

Digitized Automation for a Changing World

Delta Vector Control Drive C2000 Series



reddot design award
winner 2010

www.deltaww.com

 **DELTA**
Smarter. Greener. Together.



Powerful Features. High Efficiency.

The C2000 Series AC motor drive provides the most efficient solution for all types of drive applications. It features precise speed, torque and position control functions that are suitable for both sensor and sensorless types of synchronous and asynchronous motors. The C2000 Series is also equipped with built-in PLC functions and supports the CANopen Master/Slave extension for the ultimate in system flexibility and fast data exchange.

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Standard Models (IP20/NEMA1)

Power range : 230V 0.75 ~ 90kW

| | | | | | | | | | | | | | | | | |
|------------|------|-----|-----|-----|-----|-----|----|----|------|----|----|----|----|----|-----|-----|
| 230 V (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 |
| 230 V (HP) | 1 | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 |
| Frame Size | A | | | B | | | C | | | D | | | E | | | F |

Power range : 460V 0.75 ~ 450kW

| | | | | | | | | | | | | | | | | |
|------------|------|-----|-----|-----|-----|-----|-----|----|----|------|----|----|----|----|----|-----|
| 460 V (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 |
| 460 V (HP) | 1 | 2 | 3 | 5 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 |
| Frame Size | A | | | | | | B | | | C | | | D0 | | D | |

Power range: 575V 1.5~15kW

| | | | | | | | |
|------------|-----|-----|-----|-----|-----|----|----|
| 575 V (kW) | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 |
| 575 V (HP) | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 |
| Frame Size | A | | | B | | | |

Power range: 690V 18.5~630kW

| | | | | | | | | | | | | | | | | |
|------------|------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 690 V (kW) | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 | 200 | 250 | 315 | 400 | 450 |
| 690 V (HP) | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 | 150 | 175 | 215 | 270 | 335 | 425 | 530 | 600 |
| Frame Size | C | | | D | | | E | | | F | | | G | | H | |

Advanced Drive Controls

High Performance

1. High bandwidth control
2. Speed / torque / position control mode
3. Dual rating design (normal duty / heavy duty)
4. 4-quadrant torque control and limit
5. For both synchronous and asynchronous motors

Environmental Adaptability

1. 50°C operating temperature
2. Built-in DC reactor
3. Coated circuit boards
4. Built-in EMC filter
5. International safety standard (CE/UL/cUL)

*Note: Please refer to the Product Specification



| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 90 | 110 | 132 | 160 | 185 | 220 | 280 | 315 | 355 | 450 |
| 125 | 150 | 175 | 215 | 250 | 300 | 375 | 425 | 475 | 600 |
| E | | F | | G | | H | | | |

| | |
|-----|-----|
| 560 | 630 |
| 745 | 840 |

▪ Versatile Drive Controls

1. Built-in safe stop function
2. Built-in PLC function
3. Built-in brake unit
4. Supports various network protocols
5. Position control

▪ Modular Design

1. Hot pluggable LCD keypad
2. I/O extension cards
3. Various PG (encoder) feedback cards
4. Network cards for fieldbus modules
5. Removable fan



Modular Design

Various accessories options, such as I/O extension cards, encoder feedback cards, communication cards, hot pluggable LCD keypad, removable terminals and removable fans.

▶ PG (Encoder) cards

EMC-PG01O / EMC-PG02O



EMC-PG01U / EMC-PG02U



EMC-PG01L / EMC-PG02L



EMC-PG01R



■ Removable fan

To ensure personal safety, do not begin wiring before the indicator light is off.

■ Power indicator

To prevent personal injury, please do not perform wiring before power indicator is off.

■ Removable terminals

Convenient wiring and safety equipment.

*NOTE: "▶" are optional accessories.

▶ I/O extension cards

EMC-D611A



EMC-D42A



EMC-A22A



▶ Relay Extension Card

EMC-R6AA



▶ 24V Power Shift Card

EMC-BPS01



▶ Communication cards

CMC-PD01



CMC-DN01



CMC-MOD01 / CMC-EIP01



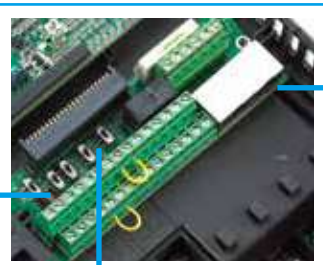
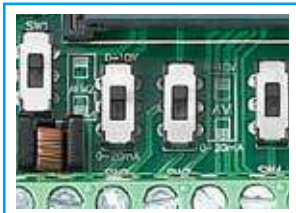
EMC-COP01



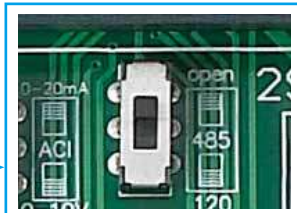
CMC-EC01



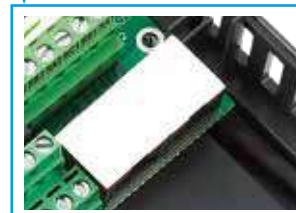
Analog I/O switch



Termination resistor



Dual RJ45 communication ports




The modular design fulfills the needs of system applications and equipment maintenance.


- KPC-CC01 keypad
- Standard RJ45 network cable for remote operation.
- Easy to remove with one press.




- The product nameplate shows the input / output voltage, input / output current, the frequency range, and more.




- Remove the safety screws and press on both side tabs to remove the cover.



- Modular fan design, easy to replace and clean, extending product service life.



- RFI Jumper



Excellent Environment Adaptability

- ▶ Built-in DC choke to suppress harmonics*
- ▶ Built-in EMC filter to filter noise*
- ▶ Conformal coating (Class 3C3 of IEC60721-3-3 standard) ensures drive operation stability and safety in critical environments.
- ▶ The electronic components of the drive are isolated from the cooling system to reduce heat interference. Dissipated heat can be discharged by flange-mounting installation, and forced fan cooling can import cold air into the heat sink. The heat dissipation performance is optimized by these two cooling methods.

*Note: Please refer to the Product Specification



Certifications

| | |
|----------------|--|
| UL, cUL | CE |
| C-Tick | Low Voltage: EN61800-5-1 |
| ROHS | EMC: EN61000-3-12, EN61800-3, IEC61000-6-2, IEC61000-6-4, IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-8 |

Quick and Easy Parameters Setting via the LCD Keypad

- Multi-column display for the drive status
- Simple and intuitive operation
- User-defined parameter groups
- Real Time Clock and calendar function
- Language selection for display
- Copy function saves parameters and PLC programs to the keypad memory for later transfer to another drive
- IP66 protection level



F1 to F4: User-defined function keys

Selection keys

LED displays the current drive status



Create homepage logo



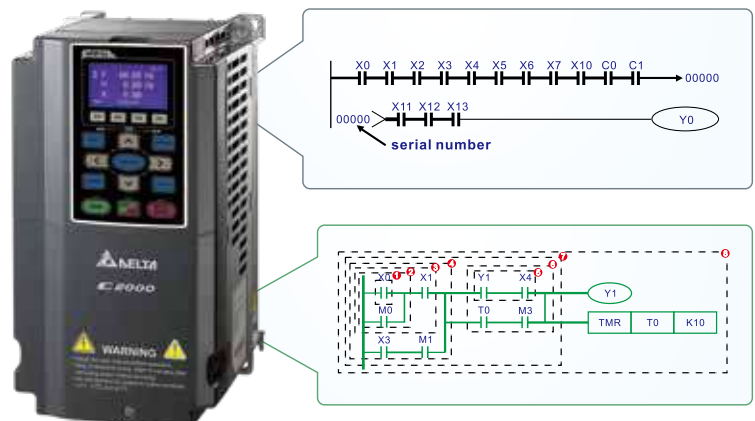
Editable message display



Editable chart display

Intelligent PLC Functions

- Built-in 10K steps capacity of PLC functions. Distributed control and independent operation are easily achieved via network connection.
- CANopen Master protocol and PLC functions provide synchronous control and fast data exchange.



High-Speed Network

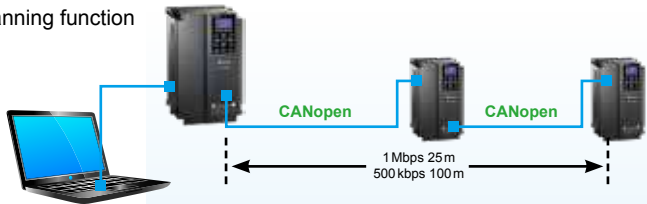
- ▶ Provides optional MODBUS RTU and various fieldbus cards for flexible applications



■ CANopen (DS402)

Ability to control up to 8 Slave drives via the CANopen Master function

- Supports all Delta industrial automation products (Built-in EDS files for all Delta industrial automation products)
- I/O data configurations for each device on the CANopen network
- Motion control planning function
- WPL Soft



- TAP-CN03 distribution box for long distances



- RJ45 cable



■ DeviceNet

Through the Delta specially designed DeviceNet Builder software, users can easily establish a standard DeviceNet control network by the parameter pre-assignment function for each equipment and remote I/O.

- Supports all Delta industrial automation products (Built-in EDS files for all Delta industrial automation products)
- I/O data configurations for each device on the DeviceNet network
- DeviceNet layout software



■ EtherNet/IP

■ MODBUS TCP

Delta provides communication integrator software that offers graphic module settings and a user friendly interface to support all Ethernet products settings and online monitoring.

- Delta software for Ethernet/MODBUS TCP products
- Graphic module settings and a user friendly interface
- Auto search function
- Supports Virtual COM settings



Convenient Drive System Management Platform

- Provides a complete operation platform for users' easy control and monitoring via PC, including parameters save/setting, real-time wave monitor, quick setup, for multiple languages and with multi-language operation systems.

Start-up display
Displays horsepower, rated voltage and current of the drive in use.

Parameter management
Provides parameter setting/save/copy/comparison for convenient parameter management.

Trend records
Monitors the drive operation form via network and displays I/O terminal status. Useful for tasks such as "trial run monitoring".

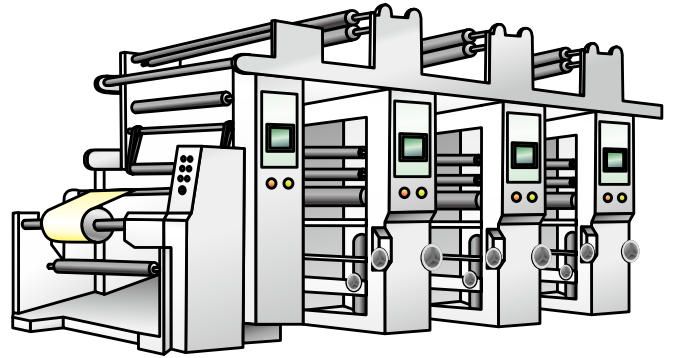
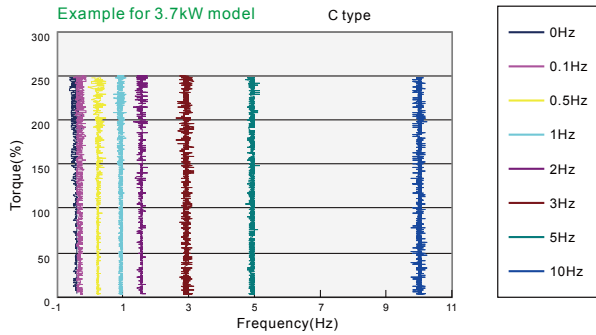
Quick setup
Guides the user step-by-step through the drive settings according to a quick setup wizard.

*NOTE: These software programs are available for download on Delta's website

High-Performance Field Oriented Control

The FOC+PG mode of the C2000 Series can output 150% of starting torque at extremely low speeds for precise and stable speed control.

Precise position and speed control is ideal for printing machine applications.

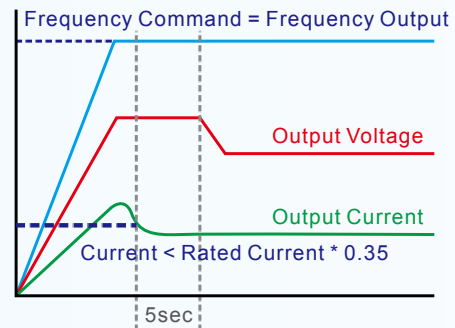
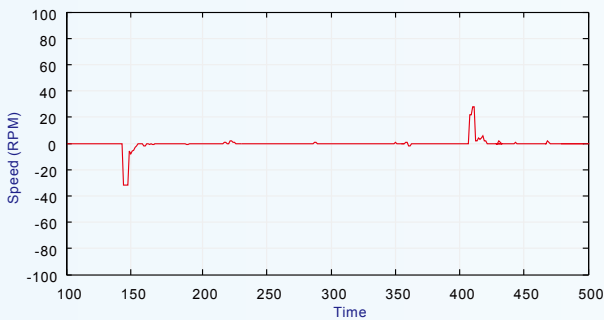


Fast Response to Impact Load

During load changes, the C2000 Series calculates the required torque response and minimizes the vibration caused by load impact using FOC.

Auto Energy-Saving Operation

Auto-calculates the optimal voltage for the load output using load power when under constant speed operation.

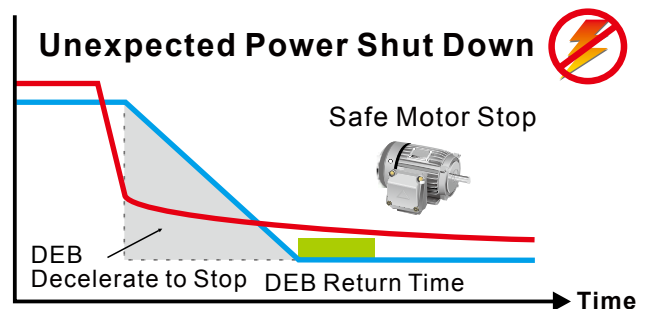
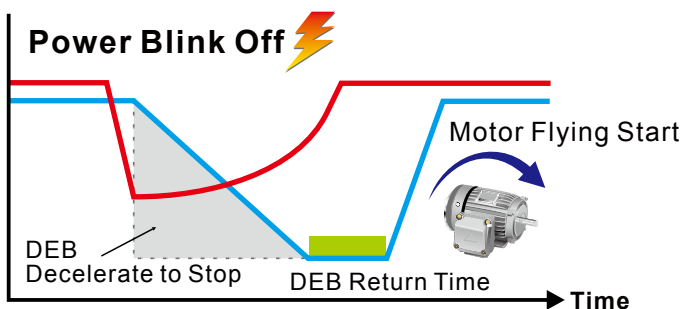


Deceleration Energy Backup (DEB)

This function controls the motor deceleration to stop when power blinks off to prevent mechanical damage and then accelerates to its original operation speed when power resumes.

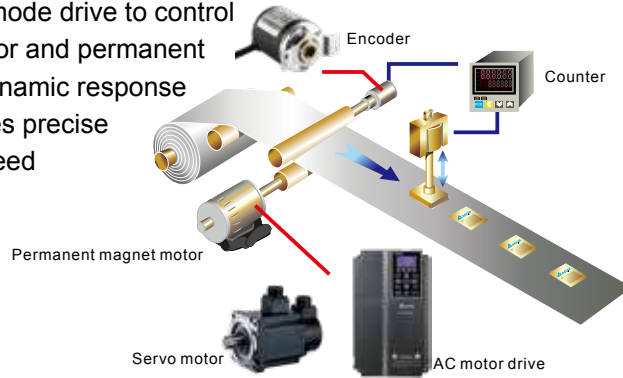
— Input Voltage
— Motor Speed

— Input Voltage
— Motor Speed



A Drive for Permanent Magnet (PM) Motors

The C2000 is a dual mode drive to control both an induction motor and permanent magnet motor. The dynamic response of a PM motor provides precise control of position, speed and torque.



Delta REG2000 Series for Power Regeneration

Using the REG2000 with the C2000 in a crane and hoist application provides the user with a four-quadrant operation and energy saving results.



Delta AFE2000 Series for Power Regeneration and Power Quality Improvement

The Active Front End Unit (AFE2000) helps to reduce torque ripple and harmonics with a higher power factor to provide excellent production quality and outstanding energy saving results.



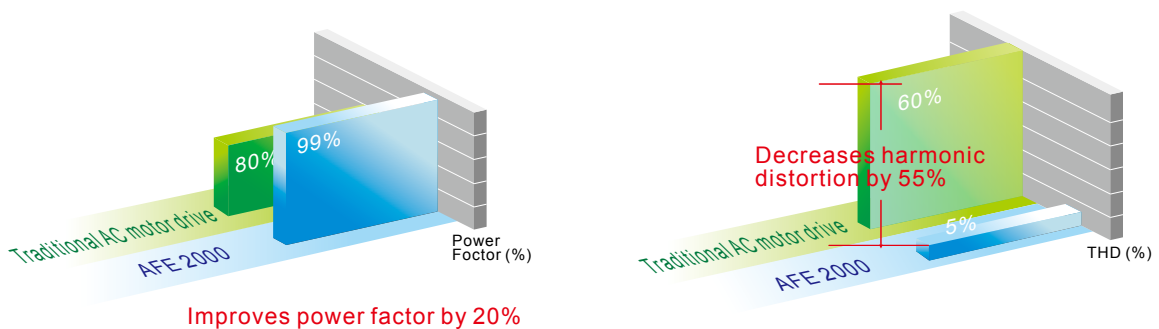
Delta Active Front End AFE2000 Series

Features

- Replaces traditional brake resistor to reduce heat generation.
- Clear energy savings: more than 95% of the regenerative energy is converted into electricity and supplied back to the mains.
- Full-load operation: input-side current THD lower than 5% and improves power factor up to 99%.
- AC motor drives with AFE2000: supports 4-quadrant operation with variable frequencies and adjustable system.
- Constant DC bus voltage: unaffected by mains voltage fluctuations.



