------------------------------|--------------------|------------------------------|----------|----------|----------|----------|----------|----------|
| Rated power                        | kW                 | 0.75                         | 1.5      | 2.2      | 3.7      | 4.0      | 5.5      | 7.5      |
| Rated output current (ND/LD)       | A RMS              | 2.8/3                        | 3/3.7    | 4/5      | 6/7.5    | 9/10.5   | 10.5/12  | 12/14    |
| Overload (ND/LD)                   | %                  | 120% 60s; 160% 3s / 120% 60s |          |          |          |          |          |          |
| Rated output capacity (ND/LD)      | kVA                | 2.3/2.4                      | 2.4/2.9  | 3.2/4    | 4.8/6    | 7.2/8.4  | 8.4/9.6  | 10/11.2  |
| Rated input current (ND/LD)        | A RMS              | 3.5/4.3                      | 4.3/5.4  | 5.9/7.4  | 8.7/11   | 14/16    | 15.5/18  | 17/20    |
| Mains fuse (for UL: Bussmann)      |                    | JJS-10                       |          | JJS-15   | JJS-20   |          | JJS-30   | JJS-40   |
| Non-fuse current breaker           | A                  | 5                            | 10       | 15       | 20       |          | 30       | 40       |
| Dimensions HxWxD                   | mm                 | 250x130x170                  |          |          |          |          |          |          |
| Frame *                            |                    | A1                           |          |          |          |          |          |          |
| Weight                             | kg                 | 2.6 ±0.3                     |          |          |          |          |          |          |
| Power cable entry                  | Ømm                | 2x 28<br>1x 34               |          |          |          |          |          |          |
| Signal cable entry                 | Ømm                | 2x 22.2                      |          |          |          |          |          |          |
| Section of power cables (stranded) | mm <sup>2</sup>    | 2.1~8.4                      |          |          | 3.3~8.4  |          | 5.3~8.4  |          |
| Cooling                            |                    | Convection                   |          |          | Fan      |          |          |          |
| Cooling air flow rate              | m <sup>3</sup> /hr | none                         |          |          | 24       | 17       |          |          |
| Carrier frequency                  | kHz                | 2~15                         |          |          |          |          |          |          |
| EMC-Filter                         |                    | Built-in                     |          |          |          |          |          |          |
| DC-Choke                           |                    | Option **                    |          |          |          |          |          |          |
| DC-Bus connection                  |                    | Yes                          |          |          |          |          |          |          |
| Brake chopper                      |                    | Built-in                     |          |          |          |          |          |          |
| Recommended brake resistor         | Ω/W                | 750/80                       | 360/200  | 250/300  | 150/400  | 75/1000  |          |          |
| Minimum brake resistor value       | Ω                  | 190                          | 126.7    | 108.6    | 84.4     | 54.3     |          |          |

**400V 11 ~ 18.5kW with built-in filter**

| Type number                        | VFD□□□□□□□□-21     | 110CP4EA                     | 150CP4EA | 185CP4EA  |
|------------------------------------|--------------------|------------------------------|----------|-----------|
| Rated power                        | kW                 | 11                           | 15       | 18.5      |
| Rated output current (ND/LD)       | A RMS              | 18/22.5                      | 24/30    | 32/36     |
| Overload (ND/LD)                   | %                  | 120% 60s; 160% 3s / 120% 60s |          |           |
| Rated output capacity (ND/LD)      | kVA                | 14/18                        | 19/24    | 25/29     |
| Rated input current (ND/LD)        | A RMS              | 20/25                        | 26/33    | 35/39     |
| Mains fuse (for UL: Bussmann)      |                    | JJS-50                       | JJS-60   | JJS-75    |
| Non-fuse current breaker           | A                  | 50                           | 60       | 75        |
| Dimensions HxWxD                   | mm                 | 320x190x190                  |          |           |
| Frame *                            |                    | B                            |          |           |
| Weight                             | kg                 | 5.4 ±1                       |          |           |
| Power cable entry                  | Ømm                | 1x 34<br>2x 43.8             |          |           |
| Signal cable entry                 | Ømm                | 3x 22.2                      |          |           |
| Section of power cables (stranded) | mm <sup>2</sup>    | 8.4~21.2                     |          | 13.3~21.2 |
| Cooling                            |                    | Fan                          |          |           |
| Cooling air flow rate              | m <sup>3</sup> /hr | 92                           | 136      | 124       |
| Carrier frequency                  | kHz                | 2~15                         |          |           |
| EMC-Filter                         |                    | Built-in                     |          |           |
| DC-Choke                           |                    | Option **                    |          |           |
| DC-Bus connection                  |                    | Yes                          |          |           |
| Brake chopper                      |                    | Built-in                     |          |           |
| Recommended brake resistor         | Ω/W                | 75/1000                      | 43/1500  | 32/2000   |
| Minimum brake resistor value       | Ω                  | 47.5                         | 42.2     | 23        |

\* See dimensional drawing on Page 10~13.

\*\* Connection for external DC-Choke.

**400V 22 ~ 37kW with built-in filter**

| Type number                        | VFD□□□□□□□□-21     | 220CP4EA                    | 300CP4EA  | 370CP4EA  |
|------------------------------------|--------------------|-----------------------------|-----------|-----------|
| Rated power                        | kW                 | 22                          | 30        | 37        |
| Rated output current (ND/LD)       | A RMS              | 38/45                       | 45/56     | 60/72     |
| Overload (ND/LD)                   | %                  | 120% 60s;160% 3s / 120% 60s |           |           |
| Rated output capacity (ND/LD)      | kVA                | 30/36                       | 36/45     | 48/57     |
| Rated input current (ND/LD)        | A RMS              | 40/47                       | 47/58     | 63/76     |
| Mains fuse (for UL: Bussmann)      |                    | JJS-100                     | JJS-125   | JJS-150   |
| Non-fuse current breaker           | A                  | 100                         | 125       | 150       |
| Dimensions HxWxD                   | mm                 | 400x250x210                 |           |           |
| Frame *                            |                    | C                           |           |           |
| Weight                             | kg                 | 9.8 ±1.5                    |           |           |
| Power cable entry                  | ∅mm                | 1x 34<br>2x 50              |           |           |
| Signal cable entry                 | ∅mm                | 4x 22.2                     |           |           |
| Section of power cables (stranded) | mm <sup>2</sup>    | 21.2~53.5                   | 26.7~53.5 | 33.6~53.5 |
| Cooling                            |                    | Fan                         |           |           |
| Cooling air flow rate              | m <sup>3</sup> /hr | 204                         |           | 250       |
| Carrier frequency                  | kHz                | 2~10                        |           |           |
| EMC-Filter                         |                    | Built-in                    |           |           |
| DC-Choke                           |                    | Option **                   |           |           |
| DC-Bus connection                  |                    | Yes                         |           |           |
| Brake chopper                      |                    | Built-in                    |           |           |
| Recommended brake resistor         | Ω/W                | 32/2000                     | 26/3000   | 16/4000   |
| Minimum brake resistor value       | Ω                  | 23                          |           | 14.1      |

**400V 45 ~ 90kW with conduit box**

| Type number                                   | VFD□□□□□□□□-21     | 450CP43A                    | 550CP43A | 750CP43A  | 900CP43A |
|---|--------------------|-----------------------------|----------|-----------|----------|
| Rated power                                   | kW                 | 450                         | 550      | 750       | 900      |
| Rated output current (ND/LD)                  | A RMS              | 73/91                       | 91/110   | 110/144   | 150/180  |
| Overload (ND/LD)                              | %                  | 120% 60s;160% 3s / 120% 60s |          |           |          |
| Rated output capacity (ND/LD)                 | kVA                | 58/73                       | 73/88    | 88/115    | 120/143  |
| Rated input current (ND/LD)                   | A RMS              | 74/91                       | 101/110  | 114/144   | 157/180  |
| Mains fuse (for UL: Bussmann)                 |                    | JJS-175                     | JJS-250  | JJS-300   |          |
| Non-fuse current breaker                      | A                  | 175                         | 250      | 300       |          |
| Dimensions HxWxD                              | mm                 | 688.3x330x275               |          |           |          |
| Frame *                                       |                    | D2                          |          |           |          |
| Weight  | kg                 | 40                          |          |           |          |
| Power cable entry                             | ∅mm                | 2x 76.2<br>2x 34            |          |           |          |
| Signal cable entry                            | ∅mm                | 2x 22                       |          |           |          |
| Section of power cables, stranded (with ring) | mm <sup>2</sup>    | 53.5~107                    | 67.4~107 | 85~107    | 107      |
| Cooling                                       |                    | Fan                         |          |           |          |
| Cooling air flow rate                         | m <sup>3</sup> /hr | 355                         |          |           | 367      |
| Carrier frequency                             | kHz                | 2~10                        |          |           | 2~9      |
| EMC-Filter                                    |                    | No                          |          |           |          |
| DC-Choke                                      |                    | Built-in                    |          |           |          |
| DC-Bus connection                             |                    | Yes                         |          |           |          |
| Brake chopper                                 |                    | External option             |          |           |          |
| Recommended brake resistor ***                | Ω/W                | 15/4800                     | 13/6000  | 10.2/8000 | 7.5/9600 |
| Minimum brake resistor value ***              | Ω                  | 12.7                        |          | 9.5       | 6.3      |

\* See dimensional drawing on Page 10~13.

\*\* Connection for external DC-Choke.

