



Automation for a Changing World

# **Delta Heavy Duty Vector Control Drive CH2000 Series**



reddot design award  
winner 2010

[www.deltaww.com](http://www.deltaww.com)

 **DELTA**  
Smarter. Greener. Together.

# **CH2000 Power in Hand**

**With years of experience and expertise in drive technology, Delta presents its new AC motor drive, the CH2000 Series, providing high performance with robust design. It is equipped with larger starting torque and high overload capabilities to fulfill the needs of heavy load applications and to handle sudden load impact conditions.**

**The CH2000 Series is designed with high tolerance for critical environments, especially for heavy load applications.**

**Featuring outstanding controls for all fields and system performance improvements, the CH2000 Series offers exceptional quality and comprehensive services.**

**Introducing the CH2000 Series heavy load field-oriented vector control drive to enhance your competitive advantage for achieving greater success.**





# Table of Contents

## Functions and Applications 3

- Standard Models
- Excellent Drive Control
- Excellent Overload Capability
- Fast Response to Load Impact
- Large Starting Torque
- Flexible Torque and Current Limit Settings
- Deceleration Energy Backup (DEB)
- Industrial Applications
- Modular Design
- High-Speed Network
- Intelligent PLC Functions
- Permanent Magnet (PM) Motor Applications
- Excellent Environment Adaptability

## Specifications 12

- Environment for Operation, Storage and Transportation
- Operation Temperature and Protection Level
- Product Specifications
- General Specifications

<b>Wiring</b>	<b>15</b>
<b>Dimensions</b>	<b>18</b>
<b>Accessories</b>	<b>27</b>
<b>Ordering Information</b>	<b>33</b>
<b>Model Name Explanation</b>	<b>34</b>

## Standard Models (IP20/NEMA1)

Power range: 230V 0.75~75kW, 460V 0.75~280kW

230V (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
230V (HP)	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Output (A)	5	8	11	17	25	33	49	65	75	90	120	146	180	215	255
Frame Size	A			B			C		D		E		F		
Braking Chopper				Built-in									Optional		
DC Reactor				Optional									Built-in		
EMC Filter				Optional											
Protection Level				21 (IP20, NEMA1)								00 (IP00, UL Open Type)/ 21 (IP20, NEMA1)			
460V (kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75
460V (HP)	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Output (A)	3	4	6	9	12	18	24	32	38	45	60	73	91	110	150
Frame Size	A			B			C		D0		D		E		
Braking Chopper				Built-in									Option		
DC Reactor				Optional									Built-i		
EMC Filter				Built-in (CH4EA Models)									Option		
Protection Level				21 (IP20, NEMA1)								00 (IP00, UL Open Type)			

## Advanced Drive Controls

### High Performance

1. Large starting torque
2. High overload capability
3. Super heavy duty setting
4. Fast response to load impact
5. A drive for both asynchronous and synchronous motors

### Flexible Applications

1. Control modes for speed, torque, position and synchronous control
2. Built-in PLC functions
3. Excellent 4-quadrant torque control and limit
4. Noise reduction operation



132	160	185	220	280
175	215	250	300	375
250	310	370	440	550
F	G		H	
al				
n				
al				
)/21 (IP20, NEMA1)				



### Modular Design

1. Hot pluggable LCD keypad
2. I/O extension card options
3. PG card options
4. Network cards for fieldbus modules
5. Removable fan

### Adaptability to Critical Environments

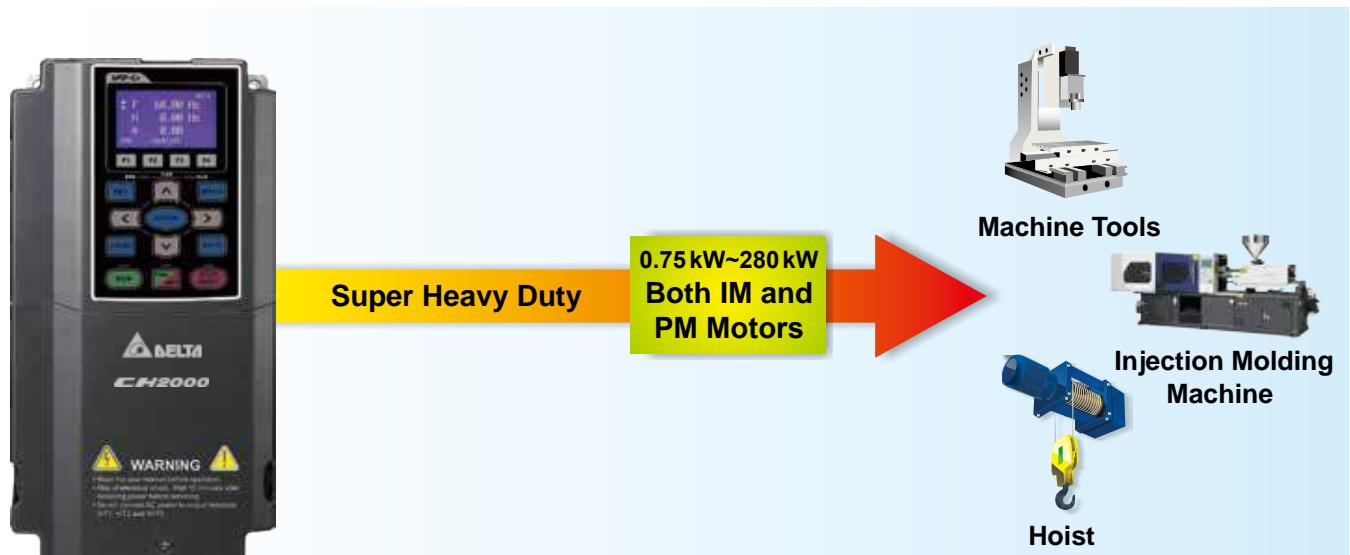
1. 50°C operating temperature
2. Built-in DC reactor\*
3. Coated circuit boards
4. Built-in EMC filter\*
5. International safety standard (CE/UL/cUL)

\*Note: Please refer to product specifications for more details



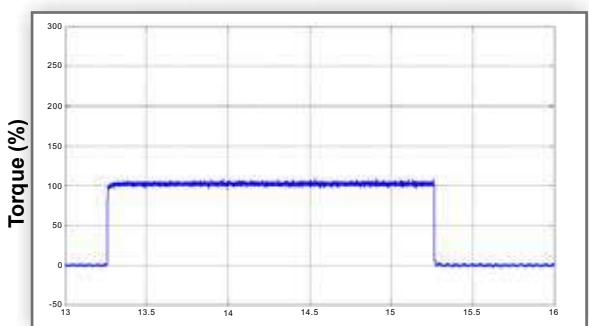
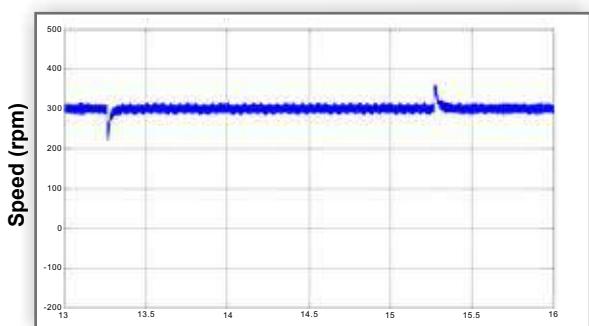
## Excellent Overload Capability

The super heavy duty setting is suitable for harsh environment applications with a current overload capability of 150% for 60 seconds and 200% for 3 seconds.