Improves power factor and decreases harmonic distortion.
THD ≤ 5%, power factor > 99%





Applications

- Large-inertia loads, such as centrifuge equipment, dewatering machines and roving machines
- 4-quadrant loads including elevators, cranes and pumpjacks (oil extraction machines)
- Quick braking, such as machine tools, bag making machines, auto storage and retrieval systems, and lathes
- Long-term energy feedback, such as wind power, water power, steel printing and paper making machinery (winding equipment)
- Improves power quality for industries such as semiconductor and panel industries




Operation Temperature and Protection Level

| Model | Frame | Top Cover | Conduit Box | Protection Level | Operation Temperature |
|--------------------------------|---|-------------------------|------------------------|--|-----------------------|
| VFDxxxCxxA VFDxxxCxxS | Frame A ~ C 230V: 0.75 ~ 22kW 460V: 0.75 ~ 30kW | Remove top cover | Standard conduit plate | IP20 / UL Open Type | -10°C ~ 50°C |
| | | Standard with top cover | | IP20 / UL Type1 / NEMA1 | -10°C ~ 40°C |
| | Frame D ~ H 230V: > 22kW 460V: > 30kW | N / A | No conduit box |  Protection degree for the circled area is IP00, other areas are IP20 | -10°C ~ 50°C |
| VFDxxxCxxE VFDxxxCxxU | Frame A ~ C 460V: 0.75 ~ 30kW | Remove top cover | Standard conduit plate | IP20 / UL Open Type | -10°C ~ 50°C |
| | | Standard with top cover | | IP20 / UL Type1 / NEMA1 | -10°C ~ 40°C |
| | Frame D ~ H 230V: > 22kW 460V: > 30kW | N / A | Standard conduit box | IP20 / UL Type1 / NEMA1 | -10°C ~ 40°C |
| VFDxxxC53A-21 VFDxxxC63B-21 | Frame A ~ C 1.5 ~ 37kW | Remove top cover | Standard conduit plate | IP20 / UL Open Type | -10°C ~ 50°C |
| | | Standard with top cover | | IP20 / UL Type1 / NEMA1 | -10°C ~ 40°C |
| VFDxxxC63B-21 | Frame D ~ H > 45kW | N / A | Standard conduit box | IP20 / UL Type1 / NEMA1 | -10°C ~ 40°C |
| VFDxxxC63B-00 | Frame D ~ H > 45kW | N / A | No conduit box |  Protection degree for the circled area is IP00, other areas are IP20 | -10°C ~ 50°C |



Environment for Operation, Storage and Transportation

DO NOT expose the AC motor drive to harsh environments, such as dust, direct sunlight, corrosive/flammable gasses, humidity, liquid or vibrations. The salts in the air must be less than 0.01 mg/cm² per year.

| | | | |
|---|---|---|----------------------|
| Environment | Installation Location | IEC60364-1/IEC60664-1 Pollution degree 2, indoor use only | |
| | Surrounding Temperature (°C) | Storage/Transportation | -25 ~ 70 |
| | | Only allowed in non-condensation, non-frost, non-conductive environment. | |
| | Rated Humidity | Operation/Storage/Transportation | Max. 95% |
| | | Only allowed in non-condensation, non-frost, non-conductive environment. | |
| | Air Pressure (kPa) | Operation/Storage | 86 ~ 106 |
| | | Transportation | 70 ~ 106 |
| | | IEC60721-3-3 | |
| | Pollution Level | Operation | Class 3C3; Class 3S2 |
| | | Storage | Class 1C2; Class 1S2 |
| Transportation | | Class 2C2; Class 2S2 | |
| If the AC motor drive is to be used in a harsh environment with a high level of contamination (e.g. dew, water, dust), make sure it is installed in an environment qualified for IP54 such as in a cabinet. | | | |
| Altitude | Operation | If the AC motor drive is installed at an altitude 0 ~ 1000m, follow normal operation restriction. If it is installed at altitude 1000 ~ 2000m, decrease 1% of rated current or lower 0.5°C of temperature for every 100m increase in altitude. Maximum altitude for Corner Grounded TN system is 2000m, for application over 2000m please contact Delta for more details. | |
| | | | |
| Package Drop | Storage/Transportation | ISTA procedure 1A (according to weight) IEC60068-2-31 | |
| Vibration | 1.0 mm, peak to peak value range from 2Hz to 13.2Hz; 0.7 G ~ 1.0 G range from 13.2 Hz to 55Hz; 1.0 G range from 55 Hz to 512 Hz. Comply with IEC 60068-2-6. | | |
| Impact | IEC/EN 60068-2-27 | | |
| Operation Position | Max. allowed offset angle ±10° (under normal installation position) |  | |

Specifications

| 230V | | | | | | | | | | | | | | | | | | | |
|-------------------|-------------------------|---|--|------|-----|---------|-----|-----|----------------------------|-------------------------|------|------------|-----------------------------|-----------------------------|---------------------------|------------|-----|-----|--|
| Frame Size | | A | | | | B | | | C | | | D | | E | | F | | | |
| Model VFD- □□□C□□ | | 007 | 015 | 022 | 037 | 055 | 075 | 110 | 150 | 185 | 220 | 300 | 370 | 450 | 550 | 750 | 900 | | |
| Output Rating * | NORMAL DUTY | Rated Output Capacity (kVA) | 2.0 | 3.2 | 4.4 | 6.8 | 10 | 13 | 20 | 26 | 30 | 36 | 48 | 58 | 72 | 86 | 102 | 138 | |
| | | Rated Output Current (A) | 5 | 8 | 11 | 17 | 25 | 33 | 49 | 65 | 75 | 90 | 120 | 146 | 180 | 215 | 255 | 346 | |
| | | Applicable Motor Output (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | |
| | | Applicable Motor Output (HP) | 1 | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 120 | |
| | | Overload Capacity | 120% of rated current: 1 minute for every 5 minutes; 160% of rated current: 3 seconds for every 30 seconds | | | | | | | | | | | | | | | | |
| | HEAVY DUTY | Max. Output Frequency (Hz) | 0.00 ~ 599.00 | | | | | | | | | | | | | | | | |
| | | Carrier Frequency (kHz) | 2 ~ 15 (default setting 8) | | | | | | 2 ~ 10 (default setting 6) | | | | | | 2 ~ 9 (default setting 4) | | | | |
| | | Rated Output Capacity (kVA) | 1.9 | 2.8 | 4.0 | 6.4 | 9.6 | 12 | 19 | 25 | 28 | 34 | 45 | 55 | 68 | 81 | 96 | 131 | |
| | | Rated Output Current (A) | 4.8 | 7.1 | 10 | 16 | 24 | 31 | 47 | 62 | 71 | 86 | 114 | 139 | 171 | 204 | 242 | 329 | |
| | | Applicable Motor Output (kW) | 0.4 | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 | 19 | 22 | 30 | 37 | 45 | 55 | 75 | |
| Input Rating | Input Current (A) | Normal Duty | 6.4 | 12 | 16 | 20 | 28 | 36 | 52 | 72 | 83 | 99 | 124 | 143 | 171 | 206 | 245 | 331 | |
| | | Heavy Duty | 6.1 | 11 | 15 | 18.5 | 26 | 34 | 50 | 68 | 78 | 95 | 118 | 136 | 162 | 196 | 233 | 315 | |
| | Rated Voltage/Frequency | 3-phase AC 200V ~ 240V (-15% ~ +10%), 50/60Hz | | | | | | | | | | | | | | | | | |
| | Operating Voltage Range | 170 ~ 264V _{ac} | | | | | | | | | | | | | | | | | |
| | Frequency Tolerance | 47 ~ 63Hz | | | | | | | | | | | | | | | | | |
| | Drive Weight (Kg) | 2.6 ± 0.3 | | | | 5.4 ± 1 | | | 9.8 ± 1.5 | | | 38.5 ± 1.5 | | 64.8 ± 1.5 | | 86.5 ± 1.5 | | | |
| | Efficiency (%) | 97.8 | | | | | | | | | | | | | | | | | |
| | Power Factor | > 0.98 | | | | | | | | | | | | | | | | | |
| | Cooling Method | Natural cooling | | | | | | | | Fan cooling | | | | | | | | | |
| | Braking Chopper | | | | | | | | | Frame A, B, C: built-in | | | | Frame D and above: optional | | | | | |
| DC Choke | | | | | | | | | Frame A, B, C: optional | | | | Frame D and above: built-in | | | | | | |
| EMC Filter | Optional | | | | | | | | | | | | | | | | | | |
| EMC-COP01 | Optional | | | | | | | | | | | | | | | | | | |

* The factory setting is Normal Duty mode

460V

| Frame Size | | A | | | | | B | | | C | | | | |
|------------------|--|--|--|------|-----|-----|-------------|-----|----------------------------|-----------|-----|------|------|----|
| Model VFD-□□□C□□ | | 007 | 015 | 022 | 037 | 040 | 055 | 075 | 110 | 150 | 185 | 220 | 300 | |
| Output Rating * | NORMAL DUTY | Rated Output Capacity (kVA) | 2.4 | 3.2 | 4.8 | 7.2 | 8.4 | 10 | 14 | 19 | 25 | 30 | 36 | 48 |
| | | Rated Output Current (A) | 3.0 | 4.0 | 6.0 | 9.0 | 10.5 | 12 | 18 | 24 | 32 | 38 | 45 | 60 |
| | | Applicable Motor Output (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | 30 |
| | | Applicable Motor Output (HP) | 1 | 2 | 3 | 5 | 5 | 7.5 | 10 | 15 | 20 | 25 | 30 | 40 |
| | | Overload Capacity | 120% of rated current: 1 minute for every 5 minutes; 160% of rated current: 3 seconds for every 30 seconds | | | | | | | | | | | |
| | HEAVY DUTY | Max. Output Frequency (Hz) | 0.00 ~ 599.00 | | | | | | | | | | | |
| | | Carrier Frequency (kHz) | 2 ~ 15 (default setting 8) | | | | | | 2 ~ 10 (default setting 6) | | | | | |
| | | Rated Output Capacity (kVA) | 2.3 | 3.0 | 4.5 | 6.5 | 7.6 | 9.6 | 14 | 18 | 24 | 29 | 34 | 45 |
| | | Rated Output Current (A) | 2.9 | 3.8 | 5.7 | 8.1 | 9.5 | 11 | 17 | 23 | 30 | 36 | 43 | 57 |
| | | Applicable Motor Output (kW) | 0.4 | 0.75 | 1.5 | 2.2 | 3.7 | 4.0 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 |
| Input Rating | Input Current (A) | Normal Duty | 4.3 | 5.9 | 8.7 | 14 | 15.5 | 17 | 20 | 26 | 35 | 40 | 47 | 63 |
| | | Heavy Duty | 4.1 | 5.6 | 8.3 | 13 | 14.5 | 16 | 19 | 25 | 33 | 38 | 45 | 60 |
| | Rated Voltage/Frequency | 3-phase AC 380 V ~ 480 V (-15% ~ +10%), 50/60 Hz | | | | | | | | | | | | |
| | Operating Voltage Range | 323 ~ 528 V _{AC} | | | | | | | | | | | | |
| | Frequency Tolerance | 47 ~ 63 Hz | | | | | | | | | | | | |
| | Drive Weight (Kg) | 2.6 ± 0.3 | | | | | 5.4 ± 1 | | | 9.8 ± 1.5 | | | | |
| | Efficiency (%) | 97.8 | | | | | | | | | | | | |
| | Power Factor | > 0.98 | | | | | | | | | | | | |
| | Cooling Method | Natural cooling | | | | | Fan cooling | | | | | | | |
| | Braking Chopper | Frame A, B, C: built-in; Frame D and above: optional | | | | | | | | | | | | |
| DC Choke | Frame A, B, C: optional; Frame D and above: built-in | | | | | | | | | | | | | |
| EMC Filter | VFDXXC43A: Optional; Frame A~C VFDXXC43E: Built-in | | | | | | | | | | | | | |
| EMC-COP01 | VFDXXC43A: optional; VFDXXC43E: built-in | | | | | | | | | | | | | |

460V

| Frame Size | | D0 | | D | | E | | F | | G | | H | | | | | |
|------------------|--|--|--|-----|------------|-----|------|------------|---------------------------|------------|------|---------|------|------|------|-----|--|
| Model VFD-□□□C□□ | | 370 | 450 | 550 | 750 | 900 | 1100 | 1320 | 1600 | 1850 | 2200 | 2800 | 3150 | 3550 | 4500 | | |
| Output Rating * | NORMAL DUTY | Rated Output Capacity (kVA) | 58 | 73 | 88 | 120 | 143 | 175 | 207 | 247 | 295 | 367 | 438 | 491 | 544 | 720 | |
| | | Rated Output Current (A) | 73 | 91 | 110 | 150 | 180 | 220 | 260 | 310 | 370 | 460 | 550 | 616 | 683 | 866 | |
| | | Applicable Motor Output (kW) | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 | 185 | 220 | 280 | 315 | 355 | 450 | |
| | | Applicable Motor Output (HP) | 50 | 60 | 75 | 100 | 125 | 150 | 175 | 215 | 250 | 300 | 375 | 420 | 475 | 600 | |
| | | Overload Capacity | 120% of rated current: 1 minute for every 5 minutes; 160% of rated current: 3 seconds for every 30 seconds | | | | | | | | | | | | | | |
| | HEAVY DUTY | Max. Output Frequency (Hz) | 0.00 ~ 599.00 | | | | | | | | | | | | | | |
| | | Carrier Frequency (kHz) | 2 ~ 10 (default setting 6) | | | | | | 2 ~ 9 (default setting 4) | | | | | | | | |
| | | Rated Output Capacity (kVA) | 55 | 69 | 84 | 114 | 136 | 167 | 197 | 235 | 280 | 348 | 417 | 466 | 517 | 677 | |
| | | Rated Output Current (A) | 69 | 86 | 105 | 143 | 171 | 209 | 247 | 295 | 352 | 437 | 523 | 585 | 649 | 815 | |
| | | Applicable Motor Output (kW) | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 | 160 | 185 | 220 | 280 | 315 | 355 | |
| Input Rating | Input Current (A) | Normal Duty | 74 | 101 | 114 | 157 | 167 | 207 | 240 | 300 | 380 | 400 | 494 | 555 | 625 | 866 | |
| | | Heavy Duty | 70 | 96 | 108 | 149 | 159 | 197 | 228 | 285 | 361 | 380 | 469 | 527 | 594 | 815 | |
| | Rated Voltage/Frequency | 3 - phase AC 380 V ~ 480 V (-15% ~ +10%), 50/60 Hz | | | | | | | | | | | | | | | |
| | Operating Voltage Range | 323 ~ 528 V _{AC} | | | | | | | | | | | | | | | |
| | Frequency Tolerance | 47 ~ 63 Hz | | | | | | | | | | | | | | | |
| | Drive Weight (Kg) | 27 ± 1.5 | | | 38.5 ± 1.5 | | | 64.8 ± 1.5 | | 86.5 ± 1.5 | | 134 ± 4 | | 228 | | | |
| | Efficiency (%) | 97.8 | | | | | | 98.2 | | | | | | | | | |
| | Power Factor | > 0.98 | | | | | | | | | | | | | | | |
| | Cooling Method | Fan cooling | | | | | | | | | | | | | | | |
| | Braking Chopper | Frame A, B, C: built-in; Frame D and above: optional | | | | | | | | | | | | | | | |
| DC Choke | Frame A, B, C: optional; Frame D and above: built-in | | | | | | | | | | | | | | | | |
| EMC Filter | Frame D0~H: Optional | | | | | | | | | | | | | | | | |
| EMC-COP01 | VFDXXC43A: optional; VFDXXC43E: built-in | | | | | | | | | | | | | | | | |

* The factory setting is Normal Duty mode

NOTES

- 1) The carrier frequency is default. Increasing the carrier frequency requires a reduction in current. please refer to Pr. 06-55 Derating Protection drawing.
- 2) The AC motor drive should operate in derating current when its control method is set to FOC Sensorless, TQC+PG, TQC sensorless. PM+PG, PM sensorless. Please refer to Pr. 06-55 for more information.
- 3) Select the AC motor drive with capacity one grade larger for the impact load application.
- 4) The rated input current will be affected not only by Power Transformer and the connection of the reactors on input side, but also fluctuates with the impedance of power side.
- 5) For Frame A, B and C, Model VFDXXC43A is under IP20/NEMA1/UL TYPE1 protection level.
- 6) For Frame D and above, if the last character of the model is A then it is under IP20 protection level but the wiring terminal is under IP00 protection level;
- 7) if the last character of the model is E, it is under IP20/NEMA1/UL TYPE1 protection level.

575V

| Frame Size | | A | | | B | | | | |
|-------------------------|-------------------|--|------|-----|-------------|------|------|------|------|
| Model VFD-□□□C53A-21 | | 015 | 022 | 037 | 055 | 075 | 110 | 150 | |
| Output * | Light Duty | Rated Output Capacity (kVA) | 3 | 4.3 | 6.7 | 9.9 | 12.1 | 18.7 | 24.1 |
| | | Rated Output Current (A) | 3 | 4.3 | 6.7 | 9.9 | 12.1 | 18.7 | 24.2 |
| | | Applicable Motor Output (kW) | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | 15 |
| | Normal Duty | Applicable Motor Output (HP) | 2 | 3 | 5 | 7.5 | 10 | 15 | 20 |
| | | Rated Output Capacity (kVA) | 2.5 | 3.6 | 5.5 | 8.2 | 10 | 15.4 | 19.9 |
| | | Rated Output Current (A) | 2.5 | 3.6 | 5.5 | 8.2 | 10 | 15.5 | 20 |
| | Heavy Duty | Applicable Motor Output (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 |
| | | Applicable Motor Output (HP) | 1 | 2 | 3 | 5 | 7.5 | 10 | 15 |
| | | Rated Output Capacity (kVA) | 2.1 | 3 | 4.6 | 6.9 | 8.3 | 12.9 | 16.7 |
| | | Rated Output Current (A) | 2.1 | 3 | 4.6 | 6.9 | 8.3 | 13 | 16.8 |
| | | Applicable Motor Output (kW) | 0.75 | 1.5 | 2.2 | 3.7 | 3.7 | 7.5 | 7.5 |
| | | Applicable Motor Output (HP) | 1 | 2 | 3 | 5 | 5 | 10 | 10 |
| Carrier Frequency (kHz) | | 2~15 (default setting 4) | | | | | | | |
| Input | Input Current (A) | Light Duty | 3.8 | 5.4 | 10.4 | 14.9 | 16.9 | 21.3 | 26.3 |
| | | Normal Duty | 3.1 | 4.5 | 7.2 | 12.3 | 15 | 18 | 22.8 |
| | | Heavy Duty | 2.6 | 3.8 | 5.8 | 10.7 | 12.5 | 16.9 | 19.7 |
| Rated Voltage/Frequency | | 3-Phase 525 V _{AC} ~600 V _{AC} (-15%~+10%), 50/60 Hz | | | | | | | |
| Operating Voltage Range | | 446~660 V _{AC} | | | | | | | |
| Frequency Tolerance | | 47~63 Hz | | | | | | | |
| Efficiency (%) | | 97 | | | 98 | | | | |
| Power Factor | | >0.98 | | | | | | | |
| AC Drive Weight (Kg) | | 3±0.3 | | | 4.8±1 | | | | |
| Cooling Method | | Natural cooling | | | Fan cooling | | | | |
| Braking Chopper | | Built-in | | | | | | | |
| DC Choke | | Optional | | | | | | | |
| EMC Filter | | Optional | | | | | | | |