**400V 110 ~ 185kW with conduit box**

| Type number                                   | VFD□□□□□□□□-21     | 1100CP43A                   | 1320CP43A | 1600CP43A      | 1850CP43A |
|---|--------------------|-----------------------------|-----------|----------------|-----------|
| Rated power                                   | kW                 | 110                         | 132       | 160            | 185       |
| Rated output current (ND/LD)                  | A RMS              | 180/220                     | 220/246   | 260/310        | 310/343   |
| Overload (ND/LD)                              | %                  | 120% 60s;160% 3s / 120% 60s |           |                |           |
| Rated output capacity (ND/LD)                 | kVA                | 143/175                     | 175/196   | 207/247        | 247/343   |
| Rated input current (ND/LD)                   | A RMS              | 167/220                     | 207/246   | 240/310        | 300/343   |
| Mains fuse (for UL: Bussmann)                 |                    | JJS-400                     | JJS-500   | JJS-600        |           |
| Non-fuse current breaker                      | A                  | 400                         | 500       | 600            |           |
| Dimensions HxWxD                              | mm                 | 715.8x370x300               |           | 940x420x300    |           |
| Frame *                                       |                    | E2                          |           | F2             |           |
| Weight  | kg                 | 66                          |           | 88             |           |
| Power cable entry                             | ∅mm                | 2x 92<br>4x 34              |           | 2x 92<br>4x 35 |           |
| Signal cable entry                            | ∅mm                | 2x 22                       |           | 2x 22          |           |
| Section of power cables, stranded (with ring) | mm <sup>2</sup>    | 67.4~107 (2x)               |           | 107 (2x)       |           |
| Cooling                                       |                    | Fan                         |           |                |           |
| Cooling air flow rate                         | m <sup>3</sup> /hr | 561                         | 503       | 571            | 681       |
| Carrier frequency (ND/LD)                     | kHz                | 2~9                         |           |                |           |
| EMC-Filter                                    |                    | No                          |           |                |           |
| DC-Choke                                      |                    | Built-in                    |           |                |           |
| DC-Bus connection                             |                    | Yes                         |           |                |           |
| Brake chopper                                 |                    | External option             |           |                |           |
| Recommended brake resistor ***                | Ω/W                | 6.5/12000                   | 6/12000   | 4/18000        |           |
| Minimum brake resistor value ***              | Ω                  | 6.5                         | 6         | 4              |           |

\* See dimensional drawing on Page 10~13.

\*\*\* With external brake unit.

**400V 220 ~ 280kW with conduit box / 315 ~ 400kW cabinet**

| Type number                                   | VFD□□□□□□□□-21                     | 2200CP43A                     | 2800CP43A               | 3150CP43C         | 3550CP43C    | 4000CP43C |
|---|------------------------------------|-------------------------------|-------------------------|-------------------|--------------|-----------|
| Rated power                                   | kW                                 | 220                           | 280                     | 315               | 355          | 400       |
| Rated output current (ND/LD)                  | A RMS                              | 370/460                       | 460/530                 | 550/616           | 616/683      | 683/770   |
| Overload (ND/LD)                              | %                                  | 120% 60s;160% 3s / 120% 60s   |                         |                   |              |           |
| Rated output capacity (ND/LD)                 | kVA                                | 295/367                       | 367/422                 | 438/491           | 491/544      | 544/613   |
| Rated input current (ND/LD)                   | A RMS                              | 380/460                       | 400/530                 | 494/616           | 555/683      | 625/770   |
| Mains fuse (for UL: Bussmann)                 |                                    | JJS-800                       | KTU-1000                | KTU-1200          | KTU-1350     | KTU1500   |
| Non-fuse current breaker                      | A                                  | 800                           | 1000                    | 1200              | 1350         | 1500      |
| Dimensions HxWxD                              | mm                                 | 1240.2x500x397                |                         | 1745x700x404      |              |           |
| Frame *                                       |                                    | G2                            |                         | H3                |              |           |
| Weight  | kg                                 | 138                           |                         | 263               |              |           |
| Power cable entry                             | ∅mm                                | 2x 34<br>3x 117.5             |                         | 2x 34<br>4x 117.5 |              |           |
| Signal cable entry                            | ∅mm                                | 2x 22                         |                         | 4x 22             |              |           |
| Section of power cables, stranded (with ring) | Input<br>Output<br>mm <sup>2</sup> | 67.4~152 (4x)<br>203~253 (2x) | 85~152 (4x)<br>253 (2x) | 107~152 (4x)      | 127~152 (4x) | 152 (4x)  |
| Cooling                                       |                                    | Fan                           |                         |                   |              |           |
| Cooling air flow rate                         | m <sup>3</sup> /hr                 | 771                           |                         | 1307              |              |           |
| Carrier frequency (ND/LD)                     | kHz                                | 2~9                           |                         |                   |              |           |
| EMC-Filter                                    |                                    | No                            |                         |                   |              |           |
| DC-Choke                                      |                                    | Built-in                      |                         |                   |              |           |
| DC-Bus connection                             |                                    | Yes                           |                         |                   |              |           |
| Brake chopper                                 |                                    | External option               |                         |                   |              |           |
| Recommended brake resistor ***                | Ω/W                                | 3.4/21000                     | 3/24000                 | 2/36000           |              | 1.7/42000 |
| Minimum brake resistor value ***              | Ω                                  | 3.4                           | 3                       | 2                 |              | 1.7       |

\* See dimensional drawing on Page 10~13.

\*\*\* With external brake unit.

**400V 0.75 ~ 7.5kW no filter**

| Type number                        | VFD□□□□□□□□-21     | 007CP43A                     | 015CP43A | 022CP43A | 037CP43A | 040CP43A | 055CP43A | 075CP43A |
|------------------------------------|--------------------|------------------------------|----------|----------|----------|----------|----------|----------|
| Rated power                        | kW                 | 0.75                         | 1.5      | 2.2      | 3.7      | 4.0      | 5.5      | 7.5      |
| Rated output current (ND/LD)       | A RMS              | 2.8/3                        | 3/3.7    | 4/5      | 6/7.5    | 9/10.5   | 10.5/12  | 12/14    |
| Overload (ND/LD)                   | %                  | 120% 60s; 160% 3s / 120% 60s |          |          |          |          |          |          |
| Rated output capacity (ND/LD)      | kVA                | 2.3/2.4                      | 2.4/2.9  | 3.2/4    | 4.8/6    | 7.2/8.4  | 8.4/9.6  | 10/11.2  |
| Rated input current (ND/LD)        | A RMS              | 3.5/4.3                      | 4.3/5.4  | 5.9/7.4  | 8.7/11   | 14/16    | 15.5/18  | 17/20    |
| Mains fuse (for UL: Bussmann)      |                    | JJS-10                       |          | JJS-15   | JJS-20   |          | JJS-30   | JJS-40   |
| Non-fuse current breaker           | A                  | 5                            | 10       | 15       | 20       |          | 30       | 40       |
| Dimensions HxWxD                   | mm                 | 250x130x170                  |          |          |          |          |          |          |
| Frame *                            |                    | A1                           |          |          |          |          |          |          |
| Weight                             | kg                 | 2.6 ±0.3                     |          |          |          |          |          |          |
| Power cable entry                  | Ømm                | 2x 28<br>1x 34               |          |          |          |          |          |          |
| Signal cable entry                 | Ømm                | 2x 22.2                      |          |          |          |          |          |          |
| Section of power cables (stranded) | mm <sup>2</sup>    | 2.1~8.4                      |          |          |          | 3.3~8.4  | 5.3~8.4  |          |
| Cooling                            |                    | Convection                   |          |          | Fan      |          |          |          |
| Cooling air flow rate              | m <sup>3</sup> /hr | none                         |          |          | 24       | 17       |          |          |
| Carrier frequency                  | kHz                | 2~15                         |          |          |          |          |          |          |
| EMC-Filter                         |                    | No                           |          |          |          |          |          |          |
| DC-Choke                           |                    | Option **                    |          |          |          |          |          |          |
| DC-Bus connection                  |                    | Yes                          |          |          |          |          |          |          |
| Brake chopper                      |                    | Built-in                     |          |          |          |          |          |          |
| Recommended brake resistor         | Ω/W                | 750/80                       | 360/200  | 250/300  | 150/400  | 75/1000  |          |          |
| Minimum brake resistor value       | Ω                  | 190                          | 126.7    | 108.6    | 84.4     | 54.3     |          |          |

**400V 11 ~ 18.5kW no filter**

| Type number                        | VFD□□□□□□□□-21     | 110CP43A                     | 150CP43A | 185CP43A  |
|------------------------------------|--------------------|------------------------------|----------|-----------|
| Rated power                        | kW                 | 11                           | 15       | 18.5      |
| Rated output current (ND/LD)       | A RMS              | 18/22.5                      | 24/30    | 32/36     |
| Overload (ND/LD)                   | %                  | 120% 60s; 160% 3s / 120% 60s |          |           |
| Rated output capacity (ND/LD)      | kVA                | 14/18                        | 19/24    | 25/29     |
| Rated input current (ND/LD)        | A RMS              | 20/25                        | 26/33    | 35/39     |
| Mains fuse (for UL: Bussmann)      |                    | JJS-50                       | JJS-60   | JJS-75    |
| Non-fuse current breaker           | A                  | 50                           | 60       | 75        |
| Dimensions HxWxD                   | mm                 | 320x190x190                  |          |           |
| Frame *                            |                    | B                            |          |           |
| Weight                             | kg                 | 5.4 ±1                       |          |           |
| Power cable entry                  | Ømm                | 1x 34<br>2x 43.8             |          |           |
| Signal cable entry                 | Ømm                | 3x 22.2                      |          |           |
| Section of power cables (stranded) | mm <sup>2</sup>    | 8.4~21.2                     |          | 13.3~21.2 |
| Cooling                            |                    | Fan                          |          |           |
| Cooling air flow rate              | m <sup>3</sup> /hr | 92                           | 136      | 124       |
| Carrier frequency                  | kHz                | 2~15                         |          |           |
| EMC-Filter                         |                    | No                           |          |           |
| DC-Choke                           |                    | Option **                    |          |           |
| DC-Bus connection                  |                    | Yes                          |          |           |
| Brake chopper                      |                    | Built-in                     |          |           |
| Recommended brake resistor         | Ω/W                | 75/1000                      | 43/1500  | 32/2000   |
| Minimum brake resistor value       | Ω                  | 47.5                         | 42.2     | 23        |

\* See dimensional drawing on Page 10~13.

\*\* Connection for external DC-Choke.