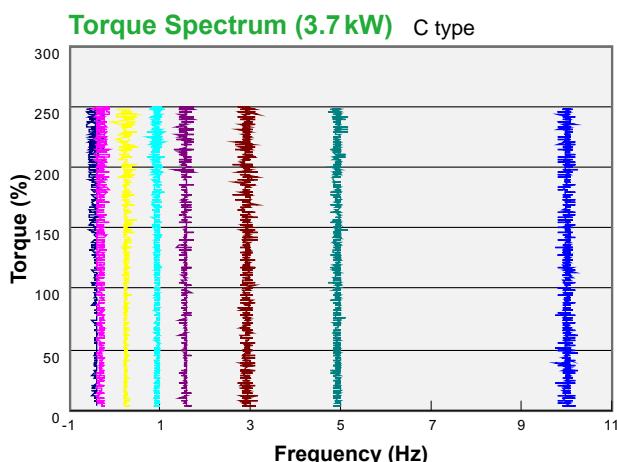
## Fast Response to Load Impact

Response to sudden load impact



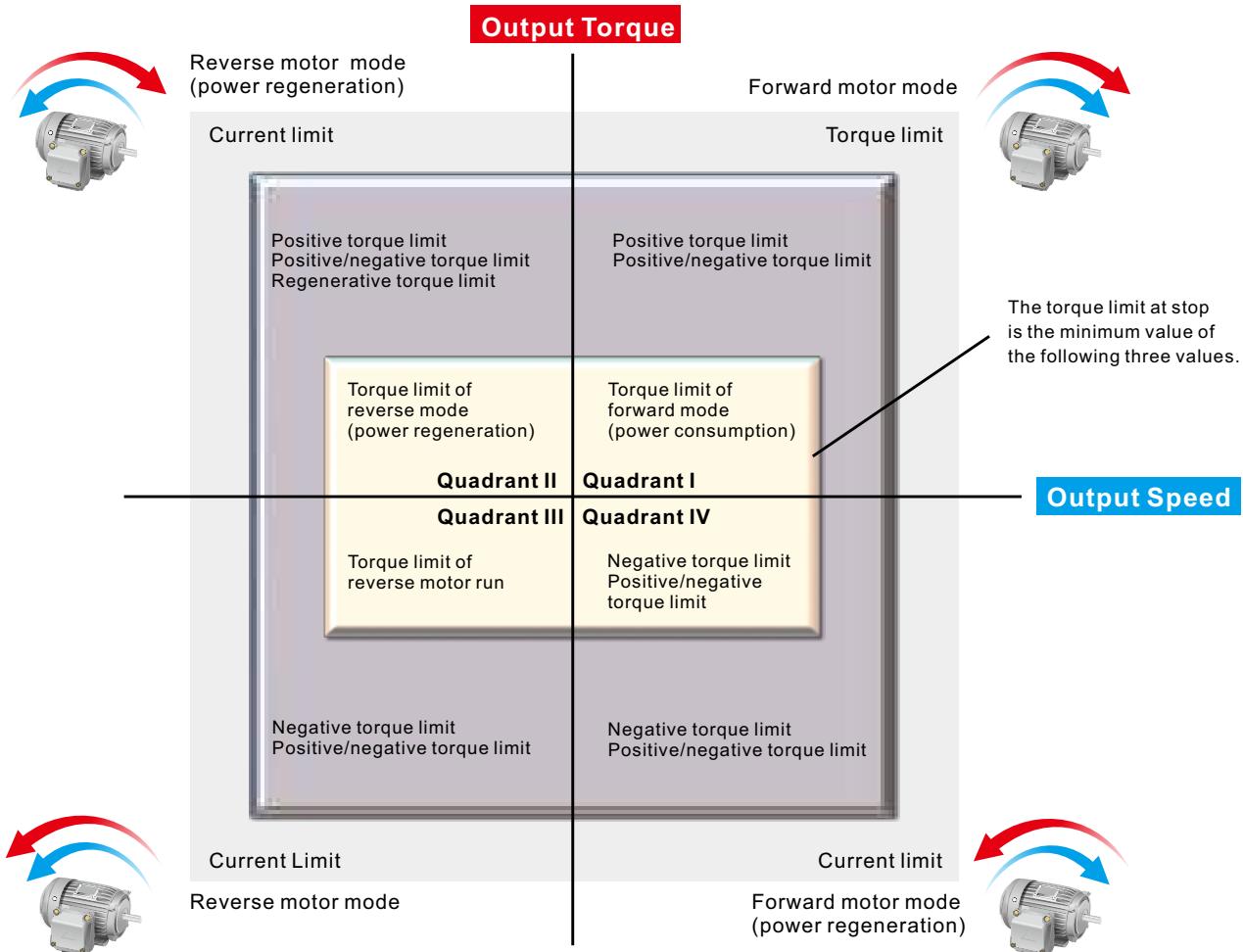
## Large Starting Torque

Large starting torque output up to 200% at very low speed under FOC + PG mode.



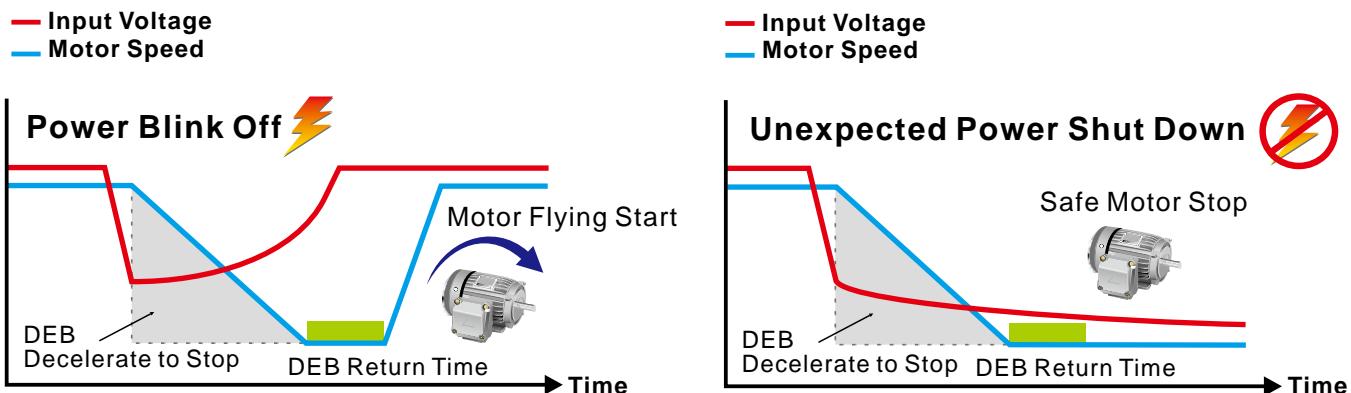
## Flexible Torque and Current Limit Settings

Prevents equipment damage from load impact. When the drive is in FOC control mode, setting torque limit can protect the machinery under many conditions.

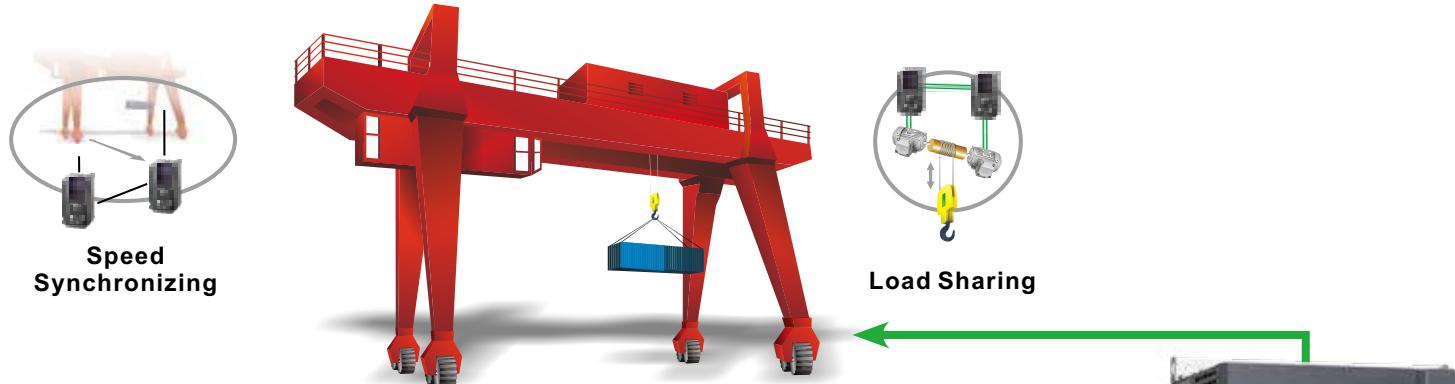


## Deceleration Energy Backup (DEB)

Controls the motor's deceleration to a stop when a sudden power outage occurs and accelerates it to its previous operation speed when power returns.



# Industrial Applications



**Delta Power Regenerative Unit  
REG2000 Series**



Provides the crane and hoist system four-quadrant operation and energy saving performance with the power regeneration function.