690V

| Frame Size | | C | | | | D | | E | | | | |
|----------------------------|------------------------------------|--|------|------|------|--------|------------------------------|-----|--------|------|------|-----|
| Model VFD-□□□C63B-00 / -21 | | 185 | 220 | 300 | 370 | 450 | 550 | 750 | 900 | 1100 | 1320 | |
| Output * | Light Duty | Rated Output Capacity (kVA) | 29 | 36 | 43 | 54 | 65 | 80 | 103 | 124 | 149 | 179 |
| | | Applicable Motor Output (690V, kW) | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 | 132 |
| | | Applicable Motor Output (690V, HP) | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 | 150 | 175 |
| | Normal Duty | Applicable Motor Output (575V, HP) | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 | 150 |
| | | Rated Output Current (A) | 24 | 30 | 36 | 45 | 54 | 67 | 86 | 104 | 125 | 150 |
| | | Rated Output Capacity (kVA) | 24 | 29 | 36 | 43 | 54 | 65 | 80 | 103 | 124 | 149 |
| | Heavy Duty | Applicable Motor Output (690V, kW) | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 | 110 |
| | | Applicable Motor Output (690V, HP) | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 | 150 |
| | | Applicable Motor Output (575V, HP) | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 |
| | | Rated Output Current (A) | 20 | 24 | 30 | 36 | 45 | 54 | 67 | 86 | 104 | 125 |
| | | Rated Output Capacity (kVA) | 17 | 24 | 29 | 36 | 43 | 54 | 65 | 80 | 103 | 124 |
| | | Applicable Motor Output (690V, kW) | 11 | 15 | 18.5 | 22 | 30 | 37 | 45 | 55 | 75 | 90 |
| | Applicable Motor Output (690V, HP) | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | 125 | |
| | Applicable Motor Output (575V, HP) | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 75 | 100 | |
| | Rated Output Current (A) | 14 | 20 | 24 | 30 | 36 | 45 | 54 | 67 | 86 | 104 | |
| Carrier Frequency (kHz) | | 2~9 (default setting 4) | | | | | | | | | | |
| Input | Input Current (A) | Light Duty | 29 | 36 | 43 | 54 | 65 | 81 | 84 | 102 | 122 | 147 |
| | | Normal Duty | 24 | 29 | 36 | 43 | 54 | 65 | 66 | 84 | 102 | 122 |
| | | Heavy Duty | 20 | 24 | 29 | 36 | 43 | 54 | 53 | 66 | 84 | 102 |
| Rated Voltage/Frequency | | 3-Phase 525 V _{AC} ~690 V _{AC} (-15%~+10%), 50/60 Hz | | | | | | | | | | |
| Operating Voltage Range | | 446~759 V _{AC} | | | | | | | | | | |
| Frequency Tolerance | | 47~63 Hz | | | | | | | | | | |
| Efficiency (%) | | 97 | | | | | | | | | | |
| Power Factor | | >0.98 | | | | | | | | | | |
| AC Drive Weight (Kg) | | 10±1.5 | | | | 39±1.5 | | | 61±1.5 | | | |
| Cooling Method | | Fan cooling | | | | | | | | | | |
| Braking Chopper | | Frame C (built-in) | | | | | Frame D and above (optional) | | | | | |
| DC Choke | | Frame C (optional) | | | | | Frame D and above (built-in) | | | | | |
| EMC Filter | | Optional | | | | | | | | | | |


* Parameter 00-16; available load modes: Light Duty (LD), Normal Duty (ND) and Heavy Duty (HD); default setting is LD mode

| 690 V | | | | | | | | | | |
|----------------------------|-------------------------|------------------------------------|--|---------|------|---------|-------|-------------------------|-------|-----|
| Frame Size | | F | | G | | H | | | | |
| Model VFD-□□□C63B-00 / -21 | | 1600 | 2000 | 2500 | 3150 | 4000 | 4500 | 5600 | 6300 | |
| Output * | Light Duty | Rated Output Capacity (kVA) | 215 | 263 | 347 | 418 | 494.5 | 534.7 | 678.5 | 776 |
| | | Applicable Motor Output (690V, kW) | 160 | 200 | 250 | 315 | 400 | 450 | 560 | 630 |
| | | Applicable Motor Output (690V, HP) | 215 | 270 | 335 | 425 | 530 | 600 | 745 | 850 |
| | | Applicable Motor Output (575V, HP) | 175 | 200 | 250 | 350 | 400 | 450 | 500 | 745 |
| | Normal Duty | Rated Output Capacity (kVA) | 179 | 215 | 239 | 347 | 402.5 | 442.7 | 534.7 | 776 |
| | | Applicable Motor Output (690V, kW) | 132 | 160 | 200 | 250 | 315 | 355 | 450 | 630 |
| | | Applicable Motor Output (690V, HP) | 175 | 215 | 270 | 335 | 425 | 475 | 600 | 850 |
| | | Applicable Motor Output (575V, HP) | 150 | 175 | 200 | 250 | 350 | 400 | 450 | 745 |
| | Heavy Duty | Rated Output Capacity (kVA) | 149 | 179 | 215 | 263 | 333.5 | 356.5 | 483 | 776 |
| | | Applicable Motor Output (690V, kW) | 110 | 132 | 160 | 200 | 250 | 280 | 400 | 630 |
| | | Applicable Motor Output (690V, HP) | 150 | 175 | 215 | 270 | 335 | 375 | 530 | 850 |
| | | Applicable Motor Output (575V, HP) | 125 | 150 | 175 | 200 | 250 | 335 | 450 | 745 |
| Rated Output Current (A) | | 125 | 150 | 180 | 220 | 290 | 310 | 420 | 675 | |
| Carrier Frequency (kHz) | | 2~9 (default setting 4) | | | | | | 2~9 (default setting 3) | | |
| Input | Input Current (A) | Light Duty | 178 | 217 | 292 | 353 | 454 | 469 | 595 | 681 |
| | | Normal Duty | 148 | 178 | 222 | 292 | 353 | 388 | 504 | 681 |
| | | Heavy Duty | 123 | 148 | 181 | 222 | 292 | 313 | 423 | 681 |
| | Rated Voltage/Frequency | | 3-Phase 525 V _{AC} ~690 V _{AC} (-15%~+10%), 50/60 Hz | | | | | | | |
| Operating Voltage Range | | 446~759 V _{AC} | | | | | | | | |
| Frequency Tolerance | | 47~63 Hz | | | | | | | | |
| Efficiency (%) | | 97 | | | 98 | | | | | |
| Power Factor | | >0.98 | | | | | | | | |
| AC Drive Weight (Kg) | | 88 ± 1.5 | | 135 ± 4 | | 243 ± 5 | | | | |
| Cooling Method | | Fan cooling | | | | | | | | |
| Braking Chopper | | Frame D and above (optional) | | | | | | | | |
| DC Choke | | Frame D and above (built-in) | | | | | | | | |
| EMC Filter | | Optional | | | | | | | | |

* Parameter 00-16; available load modes: Light Duty (LD), Normal Duty (ND) and Heavy Duty (HD); default setting is LD mode



General Specifications

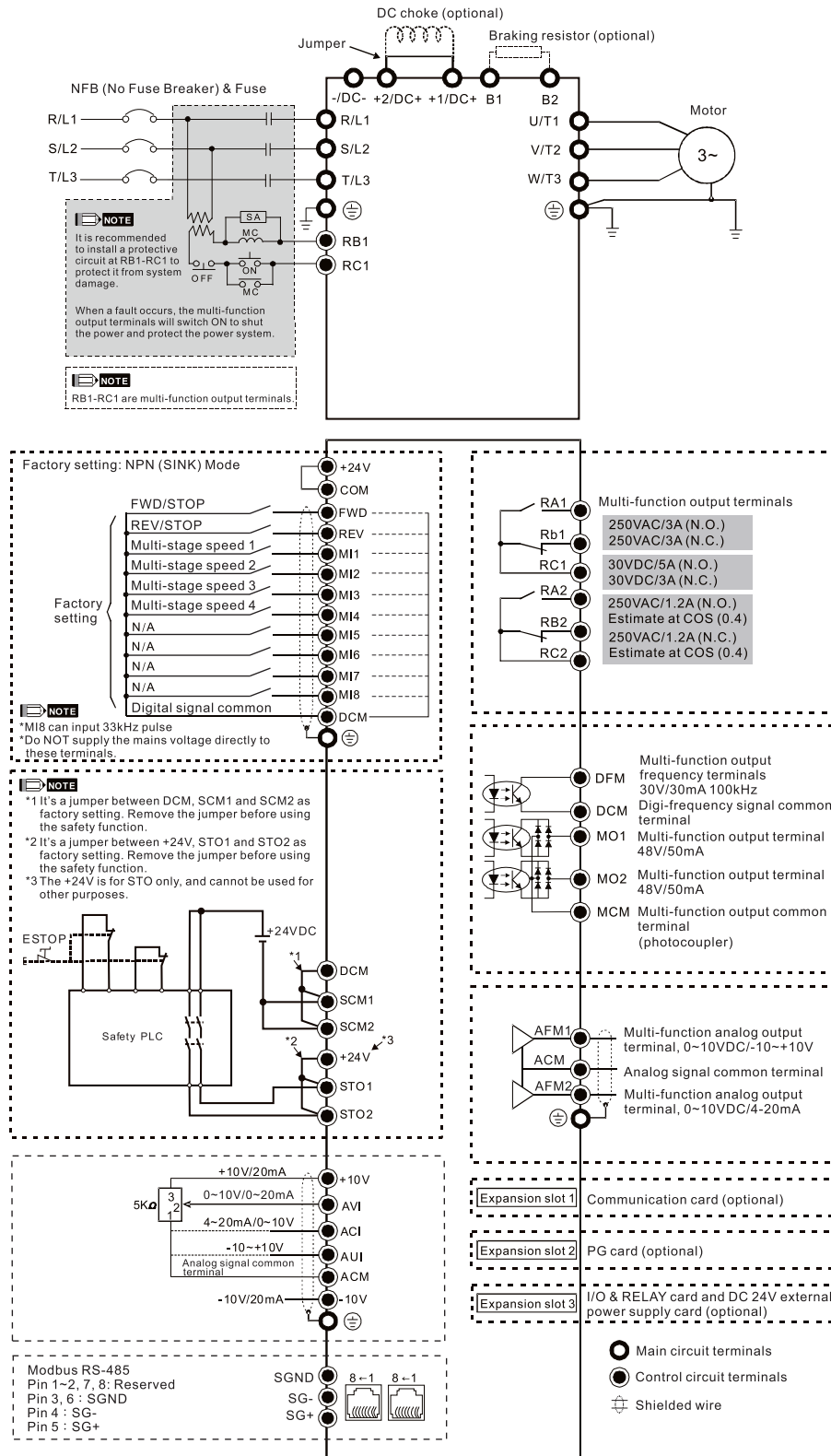
| | | |
|-------------------------------------|--|---|
| Control Characteristics | Control Method | Pulse Width Modulated (PWM) |
| | Control Mode | 230 V / 460 V model: 1: V / F · 2: SVC · 3: VF+PG · 4: FOC+PG · 5: TQC+PG · 6: PM+PG · 7: FOC sensorless · 8: TQC sensorless · 9: PM sensorless 575 V / 690 V model: 1: V / F · 2: V / F+PG · 3: SVC |
| | Starting Torque | Reach up to 150% or above at 0.5 Hz. Under FOC+PG mode, starting torque can reach 150% at 0 Hz |
| | V/F Curve | 4-point adjustable V/F curve and square curve |
| | Speed Response Ability | 5 Hz (vector control can reach up to 40 Hz) |
| | Torque Limit | 230 V / 460 V model: Normal duty 160%, heavy duty 180% of torque current ; 575 V / 690 V model: Maximum 200% of torque current |
| | Torque Accuracy at TQC Mode | TQC + PG : ±5% TQC Sensorless : ±15% |
| | Max. Output Frequency (Hz) | Light Duty / Normal duty: 0.01 ~ 599.00 Hz; Heavy duty: 0.00 ~ 300.00 Hz |
| | Frequency Output Accuracy | Digital command: ±0.01%, -10 ° C ~ +40 ° C, Analog command: ±0.1%, 25 ±10 ° C |
| | Output Frequency Resolution | Digital command: 0.01 Hz, Analog command: 0.03 * max. output frequency/60 Hz (±11 bit) |
| | Overload Capacity | 230 V / 460 V model: Normal duty: 120% of rated current can endure for 1 minute during every 5 minutes ; 160% of rated current can endure for 3 seconds during every 30 seconds Heavy duty: 150% of rated current can endure for 1 minute during every 5 minutes ; 180% of rated current can endure for 3 seconds during every 30 seconds 575 V / 690 V model: Light duty: 120% of rated current can endure for 1 minute Normal duty: 120% of rated current can endure for 1 minute, 150% can endure for 3 seconds Heavy duty: 150% of rated current can endure for 1 minute, 180% can endure for 3 seconds |
| | Frequency Setting Signal | +10 V ~ -10 V, 0 ~ +10 V, 4 ~ 20 mA, 0 ~ 20 mA, pulse input |
| | Accel./decel. Time | 0.00 ~ 600.00 / 0.0 ~ 6000.0 Seconds |
| | Main Control Function | Torque control, Speed/torque control switching, Feed forward control, Zero-servo control, Momentary power loss ride thru, Speed search, Over-torque detection, Torque Limit, 16-step speed (Max.), Accel./decel time switch, S-curve accel./decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell, Slip compensation, Torque compensation, JOG frequency, Fault restart, Frequency upper/lower limit settings, DC injection braking at start/stop, High slip braking, Parameter copy PID control (with sleep function), Energy saving control, MODOBUS communication (RS-485 RJ45, Max. 115.2 kbps) |
| Fan Control | 230 V model: VFD150C23A (include) and series above: PMW control; VFD110C23A and below: on/off switch control 460 V model: VFD185C43A (include) and series above: PMW control; VFD150C43A and below: on/off switch control 575 V / 690 V model: PWM control | |
| Protection Characteristics | Motor Protection | Electronic thermal relay protection |
| | Over-current Protection | 230 V / 460 V model: Over-current protection for 240% of rated current (Normal duty) Current clamp (Normal duty: around 170 ~ 175%); (Heavy duty: around 180 ~ 185%) 575 V / 690 V model: Over-current protection for 225% rated current (Normal duty) Current clamp (Light duty: around 128 ~ 141%); (Normal duty: around 170 ~ 175%); (Heavy duty: around 202% ~ 210%) |
| | Over-voltage Protection | The C2000 Series will shut down under below conditions: 230 V: DC bus over 410 V; 460 V: DC bus over 820 V; 575 V / 690 V: DC bus over 1189 V |
| | Over-temperature Protection | Built-in temperature sensor |
| | Stall Prevention | Stall prevention during acceleration, deceleration and running independently |
| | Restart After Instantaneous Power Failure | Parameter setting up to 20 seconds |
| | Grounding Leakage Current Protection | Leakage current is higher than 50% of rated current of the AC motor drive |
| | Short-circuit Current Rating (SCCR) | Per UL508C, the drive is suitable for use on a circuit capable of delivering not more than 100kA symmetrical amperes (rms) when protected by fuses given in the fuse table |
| International Certifications |  | |

Note: EAC Certification is for 230V and 460V models only

Wiring

Wiring Diagram for Frame A ~ C

*Input: 3-phase power

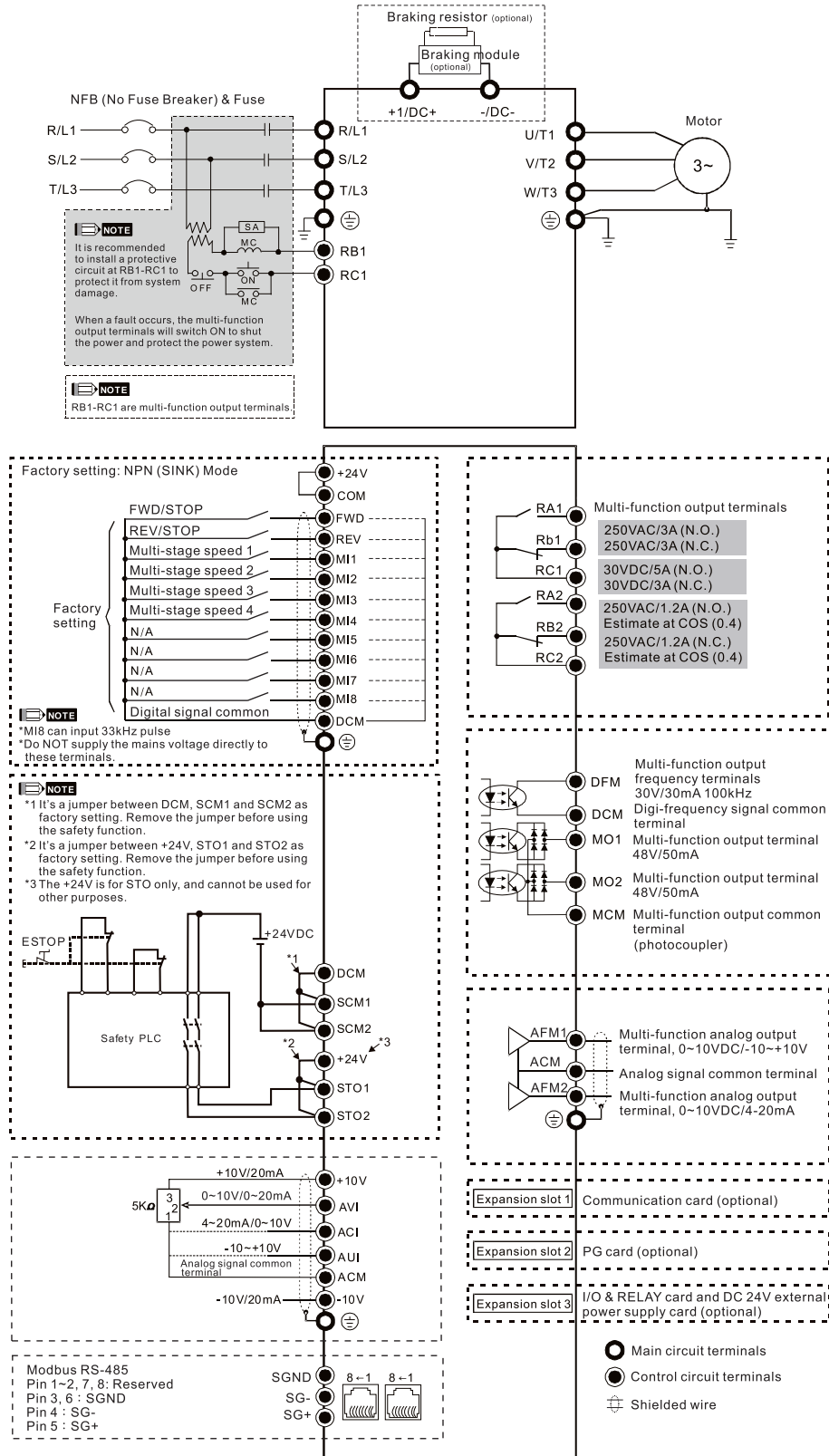


NOTE

It is not recommended to use a power capacitor or automatic power factor regulator (APFR) at the power input side. If the system requires such a device, please make sure a reactor is installed between the drive and the power capacitor or APFR.