**400V 22 ~ 37kW no filter**

| Type number                        | VFD□□□□□□□□-21     | 220CP4EA                    | 300CP4EA  | 370CP4EA  |
|------------------------------------|--------------------|-----------------------------|-----------|-----------|
| Rated power                        | kW                 | 22                          | 30        | 37        |
| Rated output current (ND/LD)       | A RMS              | 38/45                       | 45/56     | 60/72     |
| Overload (ND/LD)                   | %                  | 120% 60s;160% 3s / 120% 60s |           |           |
| Rated output capacity (ND/LD)      | kVA                | 30/36                       | 36/45     | 48/57     |
| Rated input current (ND/LD)        | A RMS              | 40/47                       | 47/58     | 63/76     |
| Mains fuse (for UL: Bussmann)      |                    | JJS-100                     | JJS-125   | JJS-150   |
| Non-fuse current breaker           | A                  | 100                         | 125       | 150       |
| Dimensions HxWxD                   | mm                 | 400x250x210                 |           |           |
| Frame *                            |                    | C                           |           |           |
| Weight                             | kg                 | 9.8 ±1.5                    |           |           |
| Power cable entry                  | ∅mm                | 1x 34<br>2x 50              |           |           |
| Signal cable entry                 | ∅mm                | 4x 22.2                     |           |           |
| Section of power cables (stranded) | mm <sup>2</sup>    | 21.2~53.5                   | 26.7~53.5 | 33.6~53.5 |
| Cooling                            |                    | Fan                         |           |           |
| Cooling air flow rate              | m <sup>3</sup> /hr | 204                         |           | 250       |
| Carrier frequency                  | kHz                | 2~10                        |           |           |
| EMC-Filter                         |                    | No                          |           |           |
| DC-Choke                           |                    | Option **                   |           |           |
| DC-Bus connection                  |                    | Yes                         |           |           |
| Brake chopper                      |                    | Built-in                    |           |           |
| Recommended brake resistor         | Ω/W                | 32/2000                     | 26/3000   | 16/4000   |
| Minimum brake resistor value       | Ω                  | 23                          |           | 14.1      |

**400V 37 ~ 75kW no conduit box**

| Type number                                   | VFD□□□□□□□□-00     | 450CP43A                    | 550CP43A | 750CP43A  | 900CP43A |
|---|--------------------|-----------------------------|----------|-----------|----------|
| Rated power                                   | kW                 | 450                         | 550      | 750       | 900      |
| Rated output current (ND/LD)                  | A RMS              | 73/91                       | 91/110   | 110/144   | 150/180  |
| Overload (ND/LD)                              | %                  | 120% 60s;160% 3s / 120% 60s |          |           |          |
| Rated output capacity (ND/LD)                 | kVA                | 58/73                       | 73/88    | 88/115    | 120/143  |
| Rated input current (ND/LD)                   | A RMS              | 74/91                       | 101/110  | 114/144   | 157/180  |
| Mains fuse (for UL: Bussmann)                 |                    | JJS-175                     | JJS-250  | JJS-300   |          |
| Non-fuse current breaker                      | A                  | 175                         | 250      | 300       |          |
| Dimensions HxWxD                              | mm                 | 550x330x275                 |          |           |          |
| Frame *                                       |                    | D1                          |          |           |          |
| Weight  | kg                 | 37.6                        |          |           |          |
| Power cable entry                             | ∅mm                | open                        |          |           |          |
| Signal cable entry                            | ∅mm                | open                        |          |           |          |
| Section of power cables, stranded (with ring) | mm <sup>2</sup>    | 53.5~107                    | 67.4~107 | 85~107    | 107      |
| Cooling                                       |                    | Fan                         |          |           |          |
| Cooling air flow rate                         | m <sup>3</sup> /hr | 355                         |          |           | 367      |
| Carrier frequency                             | kHz                | 2~10                        |          |           | 2~9      |
| EMC-Filter                                    |                    | No                          |          |           |          |
| DC-Choke                                      |                    | Built-in                    |          |           |          |
| DC-Bus connection                             |                    | Yes                         |          |           |          |
| Brake chopper                                 |                    | External option             |          |           |          |
| Recommended brake resistor ***                | Ω/W                | 15/4800                     | 13/6000  | 10.2/8000 | 7.5/9600 |
| Minimum brake resistor value ***              | Ω                  | 12.7                        |          | 6.3       | 6.3      |

\* See dimensional drawing on Page 10~13.

\*\* Connection for external DC-Choke.

**400V 110 ~ 185kW no conduit box**

| Type number                                   | VFD□□□□□□□□-00     | 1100CP43A                   | 1320CP43A | 1600CP43A    | 1850CP43A |
|---|--------------------|-----------------------------|-----------|--------------|-----------|
| Rated power                                   | kW                 | 110                         | 132       | 160          | 185       |
| Rated output current (ND/LD)                  | A RMS              | 180/220                     | 220/246   | 260/310      | 310/343   |
| Overload (ND/LD)                              | %                  | 120% 60s;160% 3s / 120% 60s |           |              |           |
| Rated output capacity (ND/LD)                 | kVA                | 143/175                     | 175/196   | 207/247      | 247/343   |
| Rated input current (ND/LD)                   | A RMS              | 167/220                     | 207/246   | 240/310      | 300/343   |
| Mains fuse (for UL: Bussmann)                 |                    | JJS-400                     | JJS-500   | JJS-600      |           |
| Non-fuse current breaker                      | A                  | 400                         | 500       | 600          |           |
| Dimensions HxWxD                              | mm                 | 589x370x300                 |           | 800x420x300  |           |
| Frame *                                       |                    | E1                          |           | F1           |           |
| Weight  | kg                 | 63.6                        |           | 85           |           |
| Power cable entry                             | ∅mm                | open                        |           |              |           |
| Signal cable entry                            | ∅mm                | open                        |           |              |           |
| Section of power cables, stranded (with ring) | mm <sup>2</sup>    | 67.4~107 (2x)               |           | 107~152 (2x) | 152 (2x)  |
| Cooling                                       |                    | Fan                         |           |              |           |
| Cooling air flow rate                         | m <sup>3</sup> /hr | 561                         | 503       | 571          | 681       |
| Carrier frequency (ND/LD)                     | kHz                | 2~9                         |           |              |           |
| EMC-Filter                                    |                    | No                          |           |              |           |
| DC-Choke                                      |                    | Built-in                    |           |              |           |
| DC-Bus connection                             |                    | Yes                         |           |              |           |
| Brake chopper                                 |                    | External option             |           |              |           |
| Recommended brake resistor ***                | Ω/W                | 6.5/12000                   | 6/12000   | 4/18000      |           |
| Minimum brake resistor value ***              | Ω                  | 6.5                         | 6         | 4            |           |

\* See dimensional drawing on Page 10~13.

\*\*\* With external brake unit.

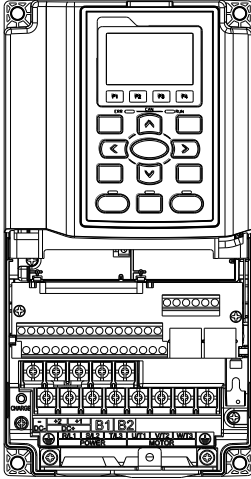
**400V 220 ~ 400kW no conduit box**

| Type number                                   | VFD□□□□□□□□-00     | 2200CP43A                   | 2800CP43A   | 3150CP43A    | 3550CP43A    | 4000CP43A |
|---|--------------------|-----------------------------|-------------|--------------|--------------|-----------|
| Rated power                                   | kW                 | 220                         | 280         | 315          | 355          | 400       |
| Rated output current (ND/LD)                  | A RMS              | 370/460                     | 460/530     | 550/616      | 616/683      | 683/770   |
| Overload (ND/LD)                              | %                  | 120% 60s;160% 3s / 120% 60s |             |              |              |           |
| Rated output capacity (ND/LD)                 | kVA                | 295/367                     | 367/422     | 438/491      | 491/544      | 544/613   |
| Rated input current (ND/LD)                   | A RMS              | 380/460                     | 400/530     | 494/616      | 555/683      | 625/770   |
| Mains fuse (for UL: Bussmann)                 |                    | JJS-800                     | KTU-1000    | KTU-1200     | KTU-1350     | KTU1500   |
| Non-fuse current breaker                      | A                  | 800                         | 1000        | 1200         | 1350         | 1500      |
| Dimensions HxWxD                              | mm                 | 1000x500x397                |             | 1435x700x398 |              |           |
| Frame *                                       |                    | G1                          |             | H1           |              |           |
| Weight  | kg                 | 130                         |             | 235          |              |           |
| Power cable entry                             | ∅mm                | open                        |             |              |              |           |
| Signal cable entry                            | ∅mm                | open                        |             |              |              |           |
| Section of power cables, stranded (with ring) | Input              | 67.4~152 (4x)               | 85~152 (4x) | 107~152 (4x) | 127~152 (4x) | 152 (4x)  |
|   | Output             | 203~253 (2x)                | 253 (2x)    |              |              |           |
| Cooling                                       |                    | Fan                         |             |              |              |           |
| Cooling air flow rate                         | m <sup>3</sup> /hr | 771                         |             | 1307         |              |           |
| Carrier frequency (ND/LD)                     | kHz                | 2~9                         |             |              |              |           |
| EMC-Filter                                    |                    | No                          |             |              |              |           |
| DC-Choke                                      |                    | Built-in                    |             |              |              |           |
| DC-Bus connection                             |                    | Yes                         |             |              |              |           |
| Brake chopper                                 |                    | External option             |             |              |              |           |
| Recommended brake resistor ***                | Ω/W                | 3.4/21000                   | 3/24000     | 2/36000      |              | 1.7/42000 |
| Minimum brake resistor value ***              | Ω                  | 3.4                         | 3           | 2            |              | 1.7       |

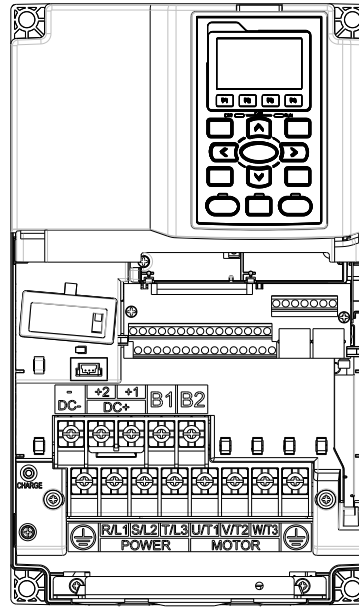
\* See dimensional drawing on Page 10~13.