**CNC Application (C-axis)**



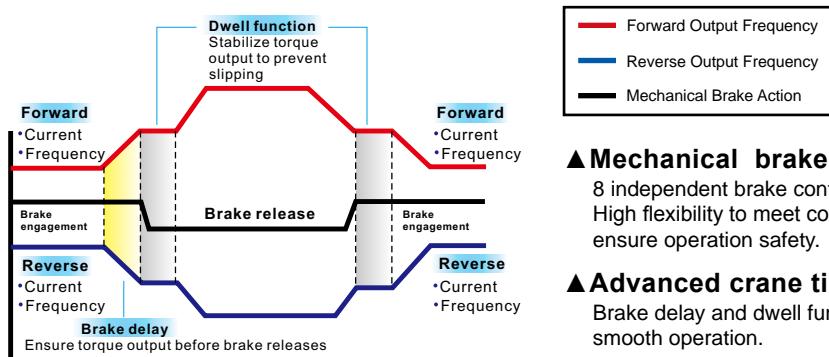
The CH2000 provides position control and pulse wave velocity following functions for C-axis applications with high overload capability providing excellent performance for high-speed rigid tapping.

**Delta Active Front End  
AFE2000 Series**



Provides the crane and hoist system excellent operation quality with reduced torque ripple, harmonic suppression, high power factors and energy saving performance with the power regeneration function.

## Advanced Crane Function



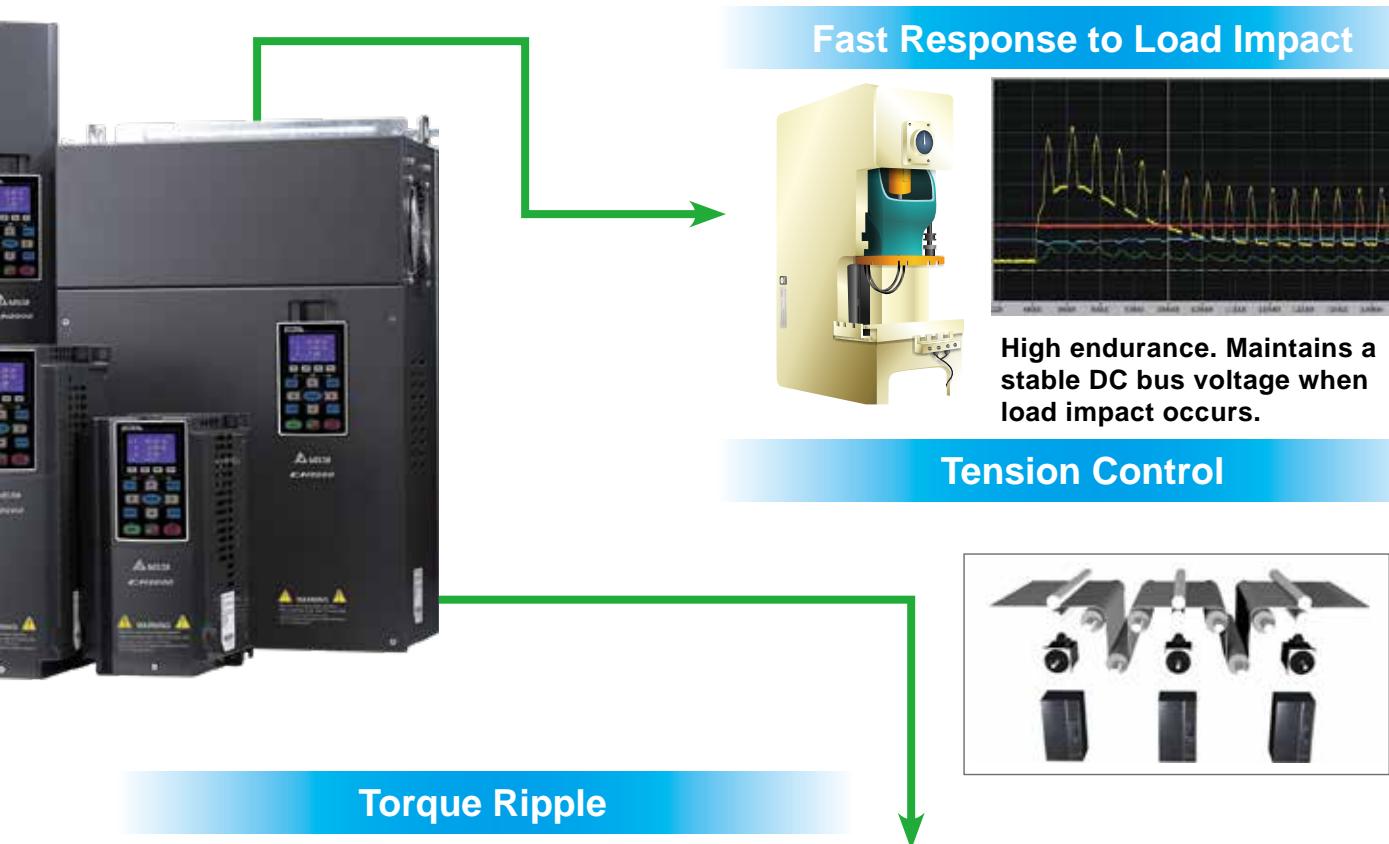
### ▲ Mechanical brake control

8 independent brake control setting to different criteria.  
High flexibility to meet complex application needs and ensure operation safety.

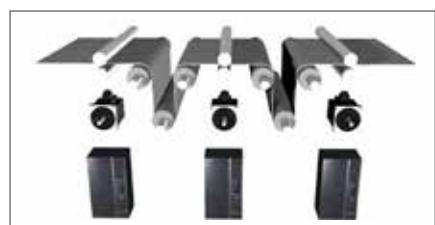
### ▲ Advanced crane time sequence

Brake delay and dwell function ensure smooth operation.

## Fast Response to Load Impact



## Tension Control



## Torque Ripple

Other Delta Products

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CH2000

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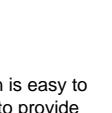
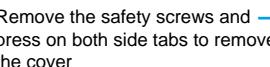
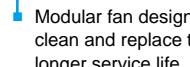
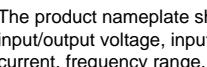
CH2000+AFE2000



# Modular Design

Modular design for high flexibility for system design and maintenance.

Various accessories are available such as I/O extension cards, encoder feedback cards, communication cards, a hot pluggable LCD keypad, removable terminals and a removable fan.

EMC-PG010/EMC-PG020	EMC-PG01U/EMC-PG02U	EMC-PG01L/EMC-PG02L	EMC-PG01R	▶ PG Feedback Cards
				
				▶ I/O Extension Cards
				▶ Power Shift Cards
				
<ul style="list-style-type: none"> <li>■ KPC-CC01 keypad</li> <li>■ Standard RJ45 network cable for remote operation</li> <li>■ Easy to remove with one press</li> </ul>				
				<span style="color: green;">▶ Communication Cards</span>
				
<ul style="list-style-type: none"> <li>■ Remove the safety screws and press on both side tabs to remove the cover</li> <li>■ Modular fan design is easy to clean and replace to provide longer service life</li> <li>■ The product nameplate shows input/output voltage, input/output current, frequency range, and more</li> </ul>				
				<span style="color: blue;">▶ Removable terminals</span>
<p>Easy to wire with high safety</p>				
				

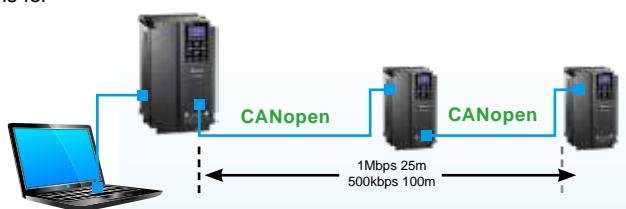
# High-Speed Network

- Provides optional MODBUS RTU and various fieldbus cards for flexible communication applications
- Advanced network functions
- Built-in MODBUS communication interface
- **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
- WPLSoft (Software)



- 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 device 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

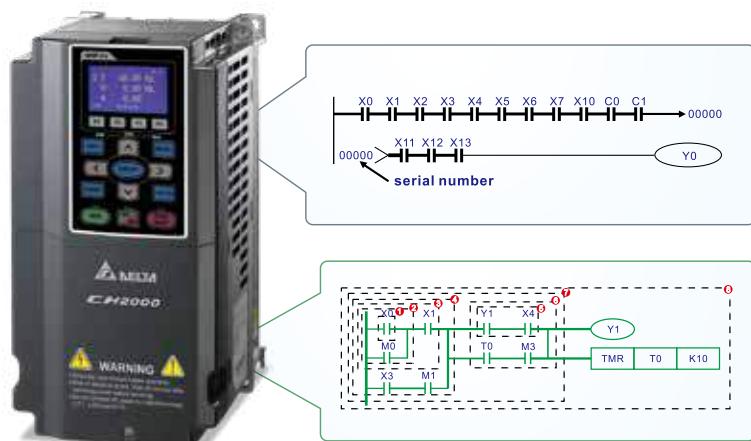
Delta provides communication integrator software that offers graphic module settings and a user friendly interface to support all Ethernet products settings and online monitoring.