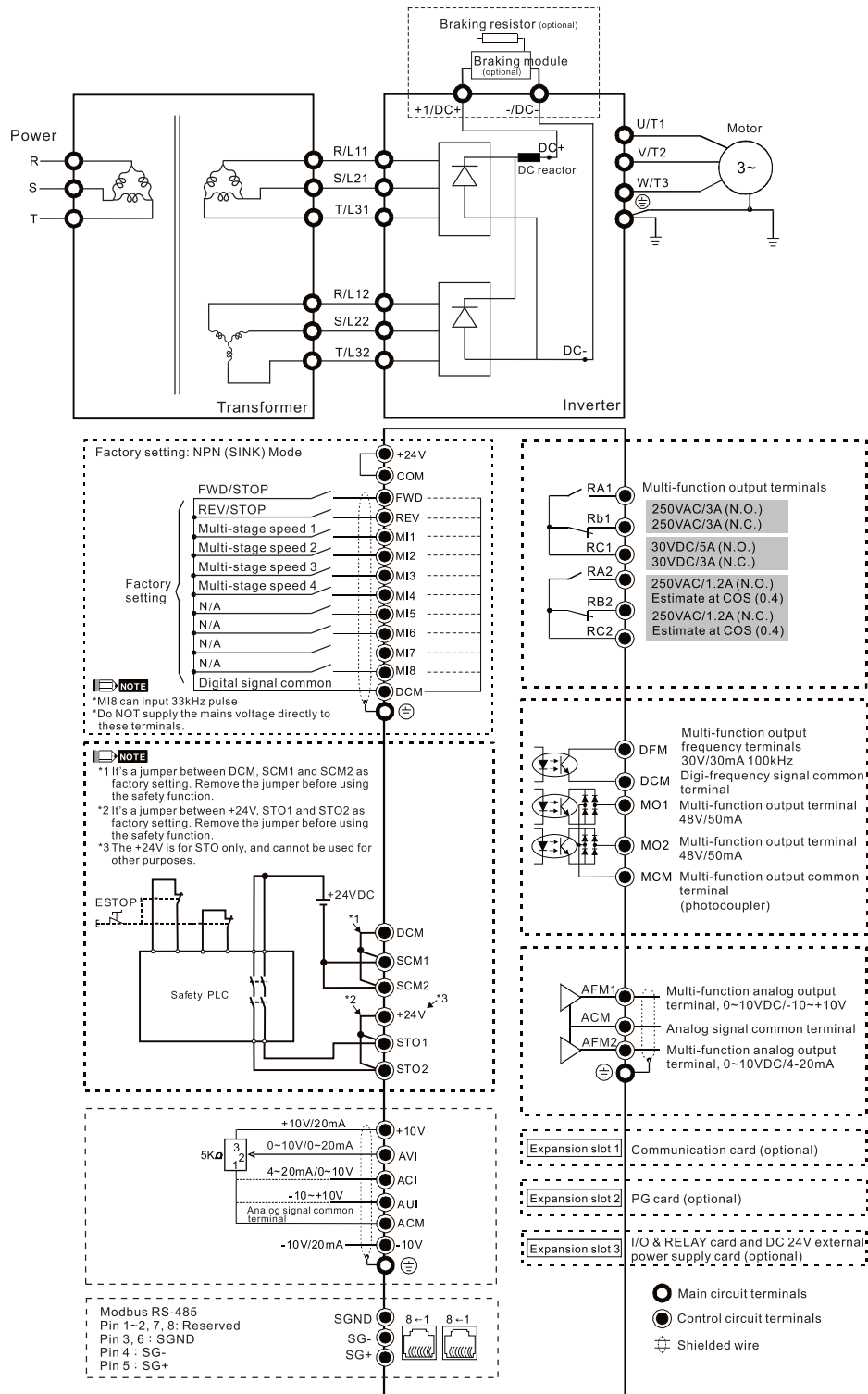
Wiring Diagram for Frame D ~ F

*Input: 3-phase power



Wiring Diagram for Frame G ~ H

*Input: 3-phase power

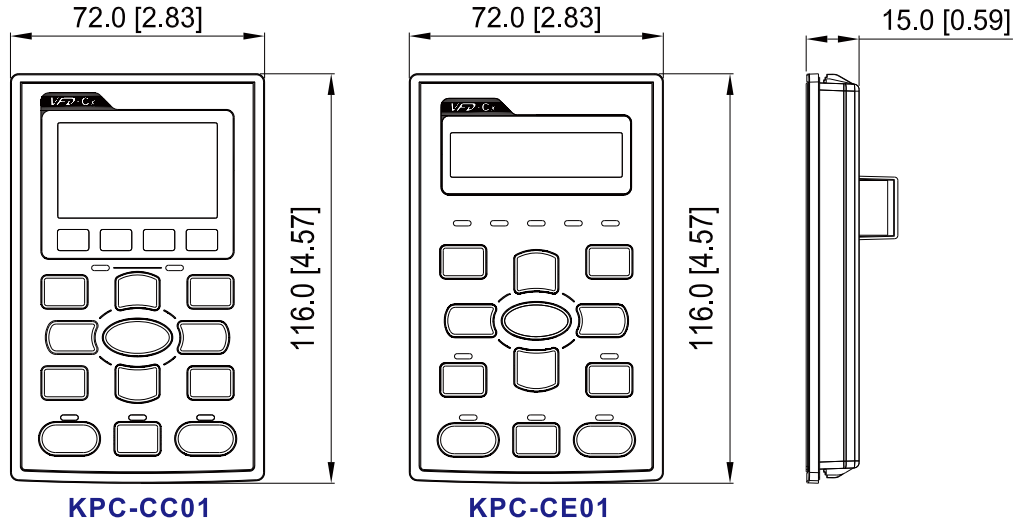


NOTE

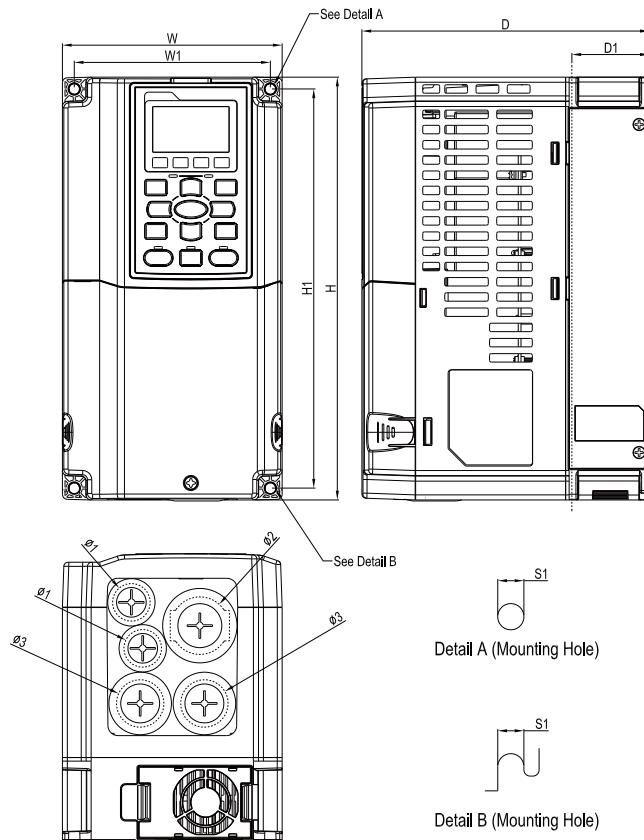
It is not recommended to use a power capacitor or automatic power factor regulator (APFR) at the power input side. If the system requires such a device, please make sure a reactor is installed between the drive and the power capacitor or APFR.

Dimensions

Digital Keypad Unit: mm [inch]



Frame A



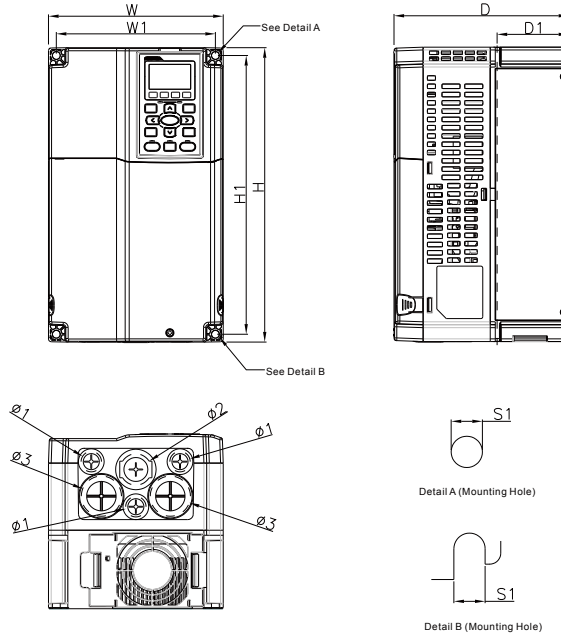
MODEL FRAME_A

- VFD007C23A
- VFD015C23A
- VFD022C23A
- VFD037C23A
- VFD007C43A / 43E
- VFD015C43A / 43E
- VFD022C43A / 43E
- VFD037C43A / 43E
- VFD040C43A / 43E
- VFD055C43A / 43E
- VFD015C53A-21
- VFD022C53A-21
- VFD037C53A-21

| Frame | W | H | D | W1 | H1 | D1* | Ø | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|-------|-------|-------|-------|------|------|------|------|------|
| A1 | mm | 130.0 | 250.0 | 170.0 | 116.0 | 236.0 | 45.8 | 6.2 | 22.2 | 34.0 | 28.0 |
| | inch | 5.12 | 9.84 | 6.69 | 4.57 | 9.29 | 1.80 | 0.24 | 0.87 | 1.34 | 1.10 |

*D1: Flange mount.

Frame B



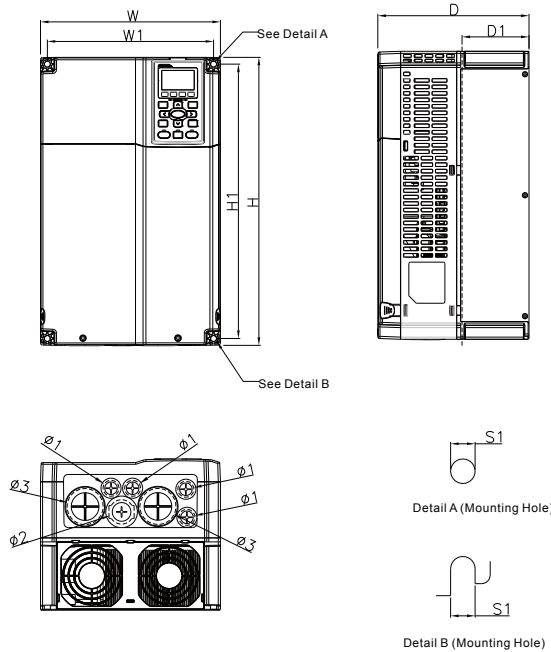
MODEL

VFD055C23A
 VFD075C23A
 VFD110C23A
 VFD075C43A / 43E
 VFD110C43A / 43E
 VFD150C43A / 43E
 VFD055C53A-21
 VFD075C53A-21
 VFD110C53A-21
 VFD150C53A-21

| Frame | W | H | D | W1 | H1 | D1* | S1 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|-------|-------|-------|-------|------|------|------|------|------|
| B1 | mm | 190.0 | 320.0 | 190.0 | 173.0 | 303.0 | 77.9 | 8.5 | 22.2 | 34.0 | 28.0 |
| | inch | 7.48 | 12.60 | 7.48 | 6.81 | 11.93 | 3.07 | 0.33 | 0.87 | 1.34 | 1.10 |

*D1: Flange mount.

Frame C



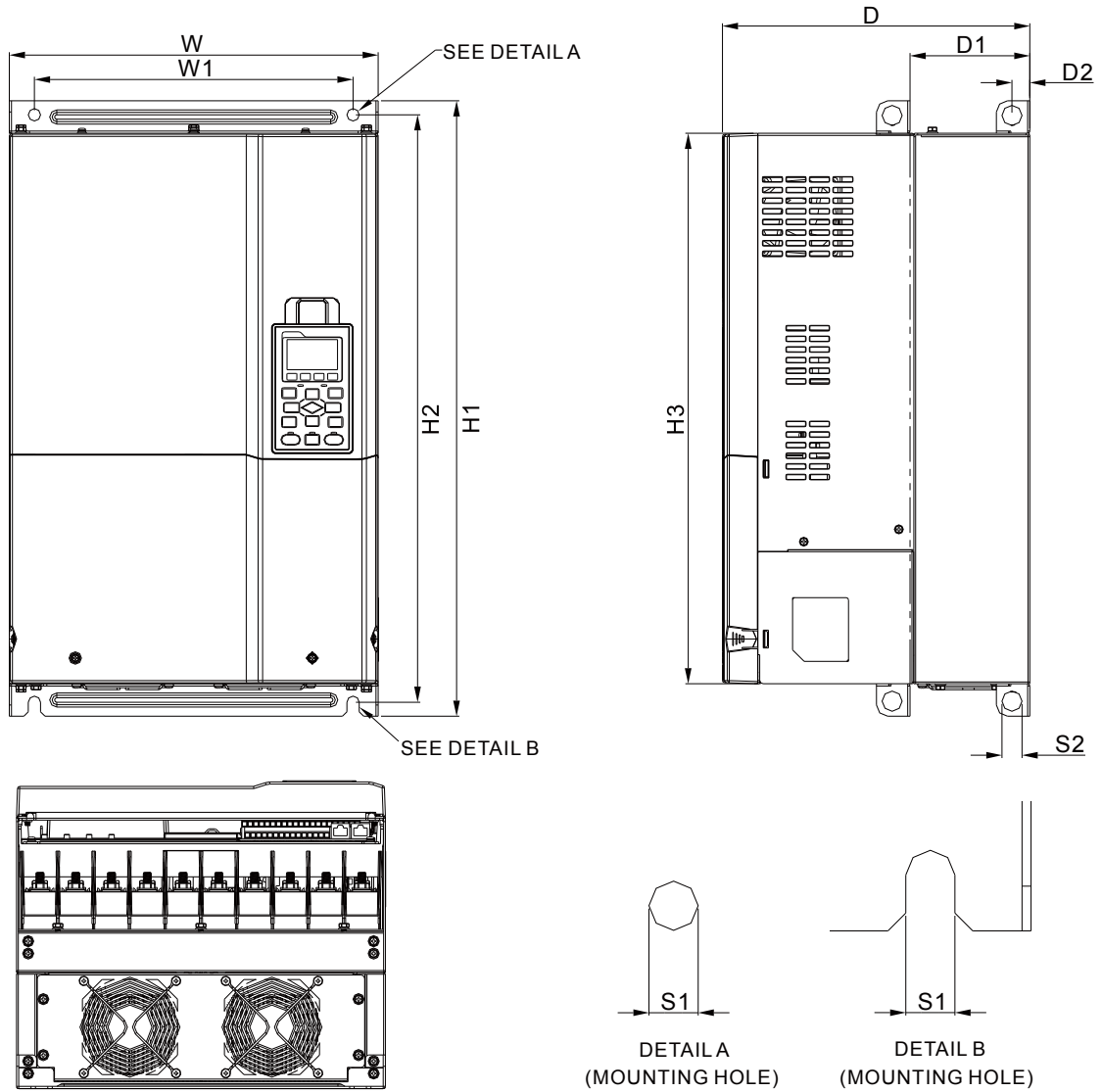
MODEL

VFD150C23A
 VFD185C23A
 VFD220C23A
 VFD185C43A / 43E
 VFD220C43A / 43E
 VFD300C43A / 43E
 VFD185C63B-21
 VFD220C63B-21
 VFD300C63B-21
 VFD370C63B-21

| Frame | W | H | D | W1 | H1 | D1* | S1 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|-------|-------|-------|-------|------|------|------|------|------|
| C1 | mm | 250.0 | 400.0 | 210.0 | 231.0 | 381.0 | 92.9 | 8.5 | 22.2 | 34.0 | 50.0 |
| | inch | 9.84 | 15.75 | 8.27 | 9.09 | 15.00 | 3.66 | 0.33 | 0.87 | 1.34 | 1.97 |

*D1: Flange mount.

Frame D

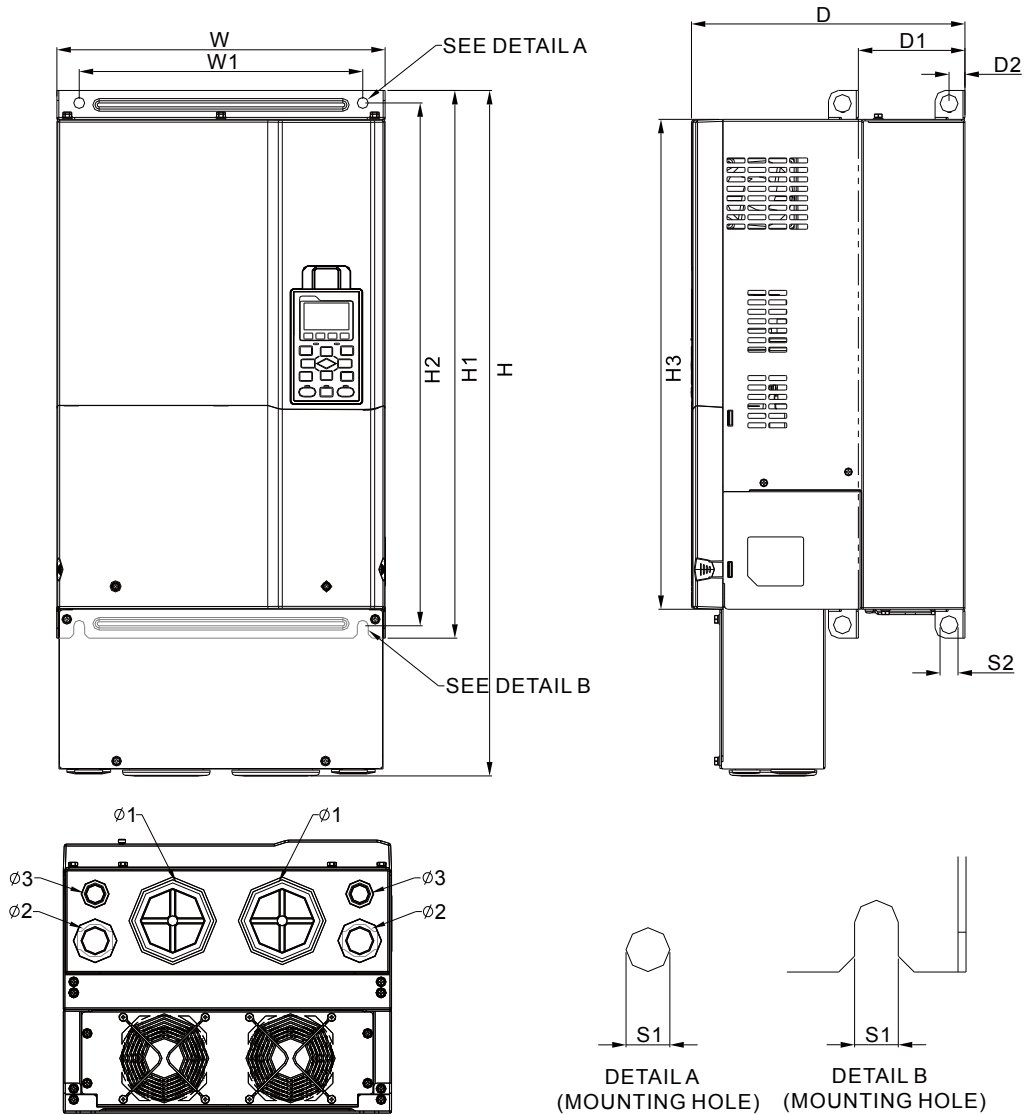


| MODEL | FRAME_D1 | FRAME_D0-1 |
|---------------|----------|------------|
| VFD300C23A | | VFD370C43S |
| VFD370C23A | | VFD450C43S |
| VFD550C43A | | |
| VFD750C43A | | |
| VFD450C63B-00 | | |
| VFD550C63B-00 | | |

| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|---|-------|-------|-------|-------|-------|-------|------|------|------|----|----|---|
| D1 | mm | 330.0 | - | 275.0 | 285.0 | 550.0 | 525.0 | 492.0 | 107.2 | 16.0 | 11.0 | 18.0 | - | - | - |
| | inch | 12.99 | - | 10.83 | 11.22 | 21.65 | 20.67 | 19.37 | 4.22 | 0.63 | 0.43 | 0.71 | - | - | - |
| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | | | | |
| D0-1 | mm | 280.0 | - | 255.0 | 235.0 | 500.0 | 475.0 | 442.0 | 94.2 | 16.0 | 11.0 | 18.0 | | | |
| | inch | 11.02 | - | 10.04 | 9.25 | 19.69 | 18.70 | 17.40 | 3.71 | 0.63 | 0.43 | 0.71 | | | |

*D1: Flange mount.