\*\*\* With external brake unit.

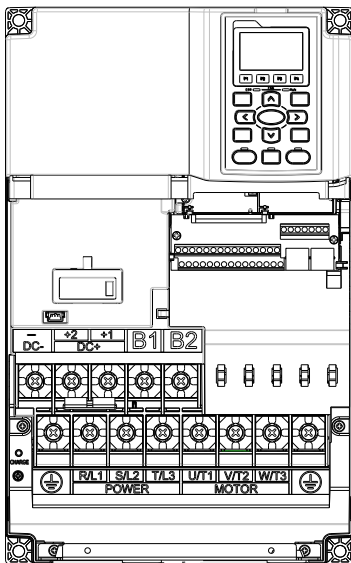
**Main circuit wiring Frame A**



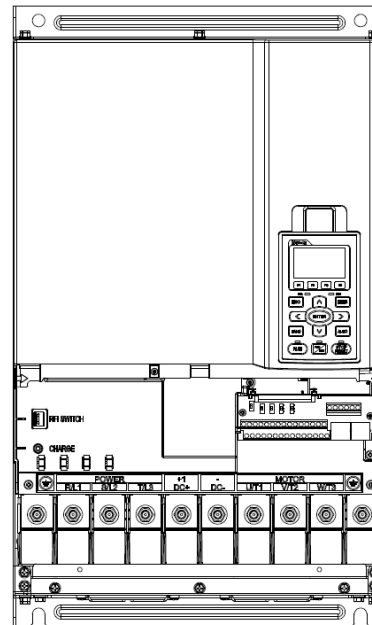
**Main circuit wiring Frame B**



**Main circuit wiring Frame C**

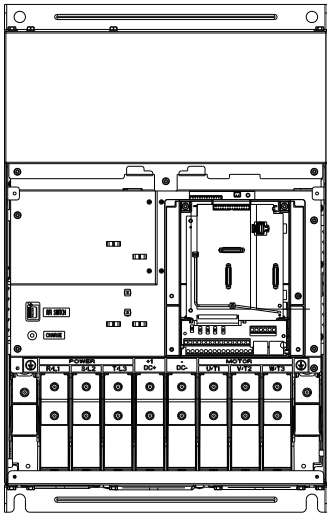


**Main circuit wiring Frame D**

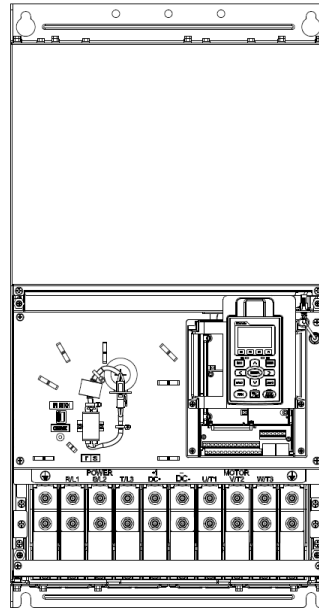




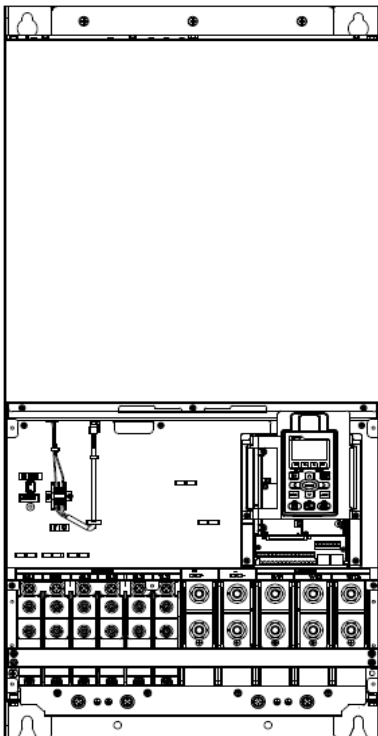
**Main circuit wiring Frame E**



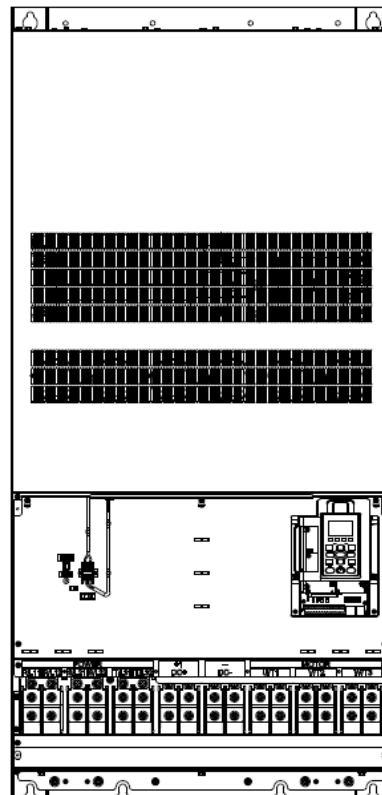
**Main circuit wiring Frame F**



**Main circuit wiring Frame G**

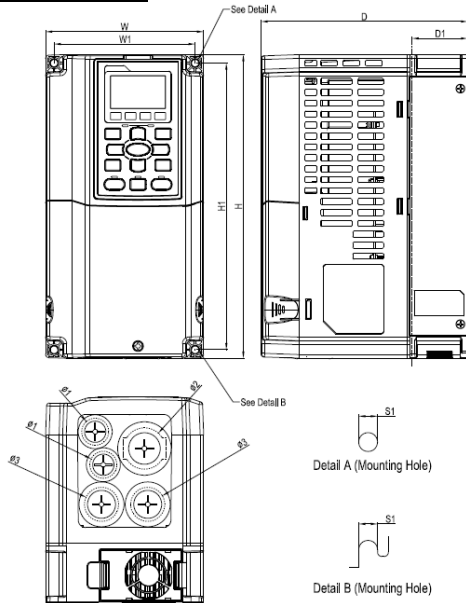


**Main circuit wiring Frame H**



## Frame sizes and dimensions in mm [inches]

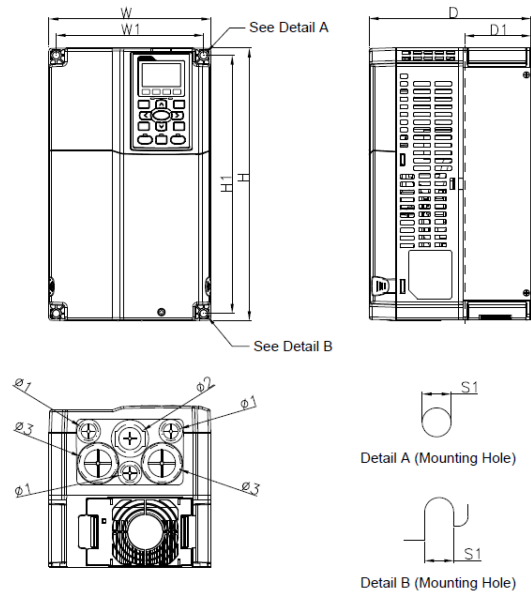
### Frame A



| Frame | W               | H               | D               | W1              | H1              | D1*            | S1            | φ1             | φ2             | φ3             |
|-------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|---------------|----------------|----------------|----------------|
| A1    | 130.0<br>[5.12] | 250.0<br>[9.84] | 170.0<br>[6.69] | 116.0<br>[4.57] | 236.0<br>[9.29] | 45.8<br>[1.80] | 6.2<br>[0.24] | 22.2<br>[0.87] | 34.0<br>[1.34] | 38.0<br>[1.10] |

Unit : mm [inch]  
D1\* : Flange mounting

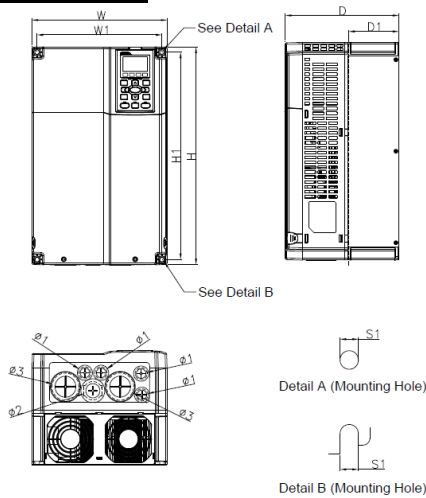
### Frame B



| Frame | W               | H                | D               | W1              | H1               | D1*            | S1            | φ1             | φ2             | φ3             |
|-------|-----------------|------------------|-----------------|-----------------|------------------|----------------|---------------|----------------|----------------|----------------|
| B     | 190.0<br>[7.48] | 320.0<br>[12.60] | 190.0<br>[7.48] | 173.0<br>[6.81] | 303.0<br>[11.93] | 77.9<br>[3.07] | 8.5<br>[0.33] | 22.2<br>[0.87] | 34.0<br>[1.34] | 43.8<br>[1.72] |

Unit : mm [inch]  
D1\* : Flange mounting

### Frame C

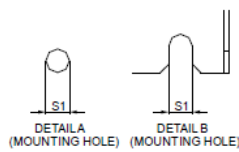
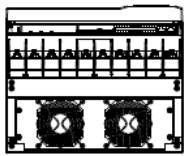
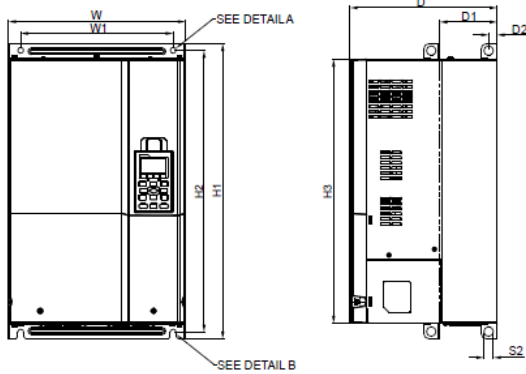


| Frame | W               | H                | D               | W1              | H1               | D1*            | S1            | φ1             | φ2             | φ3             |
|-------|-----------------|------------------|-----------------|-----------------|------------------|----------------|---------------|----------------|----------------|----------------|
| C     | 250.0<br>[9.84] | 400.0<br>[15.75] | 210.0<br>[8.27] | 231.0<br>[9.09] | 381.0<br>[15.00] | 92.9<br>[3.66] | 8.5<br>[0.33] | 22.2<br>[0.87] | 34.0<br>[1.34] | 50.0<br>[1.97] |