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



# Intelligent PLC Functions

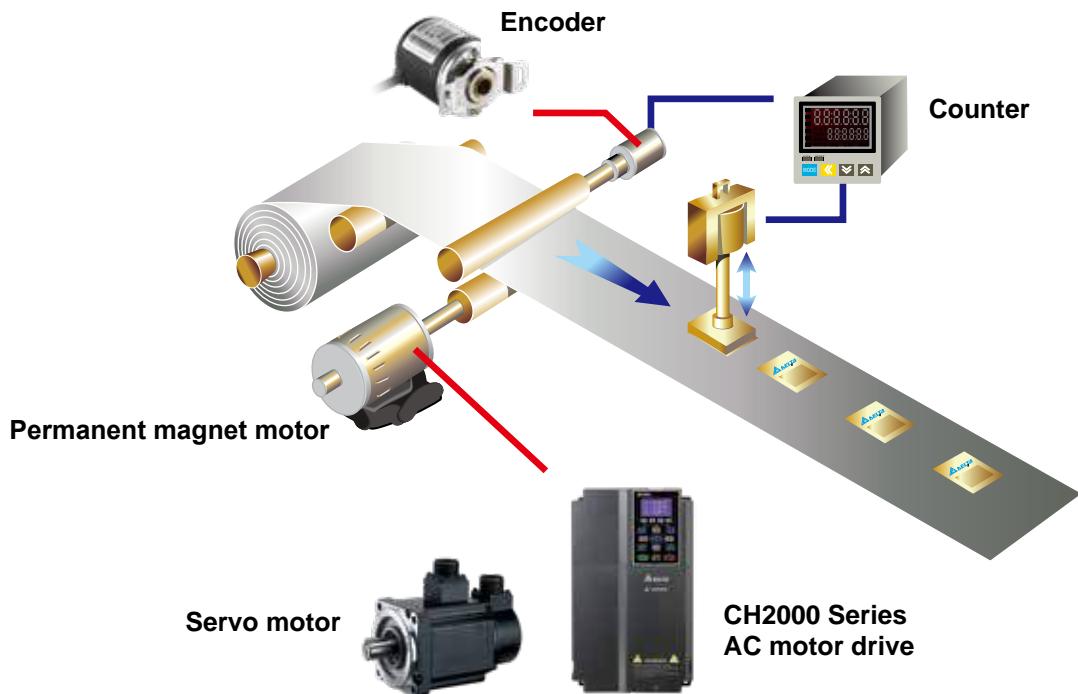
- Built-in 10K steps capacity of PLC functions. Distributed control and independent operation are easily achieved via network connection.
- CANopen Master protocol and PLC functions provide synchronous control and fast data exchange.



# A Drive for Permanent Magnet (PM) Motors

The CH2000 Series can control both induction and permanent magnet (PM) motors.

The benefits of using PM motors include dynamic response and precise position/speed/torque control.



## Excellent Environment Adaptability

- Built-in DC choke\*
- Built-in EMC filter
- Enhanced conformal coating on PCBs for safe operation in harsh environment applications
- Isolation design of heat dissipation system separate from other drive components
- There are two heat dissipating methods:
  - (1) Flange mounting method helps disperse heat out of the drive
  - (2) Cooling fan design fan provides cold air to the aluminum heat sink

Both methods are efficient and provide users with flexible options according to their working environment needs.



\*Note: Please refer to the Product Specification

# Specifications

## 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 0.01mg/cm<sup>2</sup> per year.**

<b>Environment</b>	<b>Installation Location</b>	IEC60364-1/IEC60664-1 Pollution degree 2, indoor use only	
	<b>Surrounding Temperature (°C)</b>	Storage/Transportation	-25 ~ 70
		Only allowed at non-condensation, non-frost, non-conductive environment.	
		Operation	Max. 95%
	<b>Rated Humidity</b>	Storage/Transportation	Max. 95%
		No condense water	
	<b>Air Pressure (kPa)</b>	Operation/Storage	86 ~ 106
		Transportation	70 ~ 106
		IEC60721-3-3	
	<b>Pollution Level</b>	Operation	Class 3C3; Class 3S2
		Storage	Class 1C2; Class 1S2
		Transportation	Class 2C2; Class 2S2
		Only allowed at non-condensation, non-frost, non-conductive environment.	
	<b>Altitude</b>	Operation	If the AC motor drive is installed at an altitude 0 ~ 1000m, follow normal operation restriction. If it is install at altitude 1000 ~ 3000m, 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.
	<b>Package Drop</b>	Storage/Transportation	ISTA procedure 1A(according to weight) IEC60068-2-31
	<b>Vibration</b>	1.0mm, peak to peak value range from 2Hz to 13.2 Hz; 0.7G ~ 1.0G range from 13.2Hz to 55Hz; 1.0 G range from 55Hz to 512 Hz. Comply with IEC 60068-2-6.	
	<b>Impact</b>	IEC/EN 60068-2-27	
	<b>Operation Position</b>	Max. allowed offset angle ±10° (under normal installation position)	

## Operation Temperature and Protection Level

<b>Model</b>	<b>Frame</b>	<b>Top Cover</b>	<b>Conduit Box</b>	<b>Protection Level</b>	<b>OperationTemperature</b>
<b>VFDxxxxCHxxx-21</b>	Frame A ~ C 230V: 0.75 ~ 18.5 kW 460V: 0.75 ~ 30 kW	Remove top cover	Standard conduit plate	IP20/UL Open Type	SHD: -10°C ~ 50°C
		Standard with top cover		IP20/UL Type1/NEMA1	SHD: -10°C ~ 40°C
	Frame D ~ H 230V: 22 kW and above 460V: 37 kW and above	N/A	Conduit box	IP20/UL Type1/NEMA1	SHD: -10°C ~ 40°C
<b>VFDxxxxCHxxx-00</b>	Frame D ~ H 230V: 22 kW and above 460V: 37 kW and above	N/A	Without standard conduit box	IP00 IP20/UL Open Type 	SHD: -10°C ~ 50°C  Protection degree for the circled area is IP00, other areas are IP20

# Specifications

230V																
Frame Size		A				B			C		D			E		
Model VFD-□□□CH23A-□□		007	015	022	037	055	075	110	150	185	220	300	370	450	550	750
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
Applicable Motor Output (HP)		1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100
Output Rating SUPER HEAVY DUTY	Rate Output Capacity (kVA)	2.0	3.2	4.4	6.8	10	13	20	26	30	36	48	58	72	86	102
	Rated Output Current (A)	5	8	11	17	25	33	49	65	75	90	105	146	180	215	255
	Carrier Frequency (kHz)	5 ~ 15 kHz														
Input Rating	Overload Tolerance	150% of rated current: 1 minute for every 5 minutes 200% of rated current: 3 seconds for every 30 seconds														
	Input Current (A) Super Heavy Duty	6.4	12	16	20	28	36	52	72	83	99	124	143	171	206	245
	Rated Voltage/Frequency	3-phase AC 200V ~ 240V (-15% ~ +10%), 50/60Hz														
	Operating Voltage Range	170 ~ 265V <sub>AC</sub>														
AC Drive Weight	Frequency Tolerance	47 ~ 63Hz														
	2.6±0.3Kg	5.4±1Kg	9.8±1.5Kg	38.5±1.5Kg	64.8±1.5Kg	86.5±1.5Kg										
Cooling Method	Natural cooling	Fan cooling														
Braking Chopper	Frame A to C (built-in); Frame D and above (optional)															
DC Reactor	Frame A to C (optional); Frame D and above (built-in)															
EMC Filter	Optional															
EMC-COP01	Optional															