Frame D

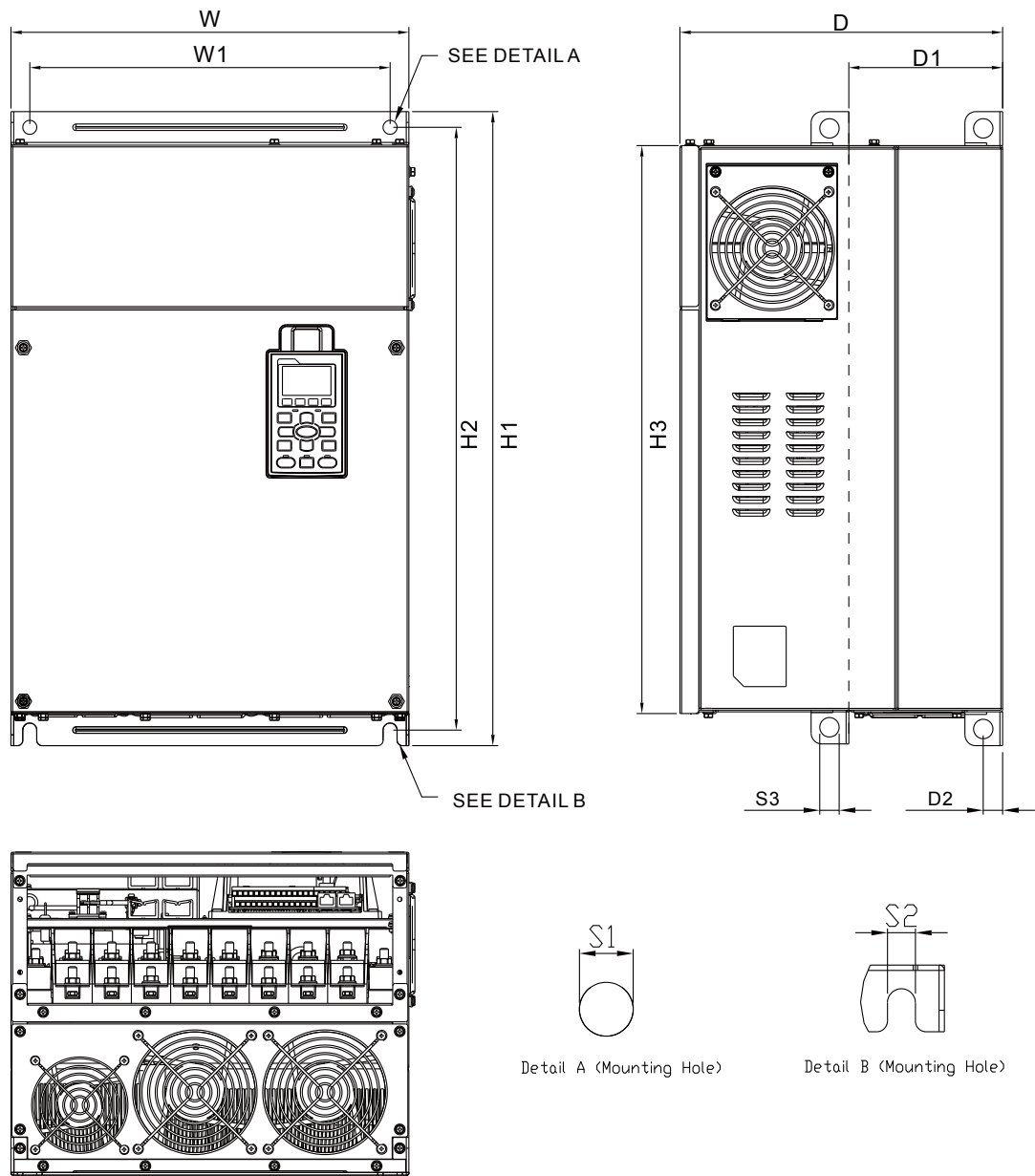


| MODEL | FRAME_D2 | FRAME_D0-2 |
|---------------|----------|------------|
| VFD300C23E | | VFD370C43U |
| VFD370C23E | | VFD450C43U |
| VFD550C43E | | |
| VFD750C43E | | |
| VFD450C63B-21 | | |
| VFD550C63B-21 | | |

| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| D2 | mm | 330.0 | 688.3 | 275.0 | 285.0 | 550.0 | 525.0 | 492.0 | 107.2 | 16.0 | 11.0 | 18.0 | 76.2 | 34.0 | 22.0 |
| | inch | 12.99 | 27.10 | 10.83 | 11.22 | 21.65 | 20.67 | 19.37 | 4.22 | 0.63 | 0.43 | 0.71 | 3.00 | 1.34 | 0.87 |
| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | Ø1 | Ø2 | Ø3 | |
| D0-2 | mm | 280.0 | 614.4 | 255.0 | 235.0 | 500.0 | 475.0 | 442.0 | 94.2 | 16.0 | 11.0 | 18.0 | 62.7 | 34.0 | 22.0 |
| | inch | 11.02 | 24.19 | 10.04 | 9.25 | 19.69 | 18.70 | 17.40 | 3.71 | 0.63 | 0.43 | 0.71 | 2.47 | 1.34 | 0.87 |

*D1: Flange mount.

Frame E



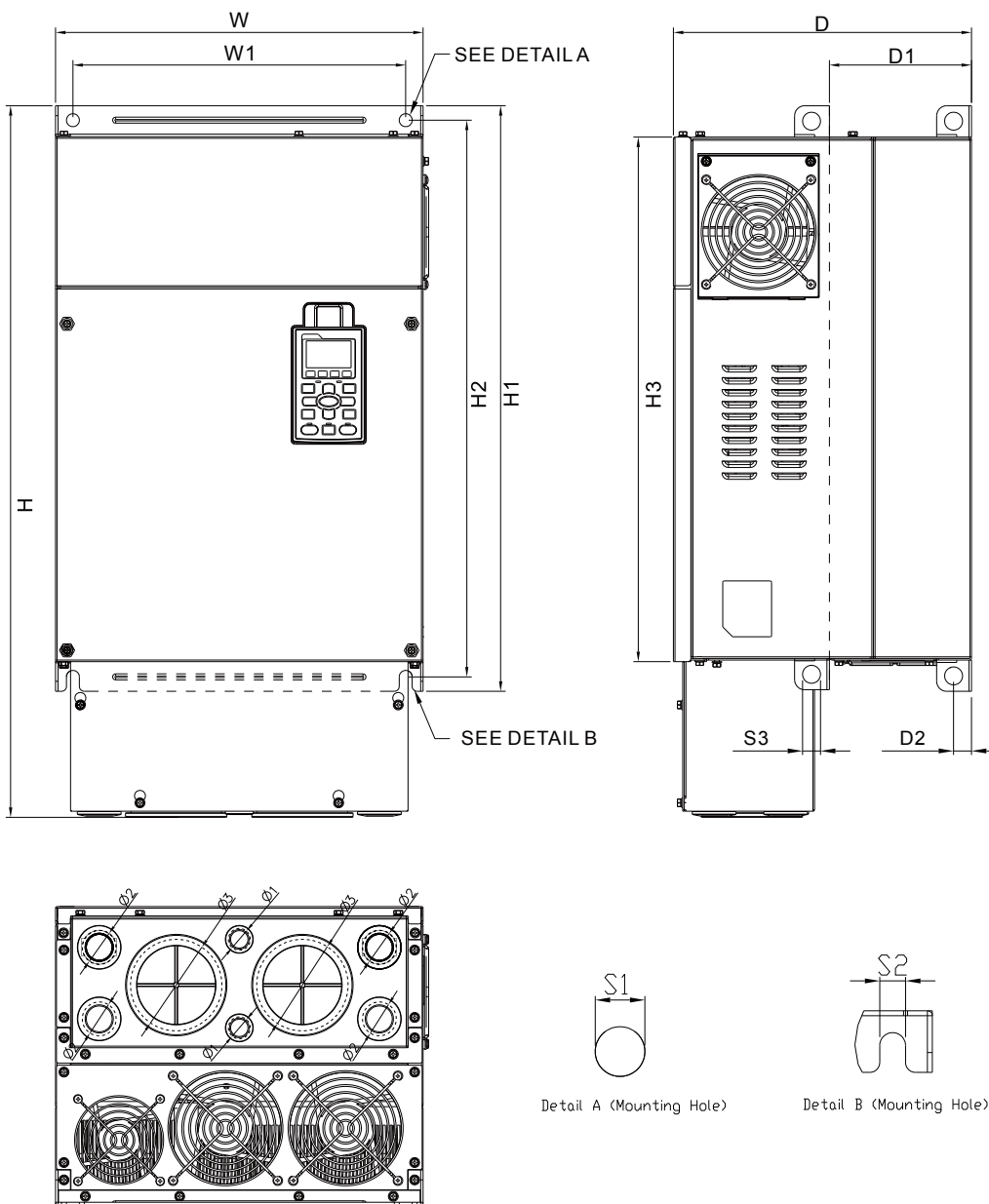
**MODEL
FRAME_E1**

| | |
|-------------|----------------|
| VFD450C23A | VFD750C63B-00 |
| VFD550C23A | VFD900C63B-00 |
| VFD750C23A | VFD1100C63B-00 |
| VFD900C43A | VFD1320C63B-00 |
| VFD1100C43A | |

| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|---|-------|-------|-------|-------|-------|-------|------|------|------|------|----|----|---|
| E1 | mm | 370.0 | - | 300.0 | 335.0 | 589 | 560.0 | 528.0 | 143.0 | 18.0 | 13.0 | 13.0 | 18.0 | - | - | - |
| | inch | 14.57 | - | 11.81 | 13.19 | 23.19 | 22.05 | 20.80 | 5.63 | 0.71 | 0.51 | 0.51 | 0.71 | - | - | - |

*D1: Flange mount.

Frame E



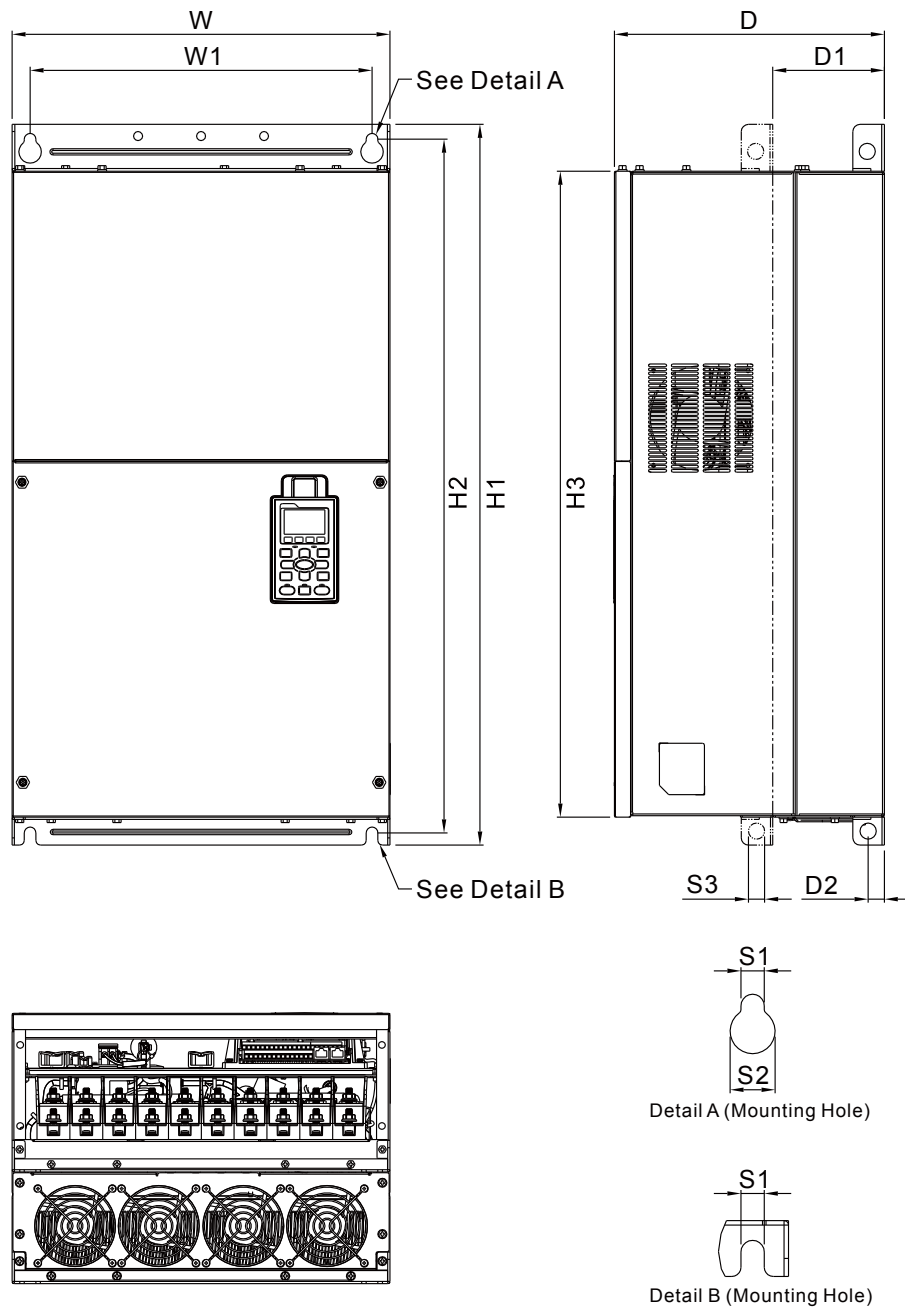
MODEL FRAME_E2

| | |
|-------------|----------------|
| VFD450C23E | VFD750C63B-21 |
| VFD550C23E | VFD900C63B-21 |
| VFD750C23E | VFD1100C63B-21 |
| VFD900C43E | VFD1320C63B-21 |
| VFD1100C43E | |

| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 | |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| E2 | mm | 370.0 | 715.8 | 300.0 | 335.0 | 589.0 | 560.0 | 528.0 | 143.0 | 18.0 | 13.0 | 13.0 | 18.0 | 22.0 | 34.0 | 92.0 |
| | inch | 14.57 | 28.18 | 11.81 | 13.19 | 23.19 | 22.05 | 20.80 | 5.63 | 0.71 | 0.51 | 0.51 | 0.71 | 0.87 | 1.34 | 3.62 |

*D1: Flange mount.

Frame F



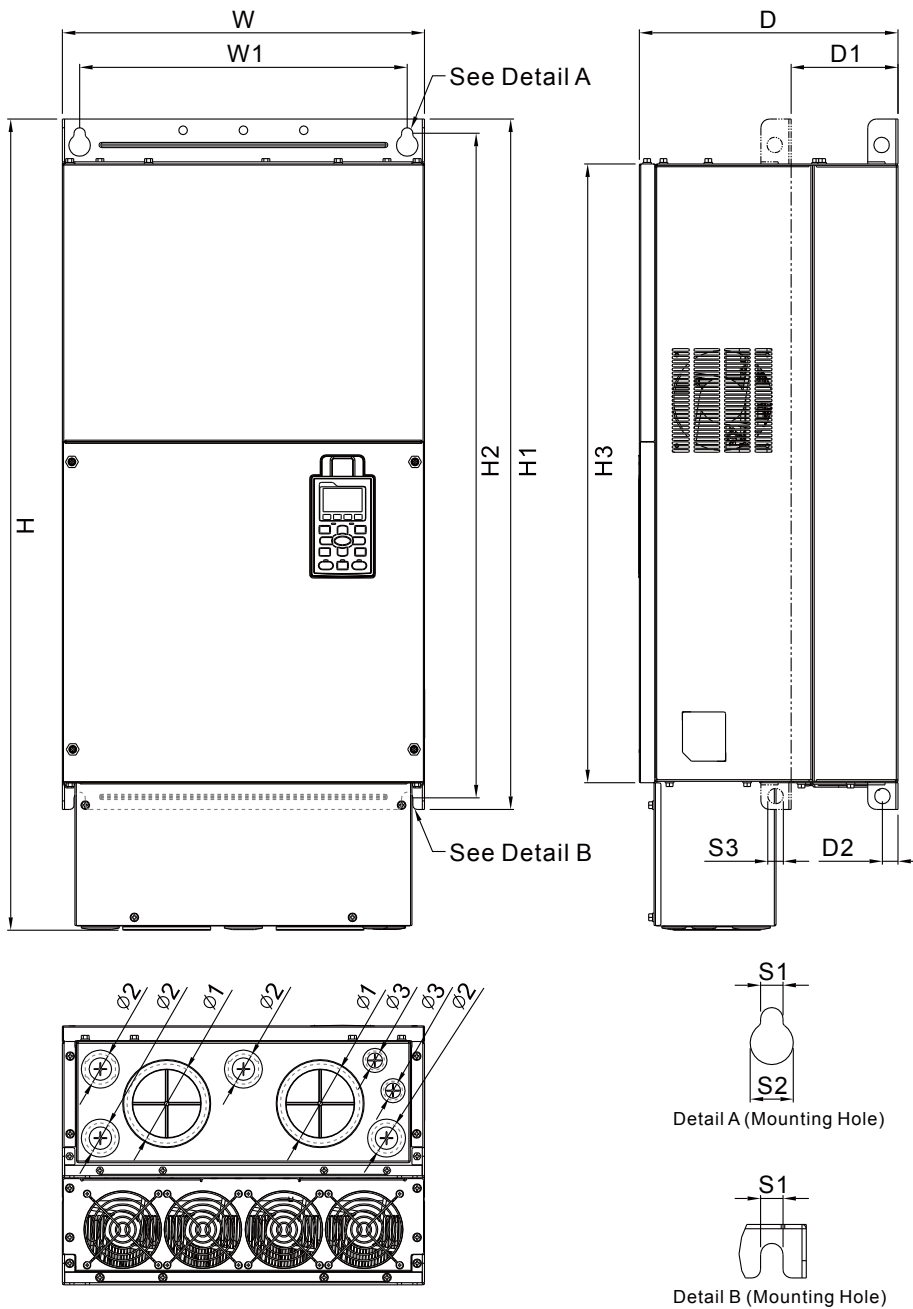
MODEL
FRAME_F1

- VFD900C23A
- VFD1320C43A
- VFD1600C43A
- VFD1600C63B-00
- VFD2000C63B-00

| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 |
|-------|------|-------|---|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| F1 | mm | 420.0 | - | 300.0 | 380.0 | 800.0 | 770.0 | 124.0 | 18.0 | 13.0 | 25.0 | 18.0 | 92.0 | 35.0 | 22.0 |
| | inch | 16.54 | - | 11.81 | 14.96 | 31.50 | 30.32 | 4.88 | 0.71 | 0.51 | 0.98 | 0.71 | 3.62 | 1.38 | 0.87 |

*D1: Flange mount.