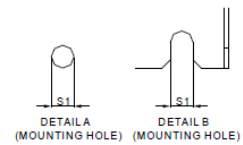
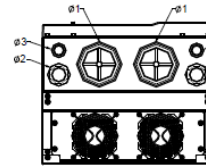
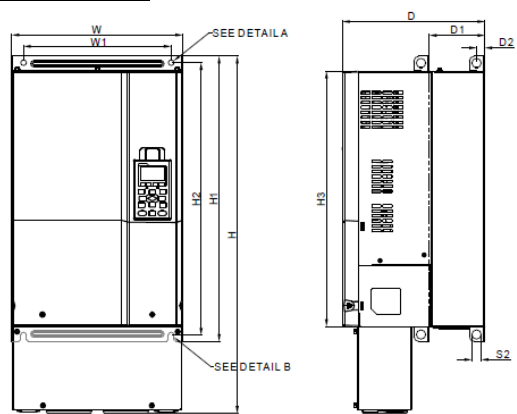
Unit : mm [inch]  
D1\* : Flange mounting

Frame sizes and dimensions in mm [inches] (cont'd)

**Frame D1**



**Frame D2**

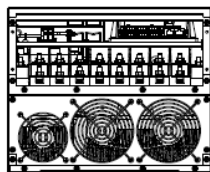
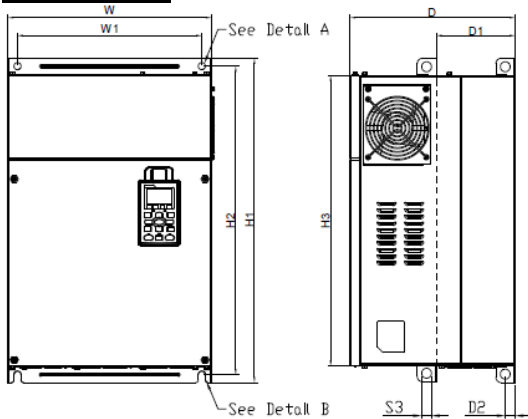


Unit : mm[inch]

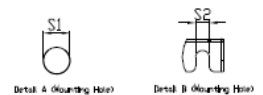
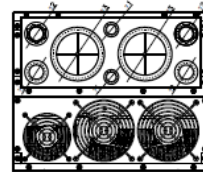
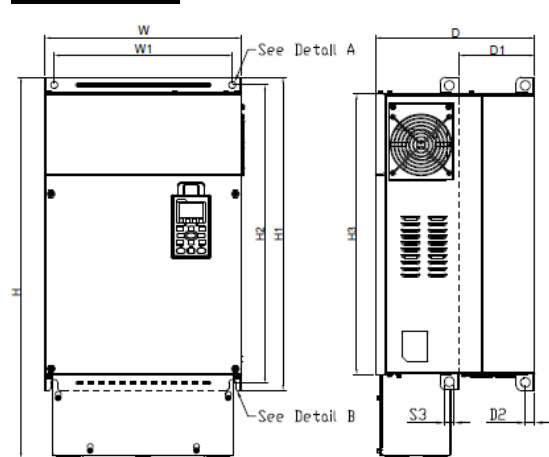
| Frame | W                | H                | D                | W1               | H1               | H2               | H3               | D1*             | D2             | S1             | S2             | φ1             | φ2             | φ3             |
|-------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| D1    | 330.0<br>[12.99] | -                | 275.0<br>[10.83] | 285.0<br>[11.22] | 550.0<br>[21.65] | 525.0<br>[20.67] | 492.0<br>[19.37] | 107.2<br>[4.22] | 16.0<br>[0.63] | 11.0<br>[0.43] | 18.0<br>[0.71] | -              | -              | -              |
| D2    | 330.0<br>[12.99] | 688.3<br>[27.10] | 275.0<br>[10.83] | 285.0<br>[11.22] | 550.0<br>[21.65] | 525.0<br>[20.67] | 492.0<br>[19.37] | 107.2<br>[4.22] | 16.0<br>[0.63] | 11.0<br>[0.43] | 18.0<br>[0.71] | 76.2<br>[3.00] | 34.0<br>[1.34] | 22.0<br>[0.87] |

D1\* : Flange mounting

**Frame E1**



**Frame E2**

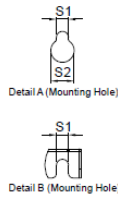
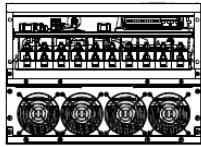
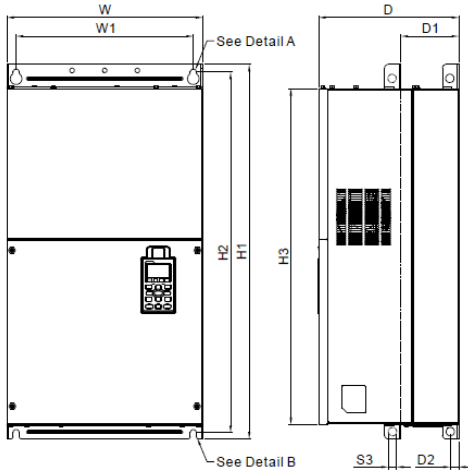


Unit : mm [inch]

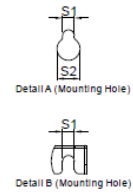
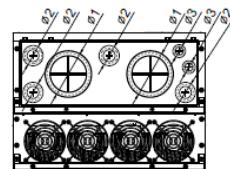
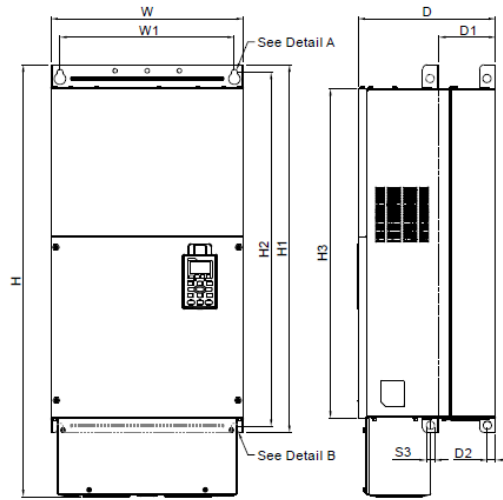
| Frame | W                | H                | D                | W1               | H1             | H2               | H3               | D1*             | D2             | S1, S2         | S3             | φ1             | φ2             | φ3             |
|-------|------------------|------------------|------------------|------------------|----------------|------------------|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| E1    | 370.0<br>[14.57] | -                | 300.0<br>[11.81] | 335.0<br>[13.19] | 589<br>[23.19] | 560.0<br>[22.05] | 528.0<br>[20.80] | 143.0<br>[5.63] | 18.0<br>[0.71] | 13.0<br>[0.51] | 18.0<br>[0.71] | -              | -              | -              |
| E2    | 370.0<br>[14.57] | 715.8<br>[28.18] | 300.0<br>[11.81] | 335.0<br>[13.19] | 589<br>[23.19] | 560.0<br>[22.05] | 528.0<br>[20.80] | 143.0<br>[5.63] | 18.0<br>[0.71] | 13.0<br>[0.51] | 18.0<br>[0.71] | 22.0<br>[0.87] | 34.0<br>[1.34] | 92.0<br>[3.62] |

D1\* : Flange mounting

### Frame F1



### Frame F2

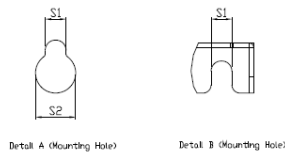
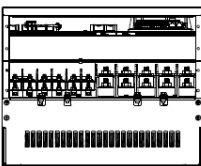
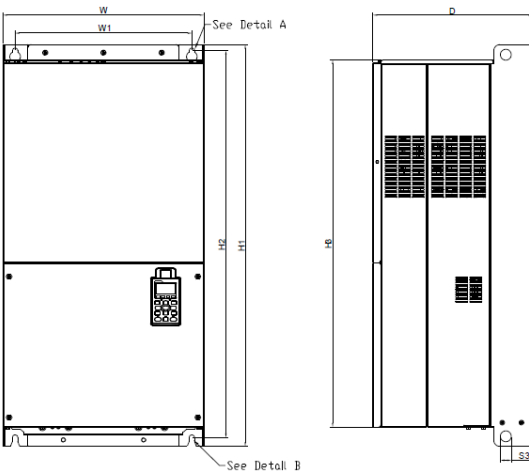


Unit : mm [inch]

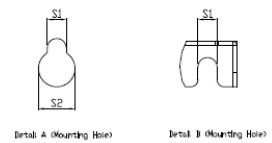
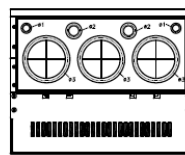
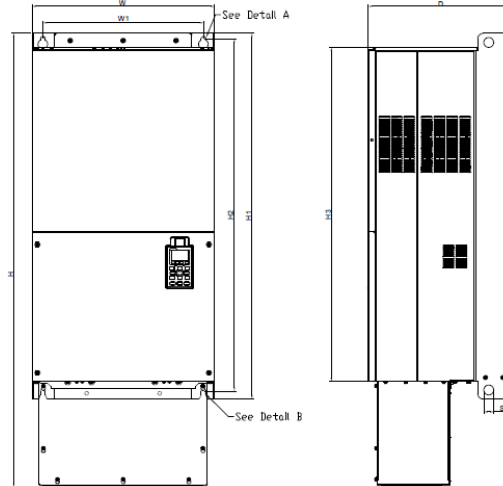
| Frame | W                | H                | D                | W1               | H1               | H2               | H3               | D1*             | D2             | S1             | S2             | S3             |
|-------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-----------------|----------------|----------------|----------------|----------------|
| F1    | 420.0<br>[16.54] | -                | 300.0<br>[11.81] | 380.0<br>[14.96] | 800.0<br>[31.50] | 770.0<br>[30.32] | 717.0<br>[28.23] | 124.0<br>[4.88] | 18.0<br>[0.71] | 13.0<br>[0.51] | 25.0<br>[0.98] | 18.0<br>[0.71] |
| F2    | 420.0<br>[16.54] | 940.0<br>[37.00] | 300.0<br>[11.81] | 380.0<br>[14.96] | 800.0<br>[31.50] | 770.0<br>[30.32] | 717.0<br>[28.23] | 124.0<br>[4.88] | 18.0<br>[0.71] | 13.0<br>[0.51] | 25.0<br>[0.98] | 18.0<br>[0.71] |

| Frame | Φ1             | Φ2             | Φ3             |
|-------|----------------|----------------|----------------|
| F1    | -              | -              | -              |
| F2    | 92.0<br>[3.62] | 35.0<br>[1.38] | 22.0<br>[0.87] |