460V															
Frame Size		A					B				C				
Model VFD-□□□CH43□-□□		007	015	022	037	055	075	110	150	185	220	300	370	450	550
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
Applicable Motor Output (HP)		1	2	3	5	7.5	10	15	20	25	30	40	50	60	80
Output Rating SUPER HEAVY DUTY	Rate Output Capacity (kVA)	2.0	3.2	4.8	7.2	9.6	14	19	25	30	36	48	58	72	86
	Rated Output Current (A)	3	4	6	9	12	18	24	32	38	45	60	72	86	102
	Carrier Frequency (kHz)	5 ~ 15 kHz													
Input Rating	Overload Tolerance	150% of rated current: 1 minute for every 5 minutes 200% of rated current: 3 seconds for every 30 seconds													
	Input Current (A) Super Heavy Duty	4.3	5.9	8.7	14	17	20	26	35	40	47	63	72	86	102
	Rated Voltage/Frequency	3-phase AC 380V ~ 480V (-15% ~ +10%), 50/60Hz													
	Operating Voltage Range	323 ~ 528VAC													
AC Drive Weight	Frequency Tolerance	47 ~ 63Hz													
	2.6±0.3Kg	5.4±1Kg	9.8±1.5Kg	38.5±1.5Kg	64.8±1.5Kg	86.5±1.5Kg	98.5±1.5Kg	120.5±1.5Kg	140.5±1.5Kg	160.5±1.5Kg	180.5±1.5Kg	200.5±1.5Kg	220.5±1.5Kg	240.5±1.5Kg	
Cooling Method	Natural cooling	Fan cooling													
Braking Chopper	Frame A to C (built-in); Frame D and above (optional)														
DC Reactor	Frame A to C (optional); Frame D and above (built-in)														
EMC Filter	Frame A ~ C, VFD-□□□CH4EA-21, EMC filter built-in														
EMC-COP01	Frame A ~ C, VFD-□□□CH43A-21, No EMC filter														
	Optional														

460V															
Frame Size		D0	D		E		F	G		H					
<b>Model VFD-□□□□CH43□-□</b>		370	450	550	750	900	1100	1320	1600	1850	2200	2800			
<b>Applicable Motor Output (kW)</b>		37	45	55	75	90	110	132	160	185	220	280			
<b>Applicable Motor Output (hp)</b>		50	60	75	100	125	150	175	215	250	300	375			
<b>Output Rating</b>	SUPER HEAVY DUTY	Rate Output Capacity (kVA)	58	73	88	120	143	175	199	247	295	359	438		
		Rated Output Current (A)	73	91	110	150	180	220	250	310	370	440	550		
<b>Carrier Frequency (kHz)</b>		5 ~ 15 kHz													
<b>Input Rating</b>	OVERLOAD TOLERANCE	<b>Overload Tolerance</b>		150% of rated current: 1 minute for every 5 minutes 200% of rated current: 3 seconds for every 30 seconds											
		<b>Input Current (A) Super Heavy Duty</b>	74	101	114	157	167	207	240	300	380	400	494		
<b>Rated Voltage/Frequency</b>		3 Phase AC 380V ~ 480V (-15%~+10%), 50/60Hz													
<b>Operating Voltage Range</b>		323 ~ 528V <sub>AC</sub>													
<b>Frequency Tolerance</b>		47 ~ 63Hz													
<b>AC Drive Weight</b>		38.5±1.5Kg				64.8±1.5Kg	86.5 ± 1.5Kg	134±4Kg			257 ± 12Kg				
<b>Cooling Method</b>		Fan cooling													
<b>Braking Chopper</b>		Frame D and above (optional)													
<b>DC Reactor</b>		Frame D and above (built-in)													
<b>EMC Filter</b>		Frame D and above (Optional)													
<b>EMC-COP01</b>		Optional													