Frame F



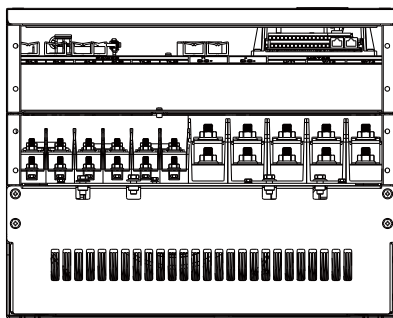
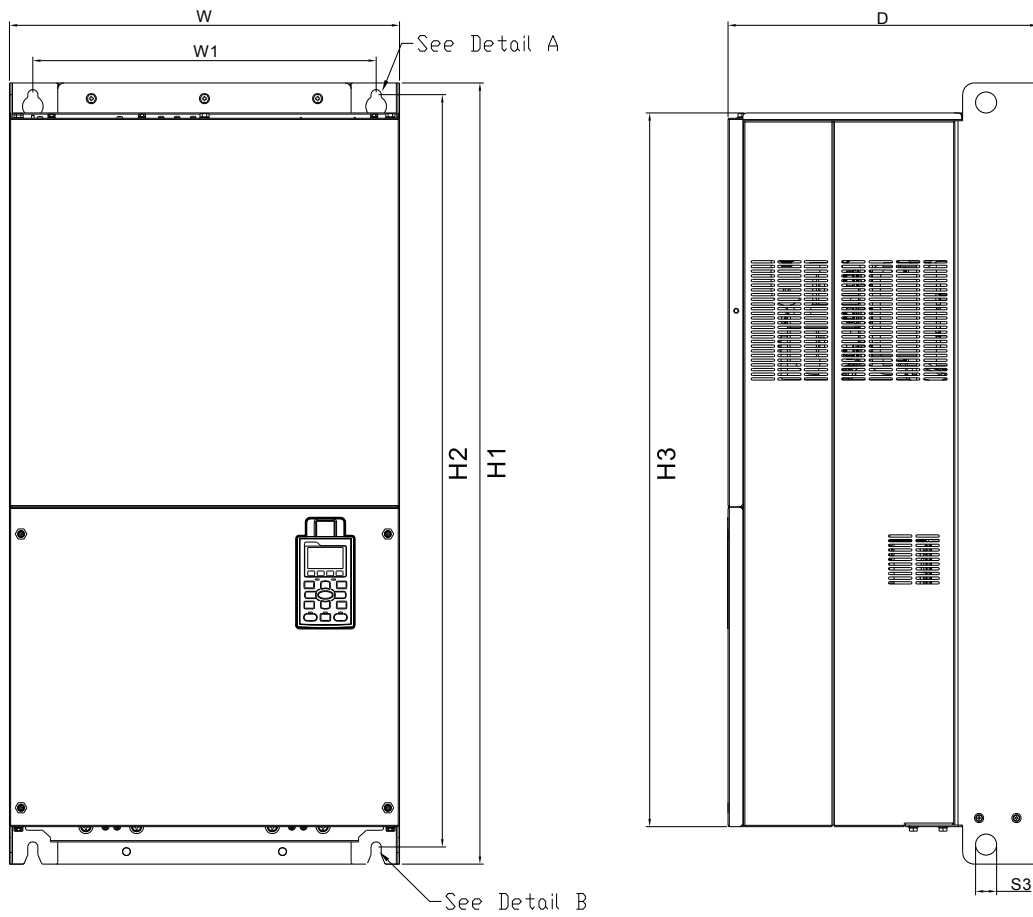
MODEL
FRAME_F2

- VFD900C23E
- VFD1320C43E
- VFD1600C43E
- VFD1600C63B-21
- VFD2000C63B-21

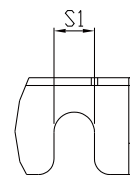
| Frame | W | H | D | W1 | H1 | H2 | H3 | D1* | D2 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 |
|-------|------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| F2 | mm | 420.0 | 940.0 | 300.0 | 380.0 | 800.0 | 770.0 | 124.0 | 18.0 | 13.0 | 25.0 | 18.0 | 92.0 | 35.0 | 22.0 |
| | inch | 16.54 | 37.00 | 11.81 | 14.96 | 31.50 | 30.32 | 28.23 | 4.88 | 0.71 | 0.51 | 0.98 | 3.62 | 1.38 | 0.87 |

*D1: Flange mount.

Frame G



Detail A (Mounting Hole)



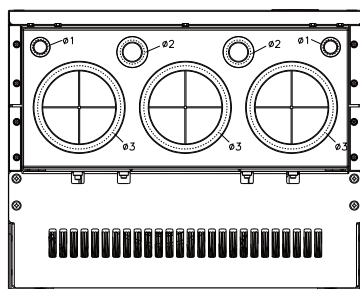
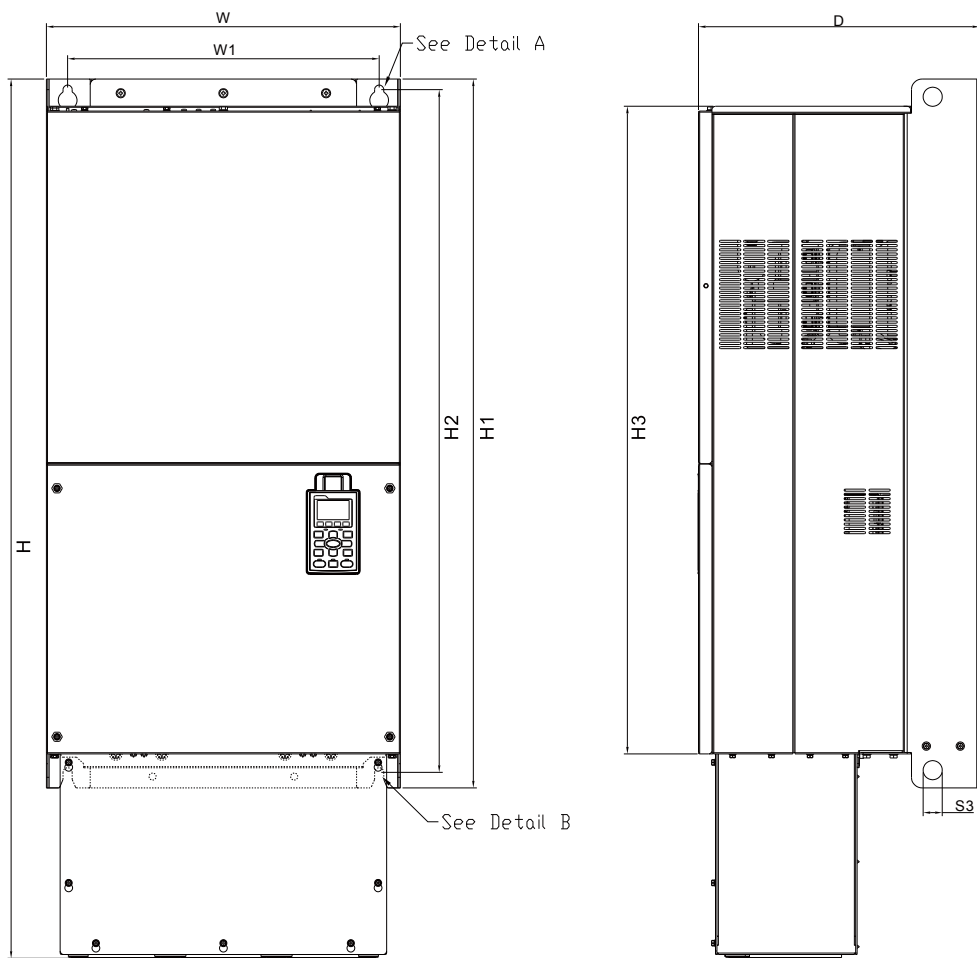
Detail B (Mounting Hole)

MODEL
FRAME_G1

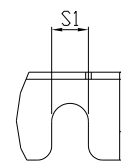
VFD1850C43A
VFD2200C43A
VFD2500C63B-00
VFD3150C63B-00

| Frame | | W | H | D | W1 | H1 | H2 | H3 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 |
|-------|------|-------|---|-------|--------|--------|-------|-------|------|------|------|----|----|----|
| G1 | mm | 500.0 | - | 397.0 | 440.0 | 1000.0 | 963.0 | 913.6 | 13.0 | 26.5 | 27.0 | - | - | - |
| | inch | 19.69 | - | 15.63 | 217.32 | 39.37 | 37.91 | 35.97 | 0.51 | 1.04 | 1.06 | - | - | - |

Frame G



Detail A (Mounting Hole)



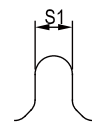
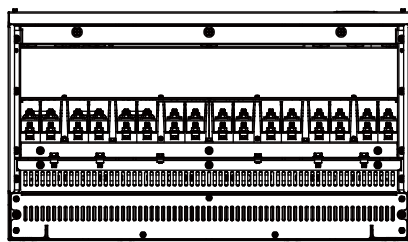
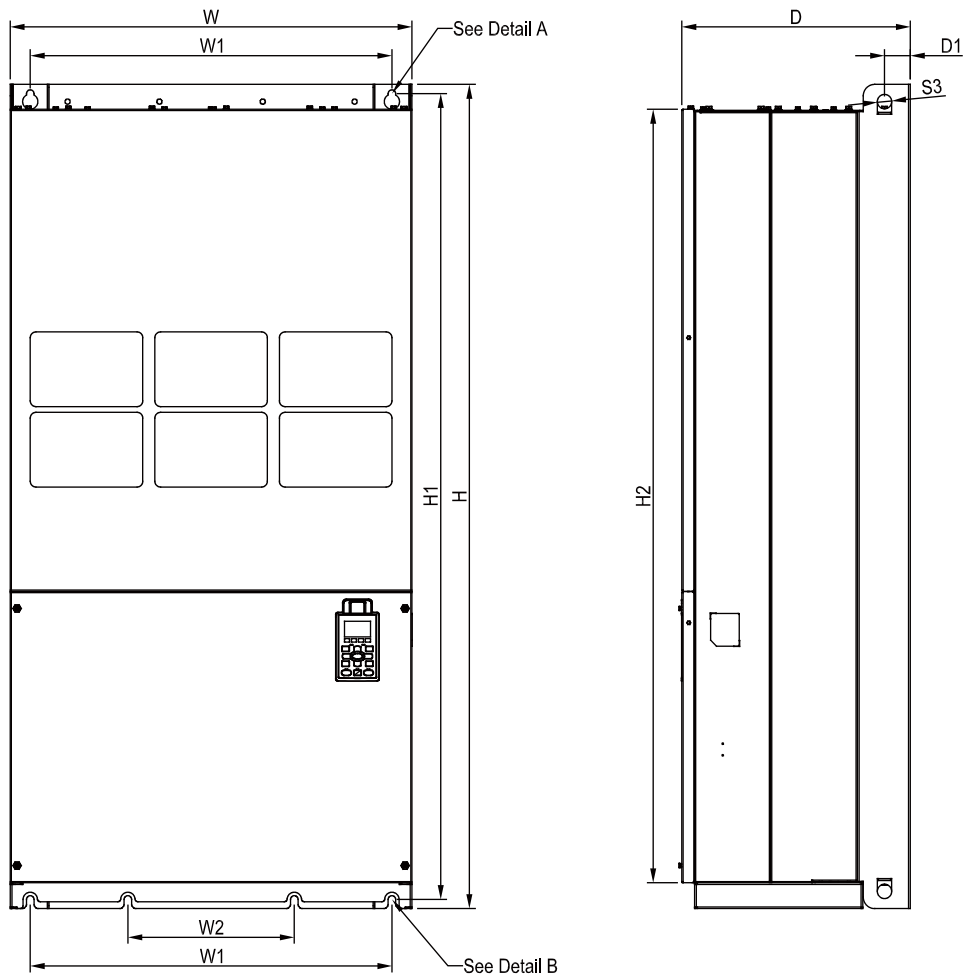
Detail B (Mounting Hole)

MODEL FRAME_G2

VFD1850C43E
VFD2200C43E
VFD2500C63B-21
VFD3150C63B-21

| Frame | | W | H | D | W1 | H1 | H2 | H3 | S1 | S2 | S3 | $\varnothing 1$ | $\varnothing 2$ | $\varnothing 3$ |
|-------|------|-------|--------|-------|--------|--------|-------|-------|------|------|------|-----------------|-----------------|-----------------|
| G2 | mm | 500.0 | 1240.2 | 397.0 | 440.0 | 1000.0 | 963.0 | 913.6 | 13.0 | 26.5 | 27.0 | 22.0 | 34.0 | 117.5 |
| | inch | 19.69 | 48.83 | 15.63 | 217.32 | 39.37 | 37.91 | 35.97 | 0.51 | 1.04 | 1.06 | 0.87 | 1.34 | 4.63 |

Frame H1



See Detail A (Mounting Hole)

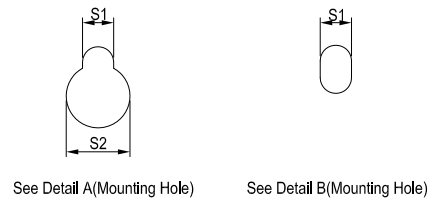
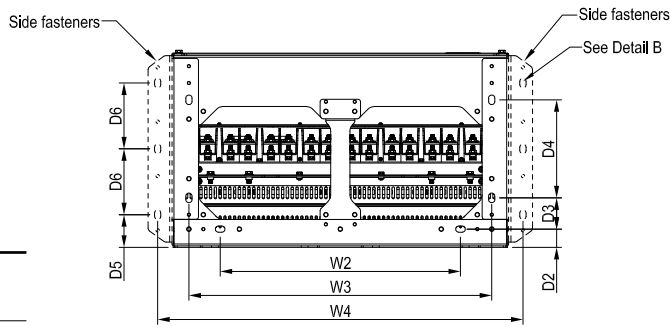
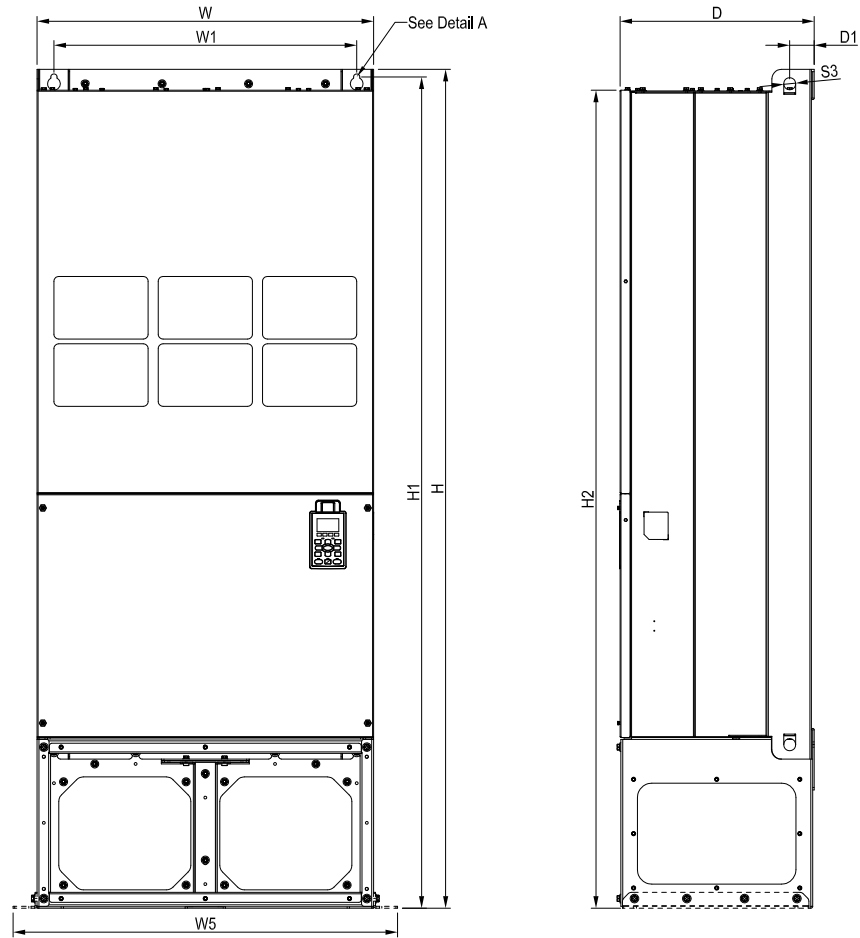
See Detail B (Mounting Hole)

MODEL FRAME_H1

VFD2800C43A
VFD3150C43A
VFD3550C43A
VFD4500C43A

| Frame | W | H | D | W1 | W2 | W3 | W4 | W5 | W6 | H1 | H2 | H3 | H4 |
|-------|------|-------|--------|-------|-------|-------|----|------|------|--------|--------|----|----|
| H1 | mm | 700.0 | 1435.0 | 398.0 | 630.0 | 290.0 | - | - | - | 1403.0 | 1346.6 | - | - |
| | inch | 27.56 | 56.50 | 15.67 | 24.80 | 11.42 | - | - | - | 55.24 | 53.02 | - | - |
| Frame | H5 | D1 | D2 | D3 | D4 | D5 | D6 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 |
| H1 | mm | - | 45.0 | - | - | - | - | 13.0 | 26.5 | 25.0 | - | - | - |
| | inch | - | 1.77 | - | - | - | - | 0.51 | 1.04 | 0.98 | - | - | - |

Frame H2

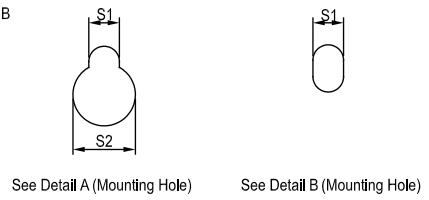
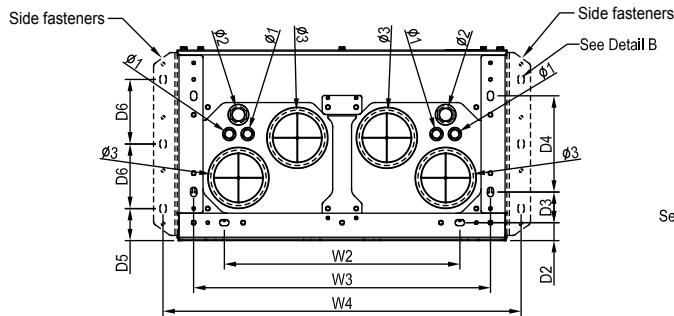
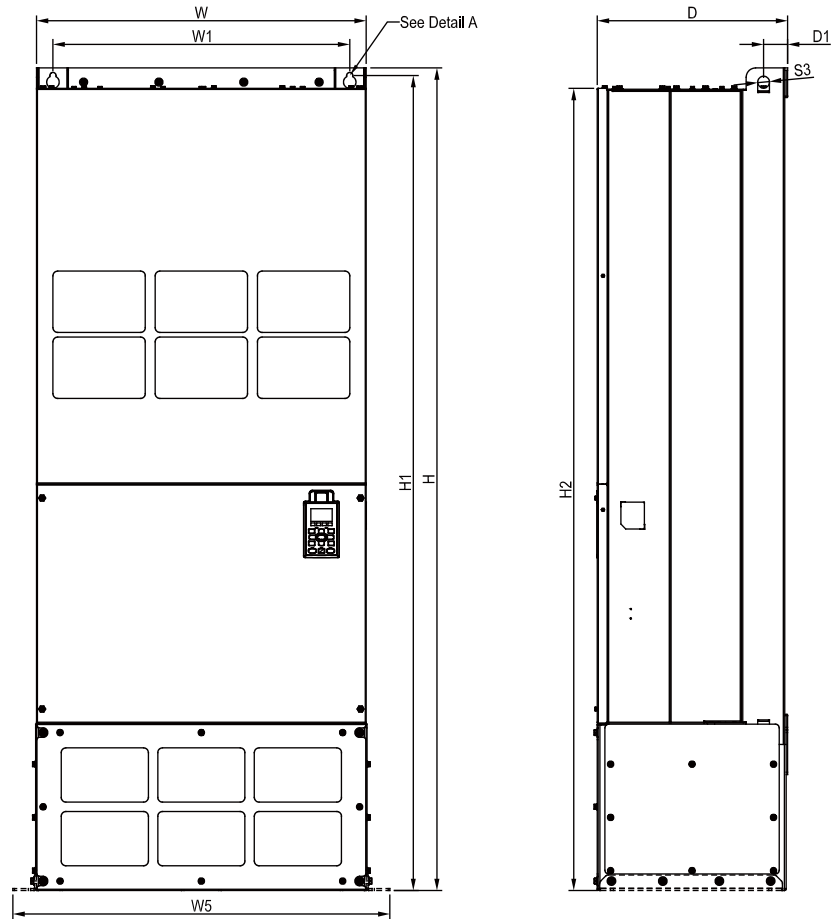