### Frame G1



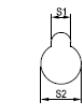
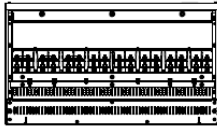
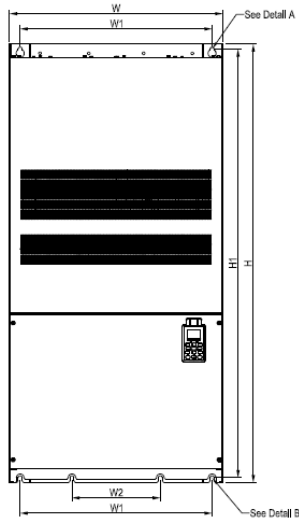
### Frame G2



Unit : mm [inch]

| Frame | W                | H                 | D                | W1                | H1                | H2               | H3               | S1             | S2             | S3             | Φ1             | Φ2             | Φ3              |
|-------|------------------|-------------------|------------------|-------------------|-------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| G1    | 500.0<br>[19.69] | -                 | 397.0<br>[15.63] | 440.0<br>[217.32] | 1000.0<br>[39.37] | 963.0<br>[37.91] | 913.6<br>[35.97] | 13.0<br>[0.51] | 26.5<br>[1.04] | 27.0<br>[1.06] | -              | -              | -               |
| G2    | 500.0<br>[19.69] | 1240.2<br>[48.83] | 397.0<br>[15.63] | 440.0<br>[217.32] | 1000.0<br>[39.37] | 963.0<br>[37.91] | 913.6<br>[35.97] | 13.0<br>[0.51] | 26.5<br>[1.04] | 27.0<br>[1.06] | 22.0<br>[0.87] | 34.0<br>[1.34] | 117.5<br>[4.63] |

**Frame H1**

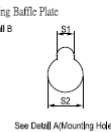
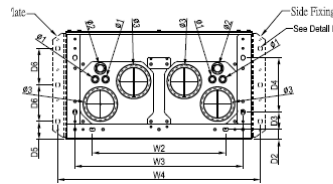
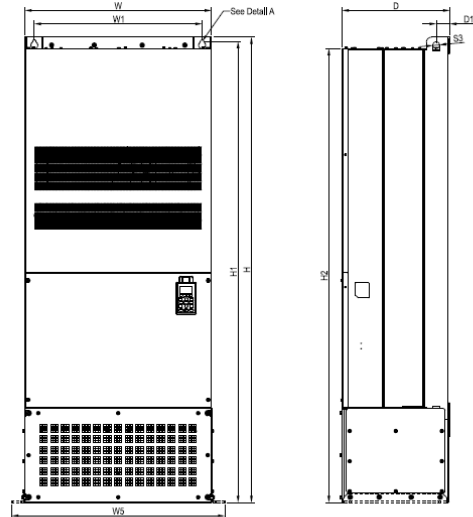


See Detail A(Mounting Hole)



See Detail B(Mounting Hole)

**Frame H3**



See Detail A(Mounting Hole)



See Detail B(Mounting Hole)

Unit : mm [inch]

| Frame | W                | H                 | D                | W1               | W2               | W3               | W4               | W5              | W6 | H1                | H2                | H3 | H4 |
|-------|------------------|-------------------|------------------|------------------|------------------|------------------|------------------|-----------------|----|-------------------|-------------------|----|----|
| H1    | 700.0<br>[27.56] | 1435.0<br>[56.5]  | 398.0<br>[15.67] | 630.0<br>[24.8]  | 290.0<br>[11.42] | -                | -                | -               | -  | 1403.0<br>[55.24] | 1346.6<br>[53.02] | -  | -  |
| H2    | 700.0<br>[27.56] | 1745.0<br>[68.70] | 404.0<br>[15.90] | 630.0<br>[24.8]  | 500.0<br>[19.69] | 630.0<br>[24.80] | 760.0<br>[29.92] | 800.0<br>[31.5] | -  | 1729.0<br>[68.07] | 1701.6<br>[66.99] | -  | -  |
| H3    | 700.0<br>[27.56] | 1745.0<br>[68.70] | 404.0<br>[15.91] | 630.0<br>[24.80] | 500.0<br>[19.69] | 630.0<br>[24.80] | 760.0<br>[29.92] | 800.0<br>[31.5] | -  | 1729.0<br>[68.07] | 1701.6<br>[66.99] | -  | -  |

| Frame | H5 | D1             | D2             | D3             | D4              | D5             | D6              | S1             | S2             | S3             | Φ1             | Φ2             | Φ3              |
|-------|----|----------------|----------------|----------------|-----------------|----------------|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| H1    |    | 45.0<br>[1.77] | -              | -              | -               | -              | -               | 13.0<br>[0.51] | 26.5<br>[1.04] | 25.0<br>[0.98] | -              | -              | -               |
| H2    |    | 51.0<br>[2.00] | 38.0<br>[1.50] | 65.0<br>[2.56] | 204.0<br>[8.03] | 68.0<br>[2.68] | 137.0<br>[5.40] | 13.0<br>[0.51] | 26.5<br>[1.04] | 25.0<br>[0.98] | -              | -              | -               |
| H3    |    | 51.0<br>[2.00] | 38.0<br>[1.50] | 65.0<br>[2.56] | 204.0<br>[8.03] | 68.0<br>[2.68] | 137.0<br>[5.40] | 13.0<br>[0.51] | 26.5<br>[1.04] | 25.0<br>[0.98] | 22.0<br>[0.87] | 34.0<br>[1.34] | 117.5<br>[4.63] |