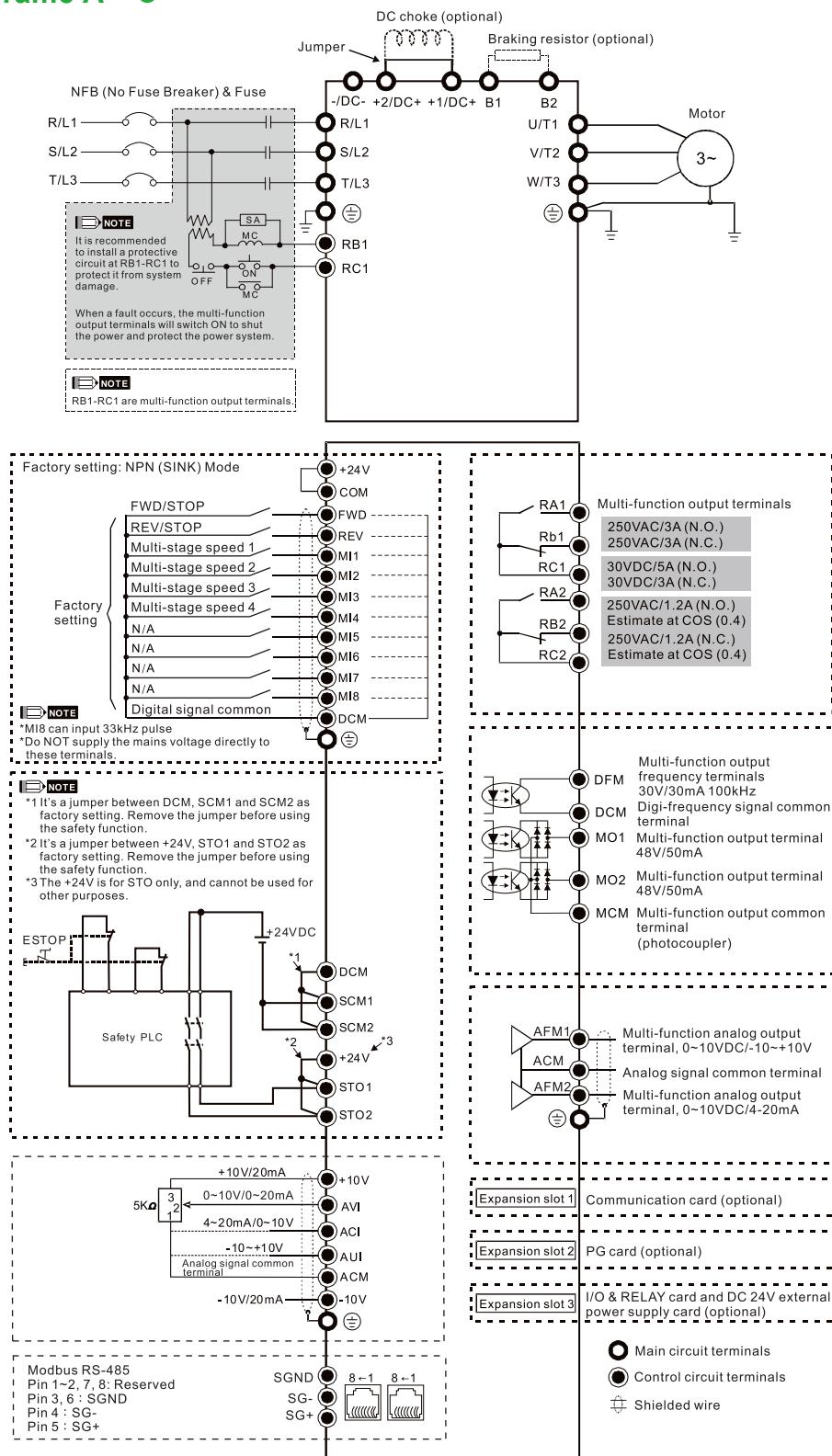
## General Specifications

<b>Control Characteristics</b>	<b>Control Method</b>	1: V/F, 2: SVC, 3: VF+PG, 4: FOC+PG, 5: TQC+PG,
	<b>Starting Torque</b>	Reach up to 200% or above at 0.5Hz. Under FOC+PG mode, starting torque can reach 200% at 0Hz.
	<b>V/F Curve</b>	4 point adjustable V/F curve and square curve
	<b>Speed Response Ability</b>	5Hz (vector control can reach up to 40Hz)
	<b>Torque Limit</b>	Super heavy duty 220% torque current
	<b>Torque Accuracy at TQC Mode</b>	±5%
	<b>Max. Output Frequency (Hz)</b>	Super Heavy Duty: 0.00 ~ 599.00 Hz
	<b>Frequency Output Accuracy</b>	Digital command: 0.01%, -10°C ~ +40°C, Analog command: 0.1%, 25 ±10°C
	<b>Output Frequency Resolution</b>	Digital command: 0.01 Hz, Analog command: 0.03 X Max. output frequency/60Hz (±11 bit)
	<b>Overload Tolerance</b>	Rated output current is 150 % for 60 seconds/Rated output current is 200% for 3 seconds
<b>Protection Characteristics</b>	<b>Frequency Setting Signal</b>	+10V ~ -10, 0 ~ +10V, 4 ~ 20mA, 0 ~ 20mA, Pulse input
	<b>Accel./decel. Time</b>	0.00 ~ 600.00/0.0 ~ 6000.0 seconds
<b>Main Control Function</b>	Torque control, Droop control, Speed/torque control switching, Feed forward control, Zero-servo control, Momentary power loss ride thru, Speed search, Over-torque detection, Torque Limit, 17-step speed (Max.), Accel/decel time switch, S-curve accel/decel, 3-wire sequence, Auto-Tuning (rotational, stationary), Dwell, Cooling fan on/off switch, Slip compensation, Torque compensation, JOG frequency, Frequency upper/lower limit settings, DC injection braking at start/stop, High slip braking, PID control (with sleep function), Energy saving control, MODBUS communication (RS-485 RJ45, Max.115.2 kbps), Fault restart, Parameter copy	
	<b>Fan Control</b>	230V model: VFD150CH23A-21(include) and series above: PMW control VFD110CH23A-21(include) and series below: on/off switch control 460V model: VFD185CH43A/4EA-21(include) and series above: PMW control VFD150CH43A/4EA-21(include) and series below: on/off switch control
<b>Protection Characteristics</b>	<b>Motor Protection</b>	Electronic thermal relay protection
	<b>Over-current Protection</b>	For drive model 230V and 460V over-current protection for 300% rated current ; current clamp (Super heavy duty: 220%)
	<b>Over-Voltage Protection</b>	230: drive will stop when DC-BUS voltage exceeds 410V 460: drive will stop when DC-BUS voltage exceeds 820V
	<b>Over-Temperature Protection</b>	Built-in temperature sensor
	<b>Stall Prevention</b>	Stall prevention during acceleration, deceleration and running independently
	<b>Restart after Instantaneous Power Failure</b>	Parameter setting up to 20 seconds
	<b>Grounding Leakage Current Protection</b>	Leakage current is higher than 50% of rated current of the AC motor drive
	<b>International Certifications</b>	  GB/T12668-2 

# Wiring

## Wiring Diagram for Frame A ~ C

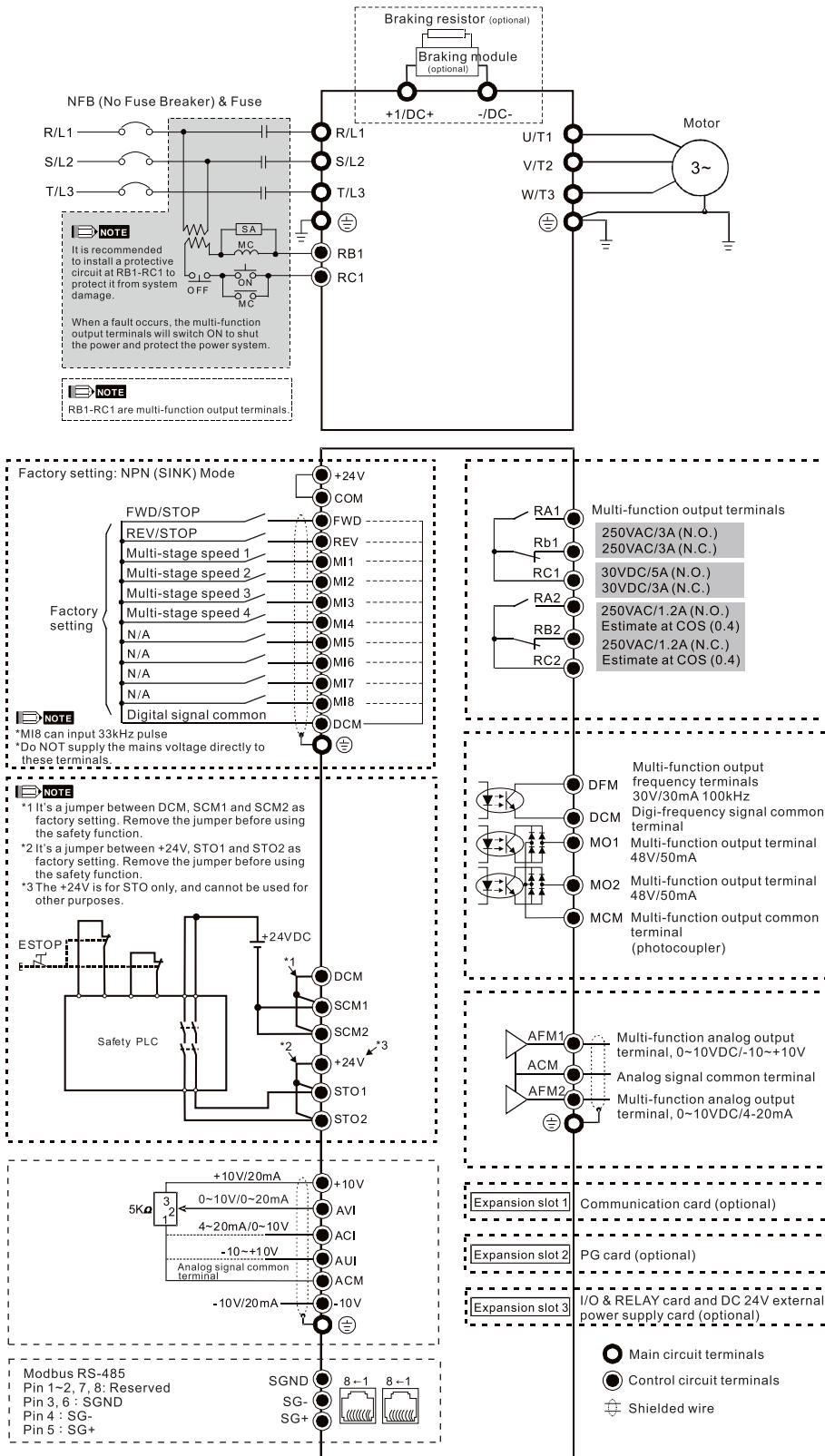
\*Input: 3-phase power



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.