**MODEL
FRAME_H2**

- VFD2800C43E-1
- VFD3150C43E-1
- VFD3550C43E-1
- VFD4500C43E-1

| Frame | W | H | D | W1 | W2 | W3 | W4 | W5 | W6 | H1 | H2 | H3 | H4 | |
|-------|------|-------|--------|-------|-------|-------|-------|-------|-------|------|--------|--------|----|---|
| H2 | mm | 700.0 | 1745.0 | 404.0 | 630.0 | 500.0 | 630.0 | 760.0 | 800.0 | - | 1729.0 | 1701.6 | - | - |
| | inch | 27.56 | 68.70 | 15.9 | 24.80 | 19.69 | 24.80 | 29.92 | 31.50 | - | 68.07 | 66.99 | - | - |
| Frame | H5 | D1 | D2 | D3 | D4 | D5 | D6 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 | |
| H2 | mm | - | 51.0 | 38.0 | 65.0 | 204.0 | 68.0 | 137.0 | 13.0 | 26.5 | 25.0 | - | - | |
| | inch | - | 2.0 | 1.50 | 2.56 | 8.03 | 2.68 | 5.4 | 0.51 | 1.04 | 0.98 | - | - | |

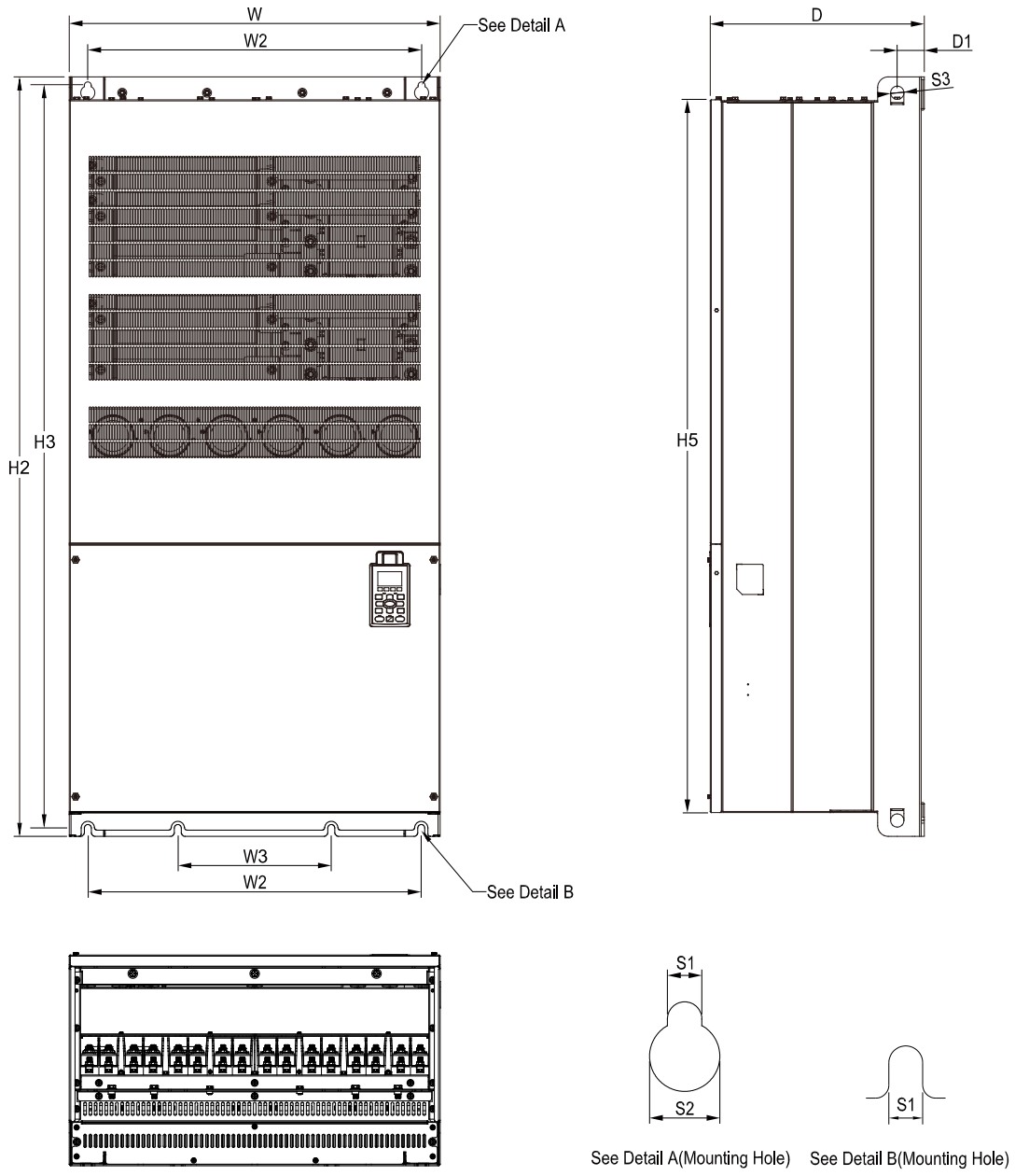
Frame H3



MODEL
FRAME_H3
VFD2800C43E
VFD3150C43E
VFD3550C43E
VFD4500C43E

| Frame | W | H | D | W1 | W2 | W3 | W4 | W5 | W6 | H1 | H2 | H3 | H4 | |
|-------|------|-------|--------|-------|-------|-------|-------|-------|------|--------|--------|------|------|-------|
| H3 | mm | 700.0 | 1745.0 | 404.0 | 630.0 | 500.0 | 630.0 | 760.0 | - | 1729.0 | 1701.6 | - | - | |
| | inch | 27.56 | 68.70 | 15.9 | 24.80 | 19.69 | 24.80 | 29.92 | - | 68.07 | 66.99 | - | - | |
| Frame | H5 | D1 | D2 | D3 | D4 | D5 | D6 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 | |
| H3 | mm | - | 51.0 | 38.0 | 65.0 | 204.0 | 68.0 | 137.0 | 13.0 | 26.5 | 25.0 | 22.0 | 34.0 | 117.5 |
| | inch | - | 2.0 | 1.50 | 2.56 | 8.03 | 2.68 | 5.4 | 0.51 | 1.04 | 0.98 | 0.87 | 1.34 | 4.63 |

690 V Frame H1

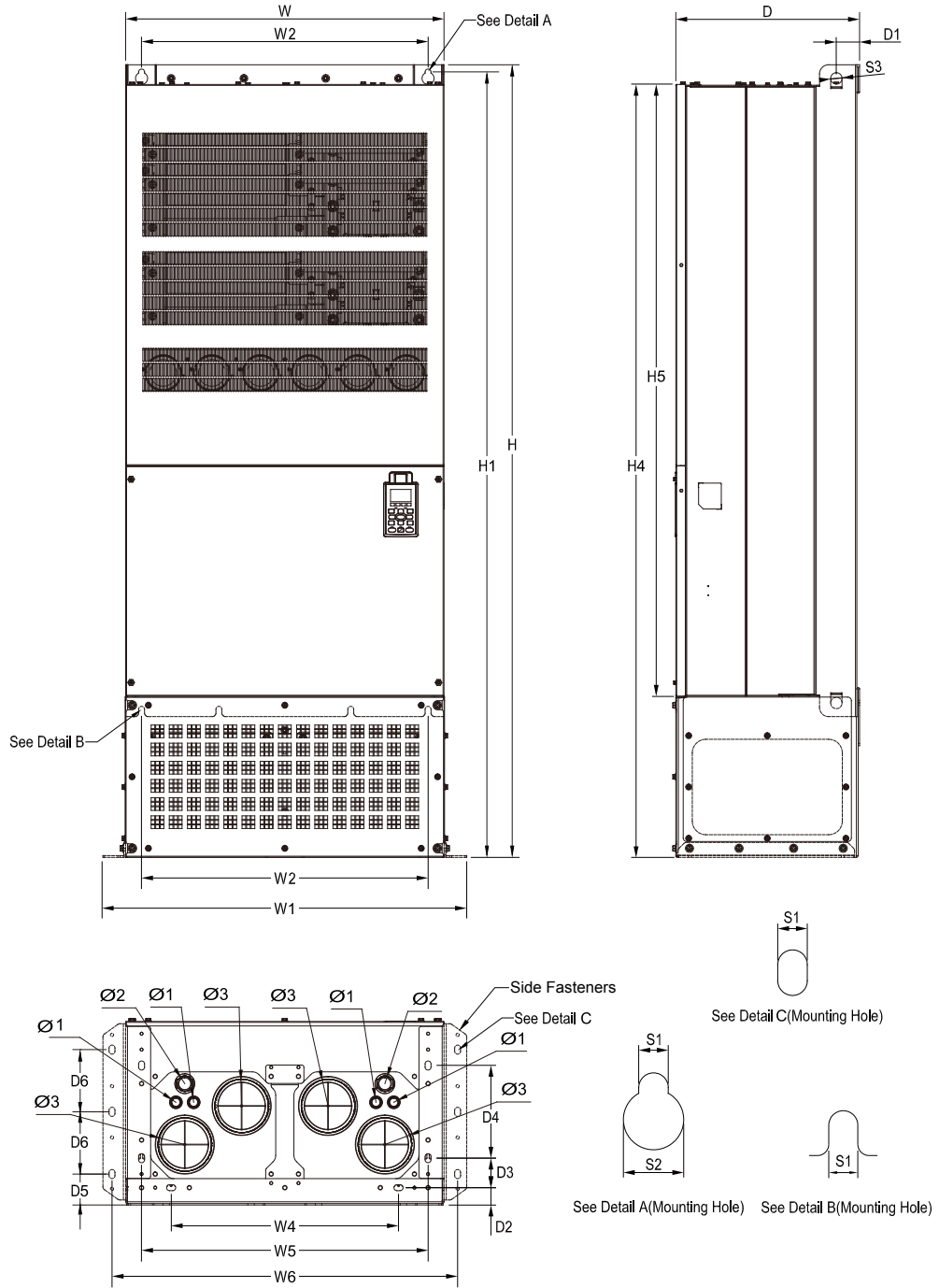


MODEL
690V FRAME_H1

- VFD4000C63B-00
- VFD4500C63B-00
- VFD5600C63B-00
- VFD6300C63B-00

| Frame | W | H | D | W1 | W2 | W3 | W4 | W5 | W6 | H1 | H2 | H3 | H4 |
|-------|------|--------|------|-------|----|-------|-------|------|------|------|--------|--------|----|
| H1 | mm | 700.0 | - | 398.0 | - | 630.0 | 290.0 | - | - | - | 1435.0 | 1403.0 | - |
| | inch | 27.56 | - | 15.67 | - | 24.80 | 11.42 | - | - | - | 56.50 | 55.24 | - |
| Frame | H5 | D1 | D2 | D3 | D4 | D5 | D6 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 |
| H1 | mm | 1346.6 | 45.0 | - | - | - | - | 13.0 | 26.5 | 25.0 | - | - | - |
| | inch | 53.02 | 1.77 | - | - | - | - | 0.51 | 1.04 | 0.98 | - | - | - |

690 V Frame H2




MODEL
690V FRAME_H2

- VFD4000C63B-21
- VFD4500C63B-21
- VFD5600C63B-21
- VFD6300C63B-21

| Frame | W | H | D | W1 | W2 | W3 | W4 | W5 | W6 | H1 | H2 | H3 | H4 | |
|-------|------|--------|--------|-------|-------|-------|------|-------|-------|-------|--------|------|------|--------|
| H2 | mm | 700.0 | 1745.0 | 404.0 | 800.0 | 630.0 | - | 500.0 | 630.0 | 760.0 | 1729.0 | - | - | 1701.6 |
| | inch | 27.56 | 68.70 | 15.91 | 31.50 | 24.80 | - | 19.69 | 24.80 | 29.92 | 68.07 | - | - | 66.99 |
| Frame | H5 | D1 | D2 | D3 | D4 | D5 | D6 | S1 | S2 | S3 | Ø1 | Ø2 | Ø3 | |
| H2 | mm | 1346.6 | 51.0 | 38.0 | 65.0 | 204.0 | 68.0 | 137.0 | 13.0 | 26.5 | 25.0 | 22.0 | 34.0 | 117.5 |
| | inch | 53.02 | 2.01 | 1.50 | 2.56 | 8.03 | 2.68 | 5.39 | 0.51 | 1.04 | 0.98 | 0.87 | 1.34 | 4.63 |

Accessories


EMC-PG01L / EMC-PG02L



Set by Pr.10-00 ~ 10-02

| Terminals | | Description |
|-----------|-------------------------------|---|
| PG1 | VP | Output voltage for power: +5V/+12V ± 5% (use FSW3 to switch +5V/+12V) Max. output current: 200mA |
| | DCM | Common for power and signal |
| | A1, /A1, B1, /B1, Z1, /Z1 | Encoder input signal (Line Driver) Open collector input: +5 V / +24 V (Note1) 1-phase or 2-phase input Max. input frequency: EMC-PG01L: 300KHz; EMC-PG02L: 30KHz |
| PG2 | A2, /A2, B2, /B2 | Pulse input signal (Line Driver or Open Collector) Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input Max. input frequency: EMC-PG01L: 300KHz; EMC-PG02L: 30KHz |
| PG OUT | AO, /AO, BO, /BO, ZO, /ZO, SG | PG card output signals. Division frequency function: 1 ~ 255 times Max. output voltage for Line driver: 5V _{DC} Max. output current: 50 mA Max. output frequency: EMC-PG01L: 300KHz; EMC-PG02L: 30KHz SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained. |


EMC-PG01O / EMC-PG02O



Set by Pr.10-00 ~ 10-02

| Terminals | | Description |
|-----------|---------------------------|--|
| PG1 | VP | Output voltage for power: +5V/+12V ± 5% (use FSW3 to switch +5V/+12V) Max. output current: 200mA |
| | DCM | Common for power and signal |
| | A1, /A1, B1, /B1, Z1, /Z1 | Encoder input signal (Line Driver or Open Collector) Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input Max. input frequency: EMC-PG01O: 300KHz; EMC-PG02O: 30KHz |
| PG2 | A2, /A2, B2, /B2 | Pulse input signal (Line Driver or Open Collector) Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input Max. input frequency: EMC-PG01O: 300KHz; EMC-PG02O: 30KHz |
| PG OUT | V+, /V- | Needs external power source for PG OUT circuit. Input voltage of power: +12V ~ +24V |
| | V- | Negative power supply input |
| | A/O, B/O, Z/O | PG card output signals. Division frequency function: 1 ~ 255 times Add a pull-up resistor to the open collector output signals to avoid signal interferences. [Three pull-up resistors are included in the package (1.8KΩ/1W)] Max. Output current: 20mA Max output frequency: EMC-PG01O: 300KHz; EMC-PG02O: 30KHz |

EMC-PG01R




Set by Pr.10-00 ~ 10-02

| Terminals | | Description |
|-----------|-------------------------------|--|
| PG1 | R1- R2 | Resolver output power 7V _{rms} , 10kHz |
| | S1, S2, S3, S4 | Resolver input signal 3.5 ± 0.175V _{rms} , 10kHz |
| PG2 | A2, /A2, B2, /B2 | Pulse input signal (Line Driver or Open Collector) Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input; Max. input frequency: 300KHz |
| PG OUT | AO, /AO, BO, /BO, ZO, /ZO, SG | PG card output signals. Division frequency function: 1 ~ 255 times Max. output voltage for Line driver: 5V _{DC} Max. output current: 50 mA Max. output frequency: 300KHz SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained. |


▪ EMC-PG01U / EMC-PG02U

FJMP1 : Standard UVW Output Encoder; : Delta Encoder


| | | Terminals | Description |
|--|-------------------------------|---|--|
|  <p>Set by Pr.10-00 ~ 10-02</p> | PG1 | VP | Output voltage for power: +5V/+12V ± 5% (use FSW3 to switch +5V/+12V) Max. output current: 200 mA |
| | | DCM | Common for power and signal |
| | | A1, /A1, B1, /B1, Z1, /Z1 | Encoder input signal (Line Driver) 1-phase or 2-phase input. Max. input frequency: 300 KHz |
| | | U1, /U1, V1, /V1, W1, /W1 | Encoder input signal |
| | PG2 | A2, /A2, B2, /B2 | Pulse input signal Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input; Max. input frequency: 300KHz |
| PG OUT | AO, /AO, BO, /BO, ZO, /ZO, SG | PG card output signals. Division frequency function: 1 ~ 255 times Max. output voltage for Line driver: 5V _{DC} Max. output current: 50 mA Max. output frequency: 300KHz SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained. | |

Note 1: For the Open Collector, set input voltage to 5 ~ 15 mA and install a pull-up resistor
 [5 V] Recommend pull-up resistor: 100 ~ 220 Ω, 1/2 W and above
 [12 V] Recommend pull-up resistor: 510 ~ 1.35 KΩ, 1/2 W and above
 [24 V] Recommend pull-up resistor: 1.8K ~ 3.3 KΩ, 1/2 W and above


▪ EMC-D42A

| | | Terminals | Description |
|---|-------------|--|-------------|
|  <p>I/O Extension Card</p> | COM | Common for multi-function input terminals Select SINK (NPN)/SOURCE (PNP) in J1 jumper/external power supply | |
| | MI10 ~ MI13 | Refer to Pr. 02-26 ~ Pr. 02-29 to program the multi-function inputs MI10 ~ MI13. Internal power is applied from terminal E24: +24V _{DC} ± 5% 200 mA, 5 W External power +24 V _{DC} : max. voltage 30 V _{DC} , min. voltage 19 V _{DC} , 30 W ON: the activation current is 6.5 mA; OFF: leakage current tolerance is 10 μA | |
| | MO10 ~ MO11 | Multi-function output terminals (photocoupler) Duty-cycle: 50%; Max. output frequency: 100 Hz Max. current: 50 mA; Max. voltage: 48 V _{DC} | |
| | MXM | Common for multi-function output terminals MO10, MO11 (photocoupler) Max 48 V _{DC} 50 mA | |


▪ EMC-D611A

| | | Terminals | Description |
|---|-------------|--|-------------|
|  <p>I/O Extension Card</p> | AC | AC power common for multi-function input terminal (Neutral) | |
| | MI10 ~ MI15 | Refer to Pr. 02-26 ~ Pr. 02-31 for multi-function input selection Input voltage: 100 ~ 130 V _{AC} ; Input frequency: 57 ~ 63 Hz Input impedance: 27 KΩ Terminal response time: ON: 10 ms; OFF: 20 ms | |


EMC-R6AA

| | Terminals | Description |
|--|--|--|
|  <p>Relay Extension Card</p> | <p>RA10 ~ RA15 RC10 ~ RC15</p> | <p>Refer to Pr. 02-36 ~ Pr. 02-41 for multi-function output selection</p> <p>Resistive load: 3A (N.O.) / 250 V_{AC} 5A (N.O.) / 30 V_{DC}</p> <p>Inductive load (COS 0.4) 2.0A (N.O.) / 250 V_{AC} 2.0A (N.O.) / 30 V_{DC}</p> <p>It is used to output each monitor signal, such as for drive in operation, frequency attained or overload indication.</p> |