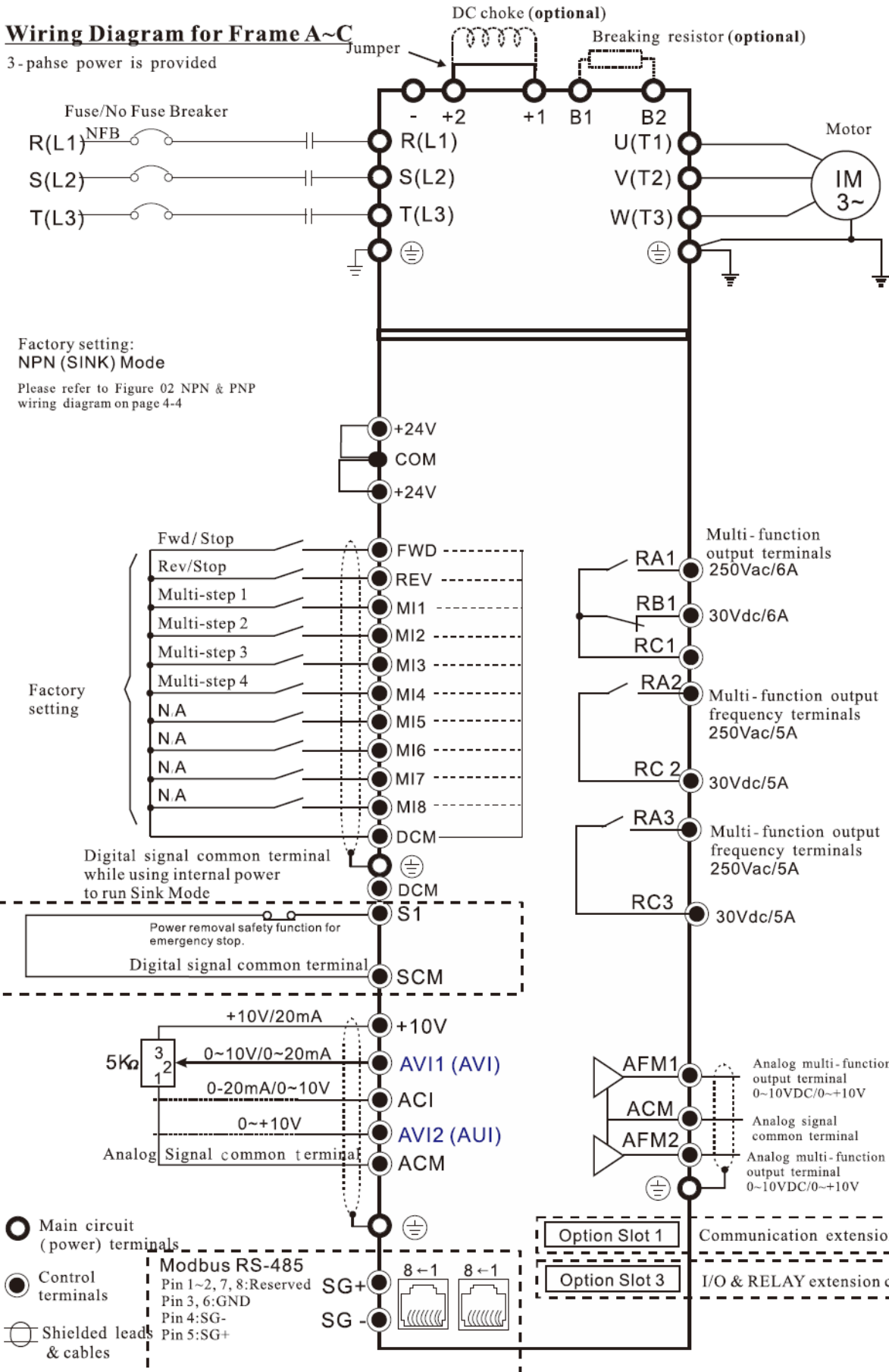
**Common data VFD-CP**

|                        |                 |   |
|------------------------|-----------------|---|
| Mains voltage range    | VAC             | 400VAC: 342 ~ 528   |
| Mains frequency        | Hz              | 47 ~ 63   |
| Output frequency range | Hz              | 0 ~ 600 (≥90kW: 0 ~ 400)  |
| Output voltage range   | V               | 0 ~ Mains   |
| Operating              |                 |   |
| Temperature            | °C              | -10 ~ +40<br>Type -21 :<br>( -10 ~ +50 for ≤37kW in ND without top cover )  |
| Atmospheric pressure   | kPa             | 86 ~ 106  |
| Relative humidity      | %               | ≤90 (non condensing, non frozen)<br>IEC60364-1/60664-1:   |
| Installation location  | %               | Pollution degree 2, Indoor use only   |
| Installation position  |                 | ±10° to vertical axis   |
| Pollution level        |                 | IEC721-3-3: 3C2, 3S2  |
| Storage                |                 |   |
| Temperature            | °C              | -25 ~ +70   |
| Atmospheric pressure   | kPa             | 86 ~ 106  |
| Relative humidity      | %               | ≤95 (non condensing, non frozen)  |
| Pollution level        |                 | IEC721-3-3: 2C2, 2S2  |
| Transportation         |                 |   |
| Temperature            | °C              | -25 ~ +70   |
| Atmospheric pressure   | kPa             | 70 ~ 106  |
| Relative humidity      | %               | ≤95 (non condensing, non frozen)  |
| Pollution level        |                 | IEC721-3-3: 1C2, 1S2  |
| Vibration              |                 | IEC680068-2-6: 2~13.2Hz 1mm<br>13.2~55Hz 0.7~1.0G<br>55-512Hz 1G  |
| Shock                  |                 | IEC680068-2-27: ≤100kg: 15G 11ms<br>>100kg: 10G 11ms  |
| Package drop           |                 | IEC680068-2-31 ISTA 1A (acc. to weight)   |
| Degree of protection   |                 | IP20<br>(Type -00 >37kW IP00 at power entry w/o conduit box )   |
| Altitude               | m               | ≤1000<br>derate 2% rated current or 0.5°C per 100m up to 3000m  |
| Keypad                 |                 | Detachable  |
| Signal cable section   | mm <sup>2</sup> | 0.13~1.3  |
| Digital inputs         | 8x Mlx          | SINK or SOURCE Via jumper<br>Range 24VDC<br>Scan time 0~30s<br>Pull-up (internal) ca. 3kΩ<br>Current (ON) 6.5mA (11VDC switching) |
| Analogue inputs        |                 | Accuracy 12 bits<br>Delay 0~20s   |
|                        | AVI1            | Range 0~10VDC / 0/4~20mA  |
|                        | AVI2            | Impedance 20kΩ / 250Ω   |
|                        | 1x ACI          | Range 0/4~20mA / 0~10VDC<br>Impedance 250Ω / 20kΩ   |
| Analogue outputs       | AFM1            | Accuracy 10 bits<br>Range 0~10VDC / 0/4~20mA (switch)<br>Impedance 100Ω/100kΩ   |
|                        | AFM2            | Accuracy 10 bits<br>Range 0~10VDC / 0/4~20mA (switch)<br>Impedance 100Ω/100kΩ   |



|                      |                    |                                    |   |
|----------------------|--------------------|------------------------------------|---|
| Relays               | 3x                 | <u>1x Change-over</u>              |   |
|                      |                    | NO: R <sub>A</sub> ~R <sub>C</sub> | Resistive 5A/250VAC-30VDC<br>Inductive 2A/250VAC-30VDC  |
|                      |                    | NC: R <sub>B</sub> ~R <sub>C</sub> | Resistive 3A/250VAC-30VDC<br>Inductive 1.2A/250VAC-30VDC  |
|                      |                    | <u>2x Make</u>                     |   |
|                      |                    | NO: R <sub>A</sub> ~R <sub>C</sub> | Resistive 5A/250VAC-30VDC<br>Inductive 2A/250VAC-30VDC  |
| Safe stop            | S1                 | EN61800-5-2 STO/SS1                |   |
| Signal supply        | 1x                 | +24VDC/200mA                       |   |
| Potentiometer supply | 2x                 | +10VDC/20mA                        |   |
| Trip memory          |                    | Last 6 errors                      |   |
| Acc/Dec Times        | s                  | 0.0 ~ 6000                         |   |
| Serial communication | 1x RJ45<br>SG+/SG- | Modbus RS485 COM1                  |   |
|                      |                    | Baudrate                           | 4800 ~ 115200   |
|                      |                    | Address                            | 1 ~ 254   |
|                      |                    | Mode                               | ASCII   |
|                      |                    |                                    | 7,N,1 / 7,N,2 / 7,E,1 / 7,O,1 /<br>7,E,2 / 7,O,2 / 8,N,1 / 8,N,2 /<br>8,E,1 / 8,O,1 / 8,E,2 / 8,O,2 |
|                      |                    |                                    | Modbus RTU  |
|                      |                    |                                    | 8,N,1 / 8,N,2 / 8,E,1 / 8,O,1 /<br>8,E,2 / 8,O,2  |
|                      |                    | BACnet COM1                        |   |
|                      |                    | Baudrate                           | 9600 ~ 38400  |
|                      |                    | Address                            | 1 ~ 127   |