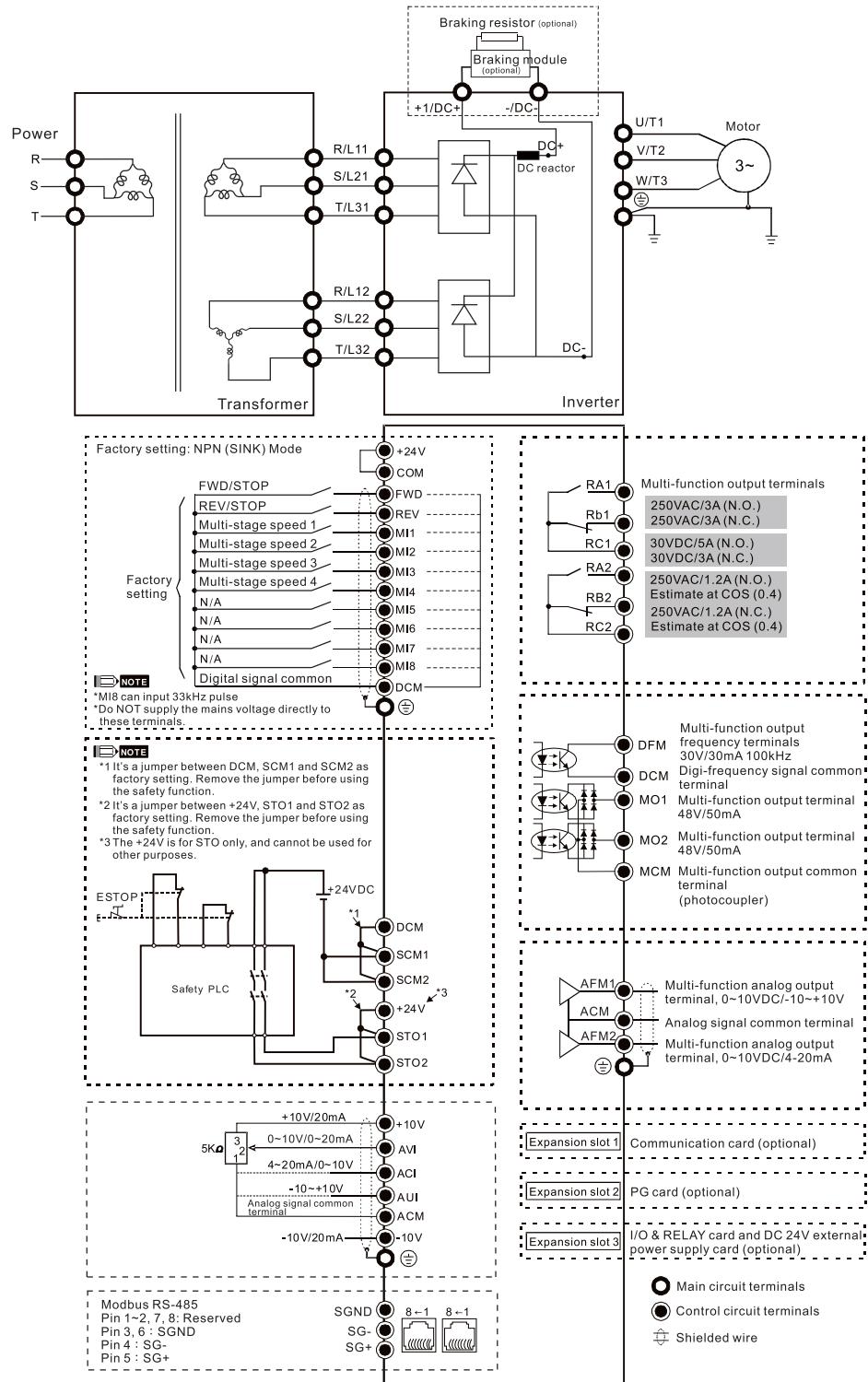
## Wiring Diagram for Frame D ~ F

\*Input: 3-phase power



## Wiring Diagram for Frame G ~ H

\*Input: 3-phase power

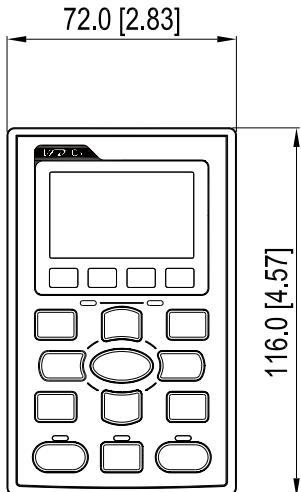


### NOTE

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.

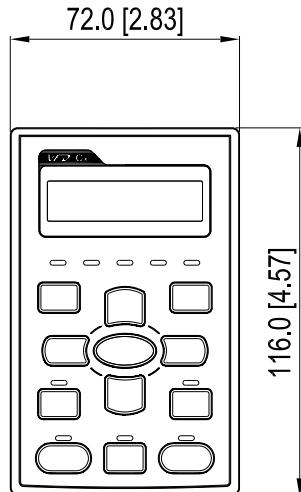
# Dimensions

Digital Keypad Unit: mm [inch]



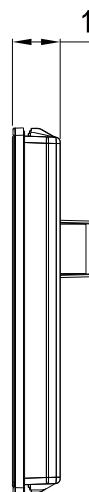
KPC-CC01

Standard LCD Digital Keypad



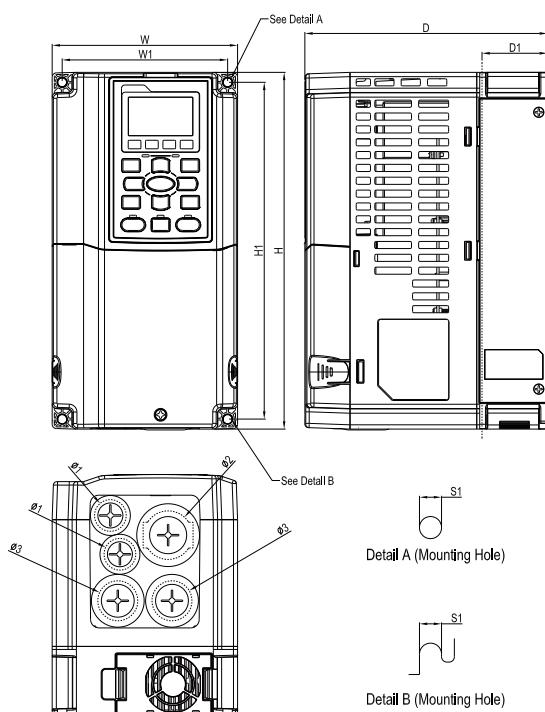
KPC-CE01

116.0 [4.57]



15.0 [0.59]

## Frame A



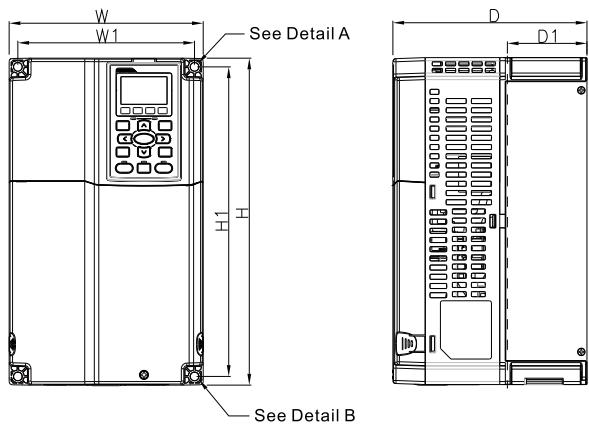
### MODEL

VFD007CH23A-21	VFD055CH43A-21
VFD015CH23A-21	VFD007CH4EA-21
VFD022CH23A-21	VFD015CH4EA-21
VFD037CH23A-21	VFD022CH4EA-21
VFD007CH43A-21	VFD037CH4EA-21
VFD015CH43A-21	VFD055CH4EA-21
VFD022CH43A-21	
VFD037CH43A-21	

Frame	W	H	D	W1	H1	D1*	S1	Ø1	Ø2	Ø3
A	mm	130.0	250.0	170.0	116.0	236.0	45.8	6.2	22.2	34.0
	inch	5.12	9.84	6.69	4.57	9.29	1.80	0.24	0.87	1.34

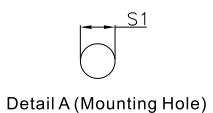
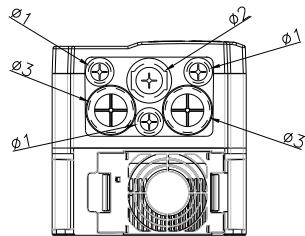
D1\*:Flange mount

## Frame B



### MODEL

VFD055CH23A-21  
VFD075CH23A-21  
VFD110CH23A-21  
VFD075CH43A-21  
VFD110CH43A-21  
VFD150CH43A-21  
VFD075CH4EA-21  
VFD110CH4EA-21  
VFD150CH4EA-21

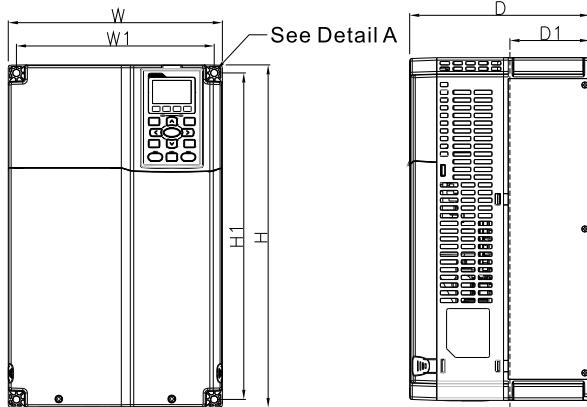


Detail B (Mounting Hole)

Frame	W	H	D	W1	H1	D1*	S1	Ø1	Ø2	Ø3	
m	mm	190.0	320.0	190.0	173.0	303.0	77.9	8.5	22.2	34.0	43.8
	inch	7.48	12.6	7.48	6.81	11.93	3.07	0.33	0.87	1.34	1.72

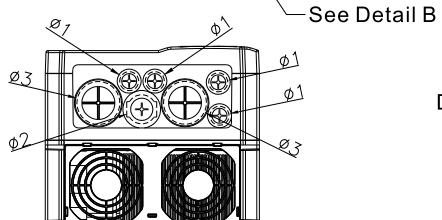
D1\*: Flange mount

## Frame C



### MODEL

VFD150CH23A-21  
VFD185CH23A-21  
VFD185CH43A-21  
VFD220CH43A-21  
VFD300CH43A-21  
VFD185CH4EA-21  
VFD220CH4EA-21  
VFD300CH4EA-21



Detail A (Mounting Hole)