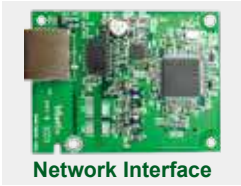
EMC-A22A

| | Terminals | Description |
|---|--------------------------------------|---|
|  <p>Analog I/O extension card</p> | <p>AVI10 AVI11</p> | <p>Refer to Pr. 14-00 ~ Pr. 14-01 for function selection (input), and Pr. 14-18 ~ Pr. 14-19 for mode selection.</p> <p>There are two sets of AVI port, SSW3(AVI10) and SSW4(AVI11), which can be switched to AVI or ACI.</p> <p>AVI: Input 0 ~ 10V ACI: Input 0 ~ 20mA / 4 ~ 20mA</p> |
| | <p>AFM10 AFM11</p> | <p>Refer to Pr. 14-12 ~ Pr. 14-13 for function selection (output), and Pr. 14-36 ~ Pr. 14-37 for mode selection.</p> <p>There are two sets of AFM port, SSW1(AFM10) and SSW2(AFM11), which can be switched to AVO or ACO.</p> <p>AVO: Output 0 ~ 10.00V ACO: Output 0 ~ 20.0mA / 4.0 ~ 20.0mA</p> |
| | <p>ACM</p> | <p>Analog signal common terminal</p> |

EMC-BPS01

| | Terminals | Description |
|--|-----------------------|---|
|  <p>24V Power Shift Card</p> | <p>24V GND</p> | <p>When the AC motor drive power is off, the external power supply card provides external power to the network system, PLC function, and other functions to allow continued operations.</p> <p>Input power: 24 V_{DC} ±5% Maximum input current: 0.5A</p> <p>Note: Do not connect the control terminal +24V (Digital control signal common: SOURCE) directly to the EMC-BPS01 input terminal 24V. Do not connect control terminal GND directly to the EMC-BPS01 input terminal GND.</p> |

▪ CMC-EIP01



Network Interface

Features

- ▶ Support EtherNet/IP and MODBUS TCP protocol
- ▶ User-defined parameter mapping
- ▶ IP Filter, basic firewall function

Network Interface

| | | | |
|----------------------------|-----------------------------|---------------------------|--|
| Interface | RJ-45 with Auto MDI/MDIX | Transmission speed | 10/100Mbps Auto-Detect |
| Number of ports | 1 Port | Network protocol | ICMP, IP, TCP, UDP, DHCP, BOOTP, SMTP, EtherNet/IP, Modbus TCP |
| Transmission method | IEEE 802.3, IEEE 802.3u | | |
| Transmission cable | Category 5e shielding 100 M | | |

▪ CMC-EC01

NEW



Features

- ▶ Supports EthernetCAT protocol
- ▶ Supports standard CiA402 speed mode
- ▶ Supports SDO (Service Data Objects) function:
 - To write motor drive parameters
 - To read motor drive information
- ▶ Auto shutdown function for interruptions during data transmission

Network Interface

| | | | |
|----------------------------|-----------------------------|---------------------------|----------|
| Interface | RJ-45 | Transmission speed | 100Mbps |
| Number of ports | 2 Ports | Network protocol | EtherCAT |
| Transmission method | IEEE 802.3, IEEE 802.3u | | |
| Transmission cable | Category 5e shielding 100 M | | |

▪ CMC-PN01

NEW



Features

- ▶ Supports PROFINET IO device
- ▶ Supports synchronous data transmission and synchronous parameter access
- ▶ Provides GSDML file for PROFINET communication

Network Interface

| | | | |
|----------------------------|------------|---------------------------|----------------------------|
| Interface | RJ-45 | Transmission Cable | Category 5e shielding 100M |
| Number of Ports | 2 Ports | Transmission Speed | 10/100 Mbps auto-negotiate |
| Transmission Method | IEEE 802.3 | Network Protocol | PROFINET |

▪ CMC-PD01



Features

- ▶ Supports PROFIBUS DP protocol
- ▶ Supports PZD control data exchange
- ▶ Supports PKW polling AC motor drive parameters
- ▶ Supports user diagnosis function
- ▶ Auto-detects baud rates; supports Max. 12Mbps

PROFIBUS DP Connector

| | |
|-----------------------------|-----------------------------|
| Interface | DB9 connector |
| Transmission method | High-speed RS-485 |
| Transmission cable | Shielded twisted pair cable |
| Electrical isolation | 500 V _{DC} |

Communication

| | |
|---|--|
| Message type | Cyclic data exchange |
| Module name | CMC-PD01 |
| GSD document | DELA08DB.GSD |
| Company ID | 08DB (HEX) |
| Serial transmission speed supported (auto-detection) | 9.6 kbps; 19.2 kbps; 93.75 kbps; 187.5 kbps; 125 kbps; 250 kbps; 500 kbps; 1.5 Mbps; 3 Mbps; 6 Mbps; 12 Mbps (bits per second) |

▪ CMC-DN01



Features

- ▶ Supports all baud rates on DeviceNet bus: 125 kbps, 250 kbps, 500 kbps and extendable serial transmission speed mode
- ▶ Based on the high-speed communication interface of Delta HSSP protocol, able to conduct immediate control of an AC motor drive
- ▶ Supports Group 2 only connection and polling I/O data exchange
- ▶ For I/O mapping, supports Max. 32 words of input and 32 words of output
- ▶ Supports EDS file configuration in DeviceNet configuration software
- ▶ Node address and serial transmission speed can be set up on an AC motor drive
- ▶ Power supplied from an AC motor drive

DeviceNet Connector

| | |
|----------------------------|--|
| Interface | 5-Pin 5.08mm pluggable connector |
| Transmission method | CAN |
| Transmission cable | Shielded twisted pair cable (with 2 power cables) |
| Transmission speed | 125 kbps, 250 kbps, 500 kbps and extendable serial transmission speed mode |
| Network protocol | DeviceNet protocol |

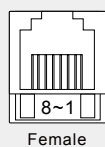
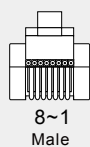
DeviceNet Connector

| | |
|-------------------------------|--|
| Interface | 50 PIN communication terminal |
| Transmission method | SPI communication |
| Terminal function | 1. Communicating with AC motor drive 2. Transmitting power supply from AC motor drive |
| Communication protocol | Delta HSSP protocol |

▪ EMC-COP01

Built-in EMC-COP01 card is available for VFDXXXC23E and VFDXXXC43E

RJ-45 Pin definition



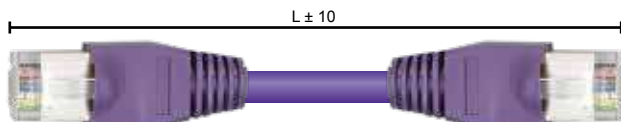
| Pin | Pin name | Definition |
|-----|----------|--------------------------------|
| 1 | CAN_H | CAN_H bus line (dominant high) |
| 2 | CAN_L | CAN_L bus line (dominant low) |
| 3 | CAN_GND | Ground/0V/V- |
| 6 | CAN_GND | Ground/0V/V- |

Accessories

Delta Standard Fieldbus Cables

| Delta Cables | Part Number | Description | Length |
|-----------------------|---------------|---|------------|
| CANopen Cable | UC-CMC003-01A | CANopen cable, RJ45 connector | 0.3m |
| | UC-CMC005-01A | CANopen cable, RJ45 connector | 0.5m |
| | UC-CMC010-01A | CANopen cable, RJ45 connector | 1m |
| | UC-CMC015-01A | CANopen cable, RJ45 connector | 1.5m |
| | UC-CMC020-01A | CANopen cable, RJ45 connector | 2m |
| | UC-CMC030-01A | CANopen cable, RJ45 connector | 3m |
| | UC-CMC050-01A | CANopen cable, RJ45 connector | 5m |
| | UC-CMC100-01A | CANopen cable, RJ45 connector | 10m |
| | UC-CMC200-01A | CANopen cable, RJ45 connector | 20m |
| DeviceNet Cable | UC-DN01Z-01A | DeviceNet cable | 305m |
| | UC-DN01Z-02A | DeviceNet cable | 305m |
| EtherNet Cable | UC-EMC003-02A | EtherNet/EtherCAT cable, Shielding | 0.3m |
| | UC-EMC005-02A | EtherNet/EtherCAT cable, Shielding | 0.5m |
| | UC-EMC010-02A | EtherNet/EtherCAT cable, Shielding | 1m |
| | UC-EMC020-02A | EtherNet/EtherCAT cable, Shielding | 2m |
| | UC-EMC050-02A | EtherNet/EtherCAT cable, Shielding | 5m |
| | UC-EMC100-02A | EtherNet/EtherCAT cable, Shielding | 10m |
| | UC-EMC200-02A | EtherNet/EtherCAT cable, Shielding | 20m |
| CANopen/DeviceNet TAP | TAP-CN01 | 1 in 2 out, built-in 121Ω terminal resistor | 1 in 2 out |
| | TAP-CN02 | 1 in 4 out, built-in 121Ω terminal resistor | 1 in 4 out |
| | TAP-CN03 | 1 in 4 out, RJ45 connector, built-in 121Ω terminal resistor | 1 in 4 out |
| PROFIBUS Cable | UC-PF01Z-01A | PROFIBUS DP cable | 305m |

Unit: mm



CANopen Breakout Box

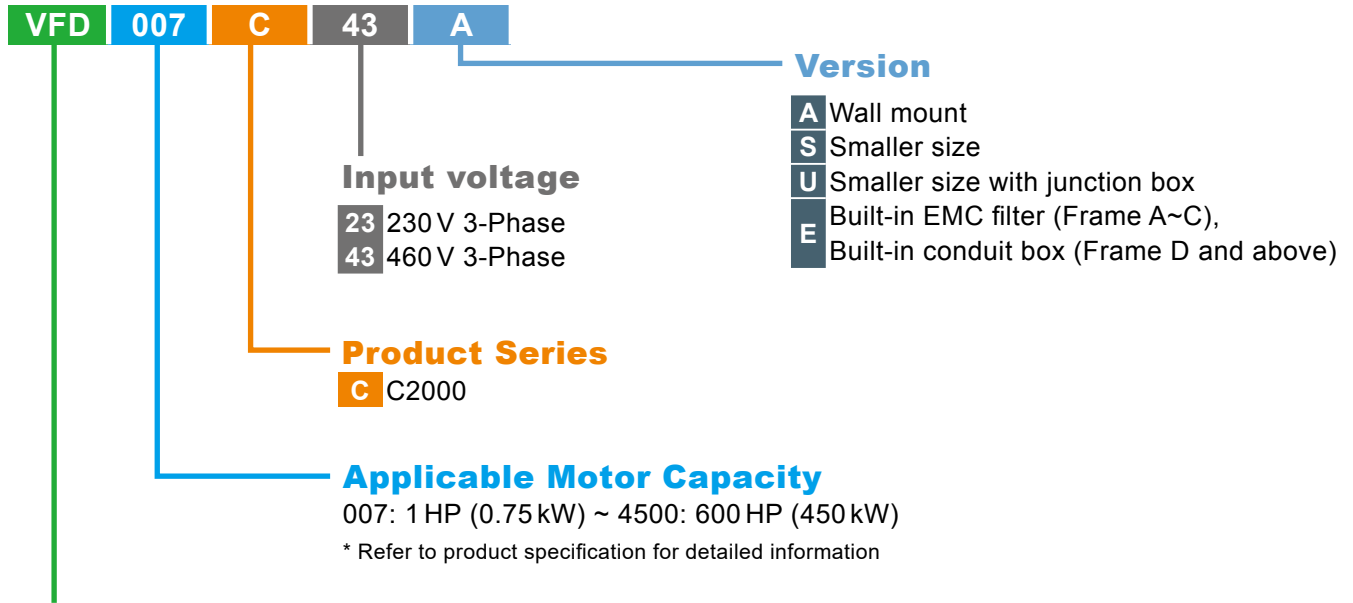
Model: TAP-CN03

Unit: mm [inch]



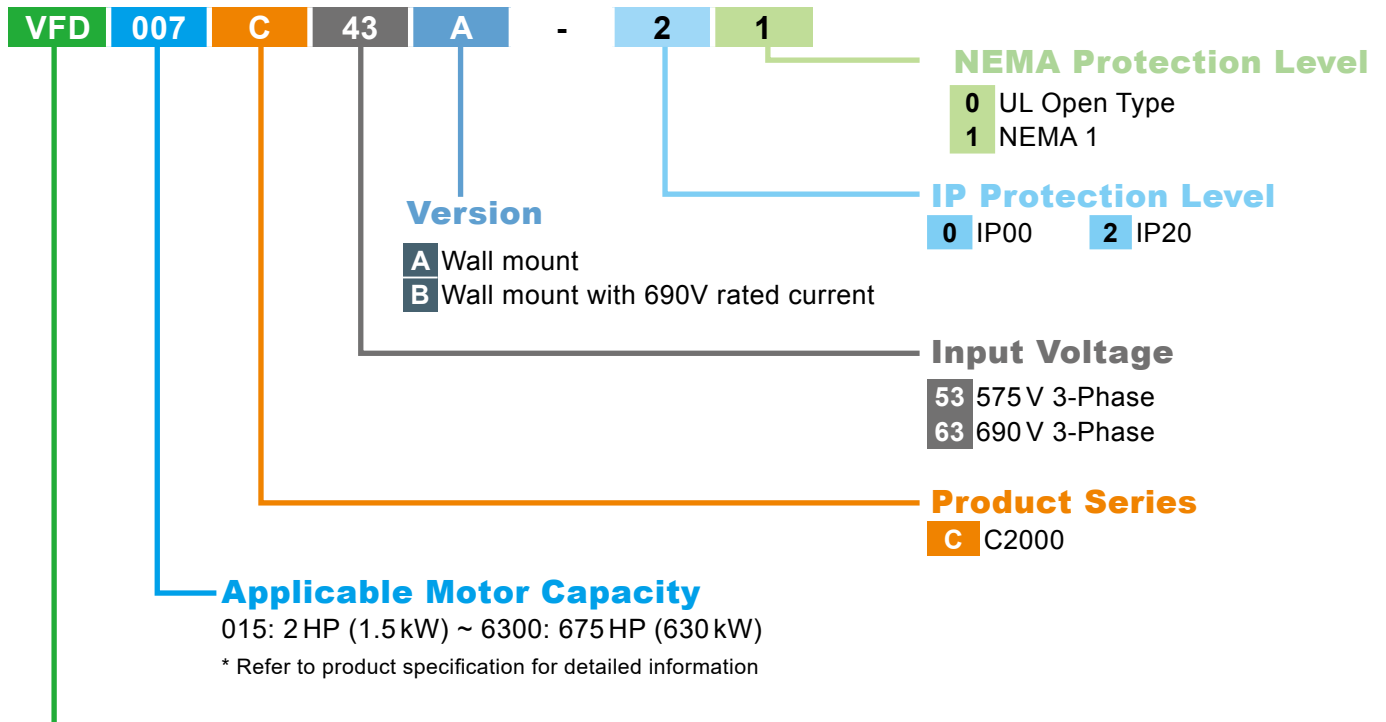
Model Name

- 230 V / 460 V:



Series Name
Variable Frequency Drive

- 575 V / 690 V:



Series Name
Variable Frequency Drive

Ordering Information

| Frame Size | | Power Range | Models | | | |
|----------------|---|---|--|--|---|--|
| Frame A |  | 230 V: 0.75~3.7kW 460 V: 0.75~5.5kW 575 V: 1.5~3.7kW | VFD007C23A VFD015C23A VFD022C23A VFD037C23A | VFD007C43A VFD015C43A VFD022C43A VFD037C43A VFD040C43A VFD055C43A | VFD007C43E VFD015C43E VFD022C43E VFD037C43E VFD040C43E VFD055C43E | VFD015C53A-21 VFD022C53A-21 VFD037C53A-21 |
| Frame B |  | 230 V: 5.5~11kW 460 V: 7.5~15kW 575 V: 5.5~15kW | VFD055C23A VFD075C23A VFD110C23A | VFD075C43A VFD110C43A VFD150C43A | VFD075C43E VFD110C43E VFD150C43E | VFD055C53A-21 VFD075C53A-21 VFD110C53A-21 VFD150C53A-21 |
| Frame C |  | 230 V: 15~22kW 460 V: 18.5~30kW 690 V: 18.5~37kW | VFD150C23A VFD185C23A VFD220C23A | VFD185C43A VFD220C43A VFD300C43A | VFD185C43E VFD220C43E VFD300C43E | VFD185C63B-21 VFD220C63B-21 VFD300C63B-21 VFD370C63B-21 |
| Frame D |  | 230 V: 30~37kW 460 V: 37~75kW 690 V: 55~75kW | Frame_D1 VFD300C23A VFD370C23A VFD550C43A VFD750C43A VFD450C63B-00 VFD550C63B-00 | Frame_D0-1 VFD370C43S VFD450C43S | Frame_D2 VFD300C23E VFD370C23E VFD550C43E VFD750C43E VFD450C63B-21 VFD550C63B-21 | Frame_D0-2 VFD370C43U VFD450C43U |
| Frame E |  | 230 V: 45~75kW 460 V: 90~110kW 690 V: 75~132kW | Frame_E1 VFD450C23A VFD550C23A VFD750C23A VFD900C43A VFD1100C43A VFD750C63B-00 VFD900C63B-00 VFD1100C63B-00 VFD1320C63B-00 | Frame_E2 VFD450C23E VFD550C23E VFD750C23E VFD900C43E VFD1100C43E VFD750C63B-21 VFD900C63B-21 VFD1100C63B-21 VFD1320C63B-21 | | |
| Frame F |  | 230 V: 90kW 460 V: 132~160kW 690 V: 160~200kW | Frame_F1 VFD900C 23A VFD1320C 43A VFD1600C 43A VFD1600C63B-00 VFD2000C63B-00 | Frame_F2 VFD900C 23E VFD1320C 43E VFD1600C 43E VFD1600C63B-21 VFD2000C63B-21 | | |

| Frame Size | | Power Range | Models | | |
|----------------------------------|---|--|---|---|---|
| Frame G |  | 460 V: 185~220 kW 690 V: 250~315 kW | Frame_G1 VFD1850C43A VFD2200C43A VFD2500C63B-00 VFD3150C63B-00 | Frame_G2 VFD1850C43E VFD2200C43E VFD2500C63B-21 VFD3150C63B-21 | |
| Frame H |  | 460 V: 280~450 kW | Frame_H1 VFD2800C43A VFD3150C43A VFD3550C43A VFD4500C43A | Frame_H2 VFD2800C43E-1 VFD3150C43E-1 VFD3550C43E-1 VFD4500C43E-1 | Frame_H3 VFD2800C43E VFD3150C43E VFD3550C43E VFD4500C43E |
| Frame H (690 V Model) |  | 690 V: 400~630 kW | Frame_H1 VFD4000C63B-00 VFD4500C63B-00 VFD5600C63B-00 VFD6300C63B-00 | Frame_H2 VFD4000C63B-21 VFD4500C63B-21 VFD5600C63B-21 VFD6300C63B-21 | |



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Taoyuan Plant 1



Tainan Plant (Diamond-rated Green Building)

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Wujiang Plant 3



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Tokyo Office

ASIA (India)



Rudrapur Plant
(Green Building)

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