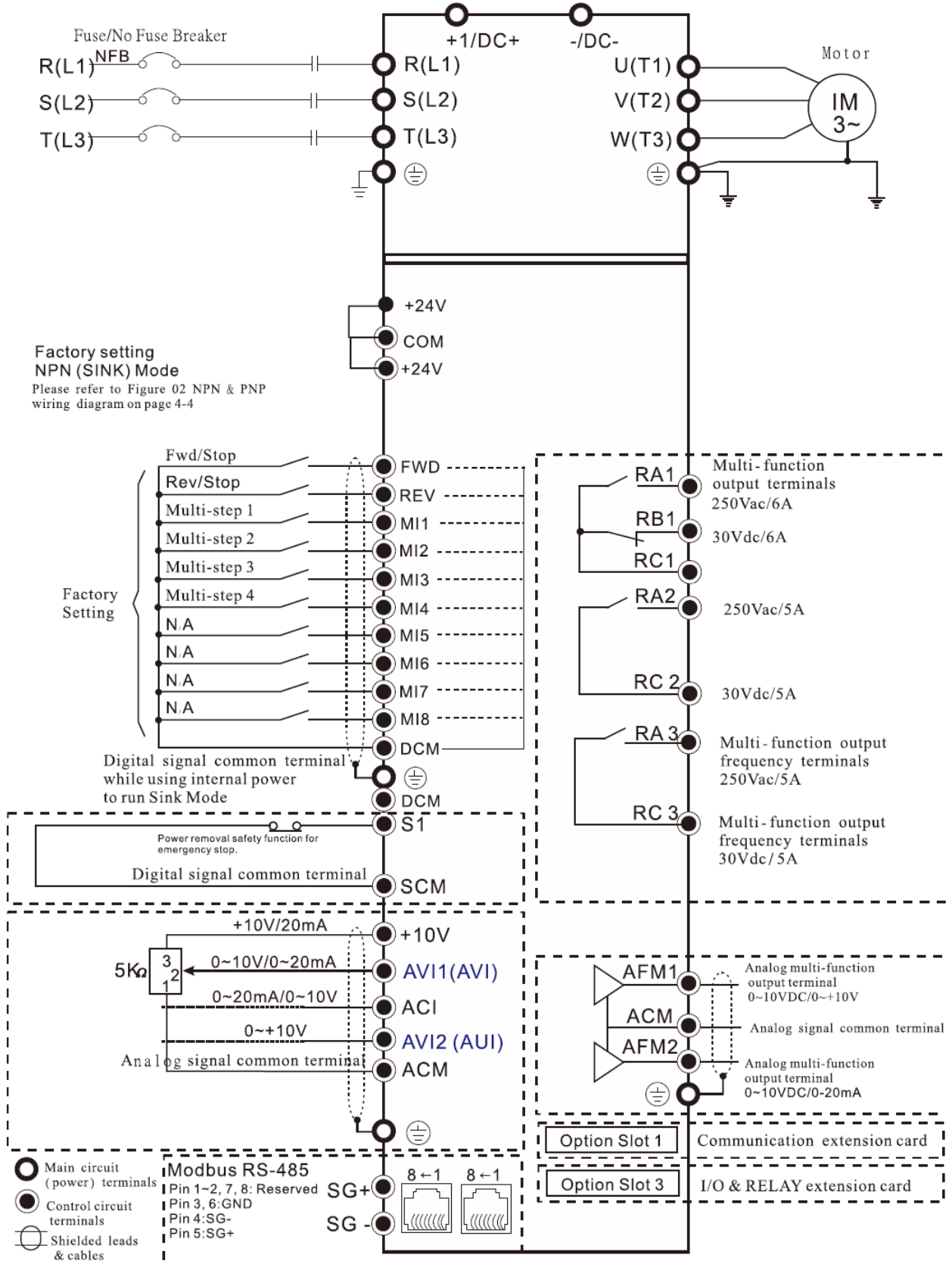
## Basic wiring diagram Frame A, B, C



## Basic wiring diagram Frame D

### Wiring Diagram for Frame D

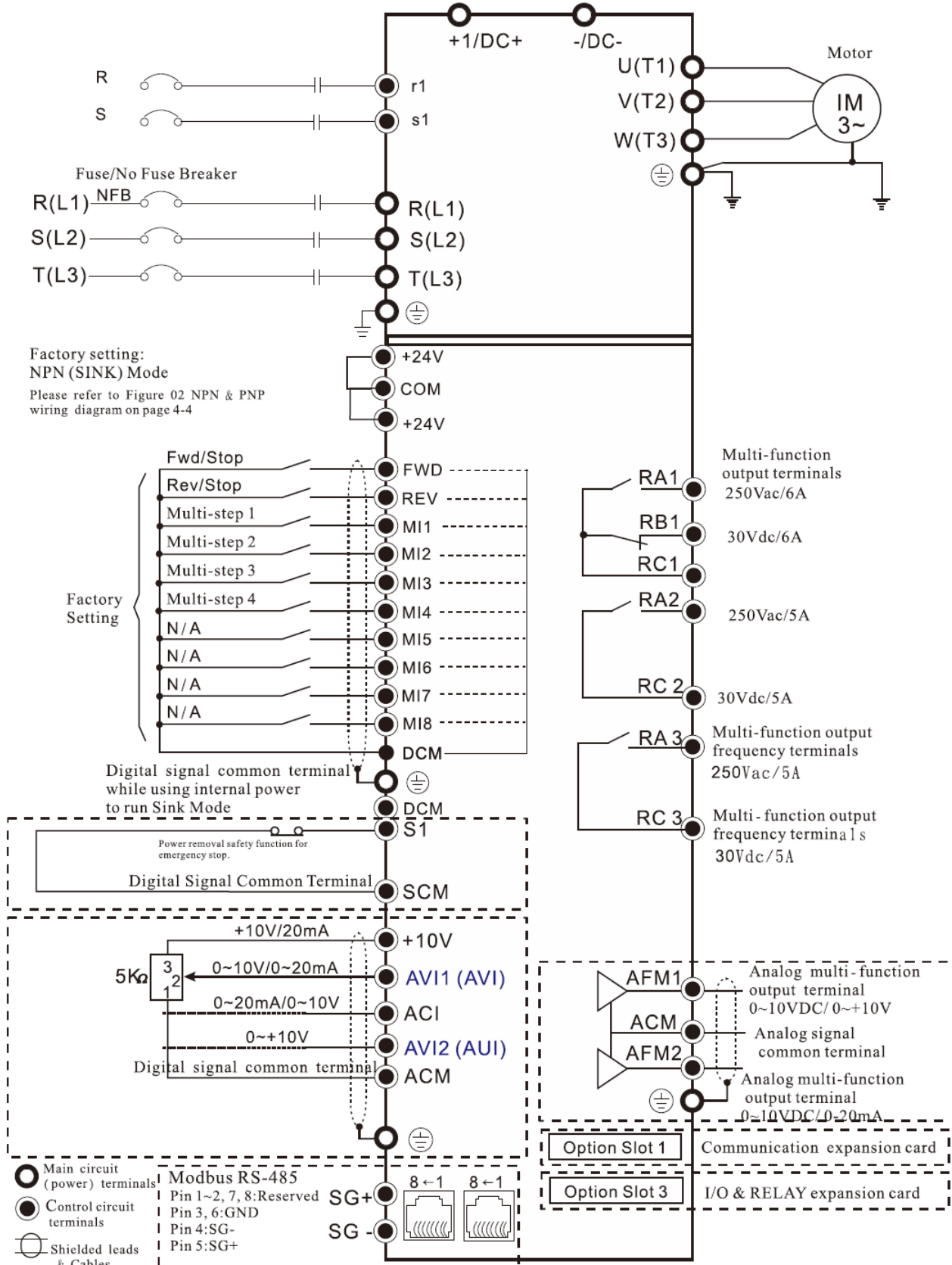
3-phase power is provided



## Basic wiring diagram Frame D, E, F, G, H

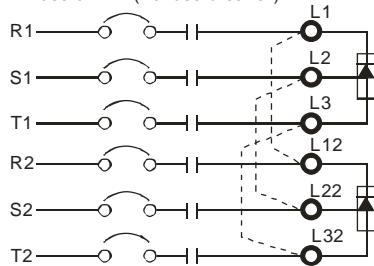
### Wiring diagram for frame E and above

3-phase power is provided

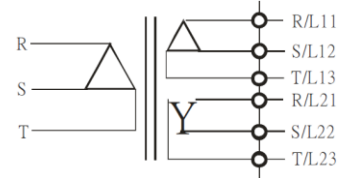


## Mains input wiring for Frame G, H

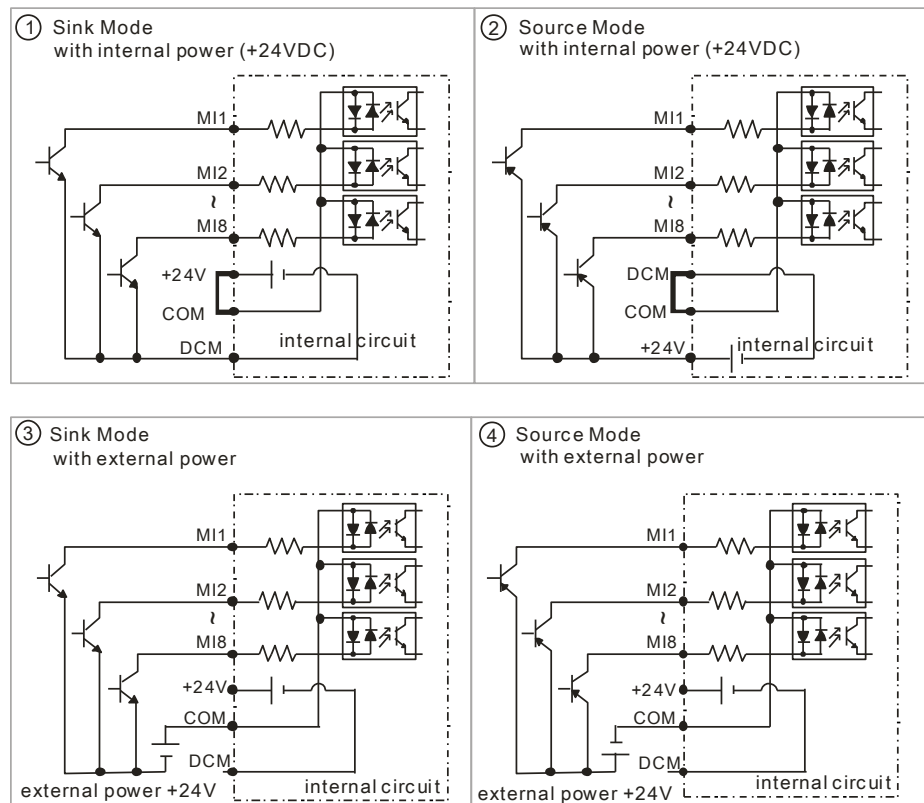
Input power terminals for frame G and H  
fuse or NFB(no fuse breaker)



By supplying L1,L2,L3 and L11,L12,L13 from transformer windings that have a 30° phase angle difference, it is possible to reduce the 5<sup>th</sup> and 7<sup>th</sup> harmonics.



## NPN/PNP wiring for MIx



## Power terminals (general)

| Terminal symbol                          | Terminal function   |
|--|---|
| R/L1, S/L2, T/L3<br>L1,L2,L3/L11,L12,L13 | Mains input   |
| U/T1, V/T2, W/T3                         | Motor output  |
| +1 ~ +2                                  | Connection DC-choke<br>(external option)                            |
| B1 ~ B2                                  | Brake resistor<br>(external option)                                 |
| + /DC+ ~ - /DC-                          | VFDB series Brake unit<br>(external option)<br>or DC-bus connection |
|  | Ground  |

## Options

### EMC Filters

Acc. to EN61800-3 (2004)

Built-in (version 4E only up to 37kW):

400V                      0.75~37kW                      ≤8kHz C3 50m

External option filter (see manual):

400V    1~15kHz C2 50m

### Braking

Brake resistors and VFDB brake units.

### Keypad&Cables

A standard CAT5 cable (no cross) can be used to connect the keypad to the drive.  
The standard keypad KPC-CC01 is IP56 when mounted on a flat surface.

### Communication

IFD6500/IFD6530 USB-RS485 converter, Splitters, Cables.

### Fieldbus

|           |                    |
|-----------|--------------------|
| CMC-DN01  | Devicenet          |
| CMC-PD01  | Profibus           |
| CMC-COP01 | CANopen            |
| CMC-MOD01 | Modbus over TCP/IP |
| CMC-EIP01 | Ethernet           |

### Option cards

|           |  |
|-----------|--|
| EMC-R6AA  | 6 programmable relays (A-C, make).                         |
| EMC-D42A  | 4 prog. Digital Inputs (PNP/NPN), 2 prog. Digital Outputs. |
| EMC-D611A | 6 prog. Digital Inputs 115VAC.                             |

### Software

To read, save, copy, change parameters. Download VFDSOFT 1.46 or higher from  
[www.delta.com.tw](http://www.delta.com.tw) [Products] [Industrial Automation] [AC Motor Drive] [Download] [Software].



## Programming

### Group 00-xx

#### Drive Parameters

Drive ID, Software version, Password, Parameter reset, Control Mode, Duty selection, User-defined display, Carrier frequency, Source of frequency/operation, Stop method, Motor direction inhibit, ND/LD selection, etc.

### Group 01-xx

#### Basic Parameters

V/f-curve (2), Max/Min Voltage and frequency, Acc/Dec times, Jogging, S-curve, 3 Skip frequencies, etc.

### Group 02-xx

#### Digital Input/Output Parameters

2-3 Wire operation, Function and setting of digital inputs, outputs and relay, Count values, Debounce time, Brake delay, etc.

### Group 03-xx

#### Analogue Input/Output Parameters

Function, Gain, Bias, Filtering of analogue inputs and outputs.

### Group 04-xx

#### Multi-step Speed and Position

15 Speed steps and positions.

### Group 05-xx

#### Motor Parameters

Setting of motor parameters (2 motors), Auto-tuning, Slip compensation, Torque boost, Y- $\Delta$  switch-over, Motor operation time, etc.

### Group 06-xx

#### Protection Parameters

Protection settings, Fault memory and conditions, PTC, Fire mode, etc.

### Group 07-xx

#### Special Parameters

Brake level, DC-Braking, Power loss override, DEB, Speed search, Auto reset, Fan control, Emergency stop, Auto Energy Saving, AVR, Slip compensation, Autorestart, etc.

### Group 08-xx

#### PID Control Parameters

PID settings, Sleep function, etc.

### Group 09-xx

#### Communication Parameters

Modbus Protocol&Address, BACnet station, Transmission speed, Block Transfer, CANopen, Fieldbus settings, etc.

### Group 12-xx

#### Pump parameters: Circulative control

Settings for circulative control (cascading).

[www.delta.com.tw](http://www.delta.com.tw)