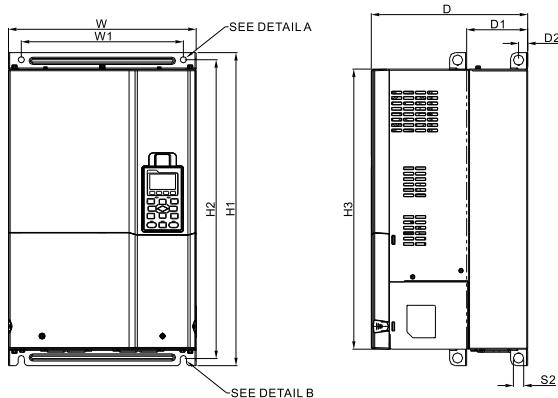


Detail B (Mounting Hole)

Frame	W	H	D	W1	H1	D1*	S1	Ø1	Ø2	Ø3	
c	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

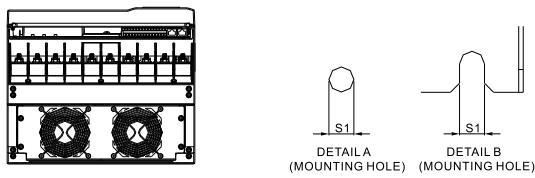
D1\*: Flange mount

## Frame D1



### MODEL

VFD220CH23A-00  
VFD300CH23A-00  
VFD370CH23A-00  
VFD450CH43A-00  
VFD550CH43A-00  
VFD750CH43A-00

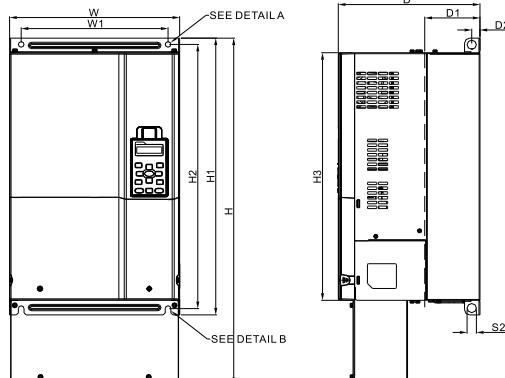


DETAIL A (MOUNTING HOLE)    DETAIL B (MOUNTING HOLE)

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	-	-

D1\*: Flange mount

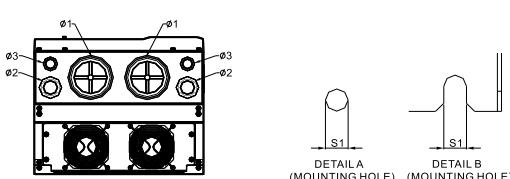
## Frame D2, D0-2



### MODEL

Frame D2

VFD220CH23A-21    VFD370CH43S-21  
VFD300CH23A-21  
VFD370CH23A-21  
VFD450CH43A-21  
VFD550CH43A-21  
VFD750CH43A-21

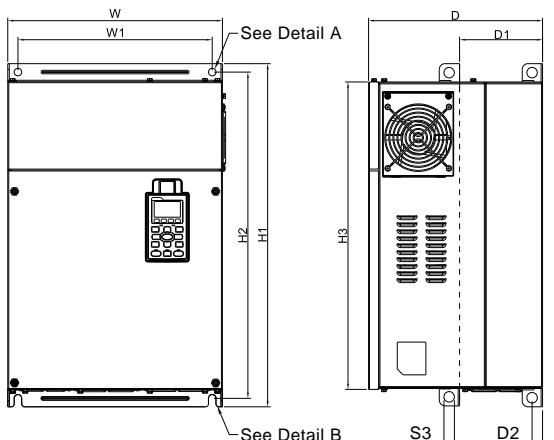


DETAIL A (MOUNTING HOLE)    DETAIL B (MOUNTING HOLE)

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
	inch	12.99	27.10	10.83	11.22	21.65	20.6	19.37	4.22	0.63	0.43	0.71	3.00	1.34
Frame	W	H	D	W1	H1	H2	H3	D1*	D2	S1	S2	Ø1	Ø2	Ø3
D0-2	mm	330.0	614.4	255.0	235.0	500.0	475.0	442.0	94.2	16.0	11.0	18.0	62.7	34.0
	inch	12.99	24.19	10.04	9.25	16.69	18.70	17.40	3.71	0.63	0.43	0.71	2.47	1.34

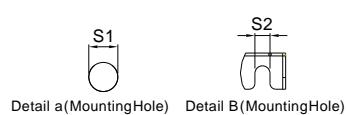
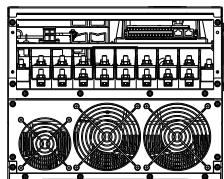
D1\*: Flange mount

## Frame E1



### MODEL

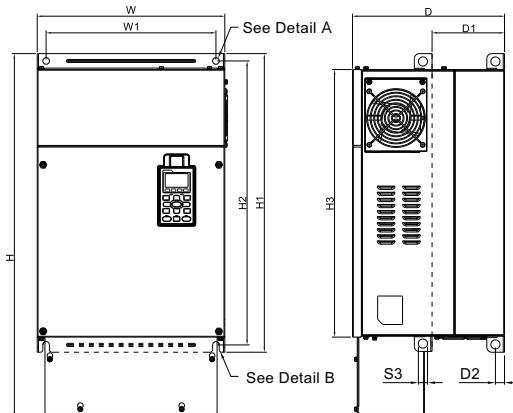
VFD450CH23A-00  
VFD550CH23A-00  
VFD900CH43A-00  
VFD1100CH43A-00



Frame	W	H	D	W1	H1	H2	H3	D1*	D2	S1/S2	S3	Ø1	Ø2	Ø3
E1	mm	370.0	-	300.0	335.0	589.0	560.0	528.0	143.0	18.0	13.0	18.0	-	-
	inch	14.57	-	11.81	13.19	23.19	22.05	20.80	5.63	0.71	0.51	0.71	-	-

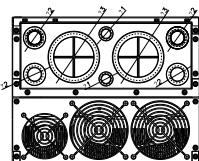
D1\*: Flange mount

## Frame E2



### MODEL

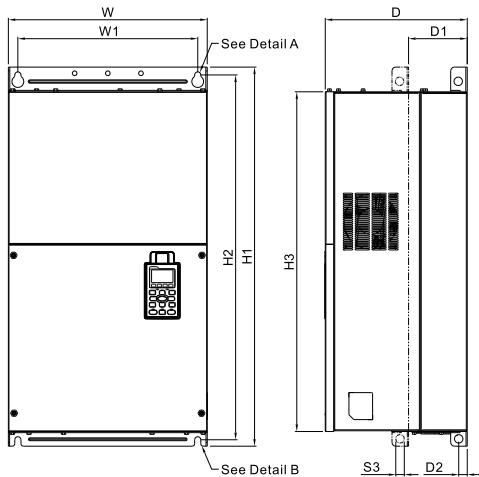
VFD450CH23A-21  
VFD550CH23A-21  
VFD900CH43A-21  
VFD1100CH43A-21



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	18.0	22.0	34.0
	inch	14.57	28.18	11.81	13.19	23.19	22.05	20.80	5.63	0.71	0.51	0.7	0.87	1.34

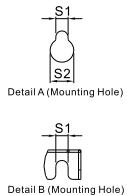
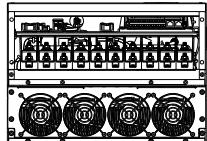
D1\*: Flange mount

## Frame F1



### MODEL

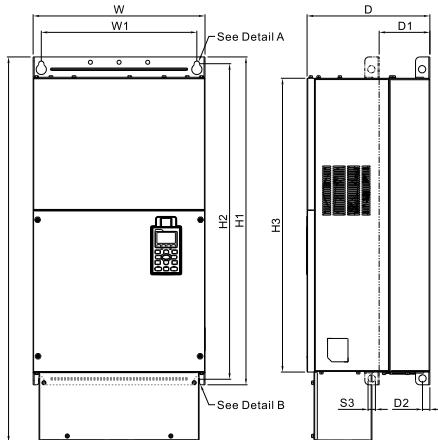
VFD750CH23A-00  
VFD1320CH43A-00



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	717.0	124.0	18.0	13.0	25.0	18.0	-	-
	inch	16.54	-	11.81	14.96	31.50	30.32	28.23	4.88	0.71	0.51	0.98	0.71	-	-

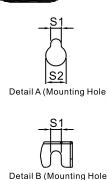
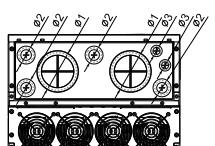
D1\*: Flange mount

## Frame F2



### MODEL

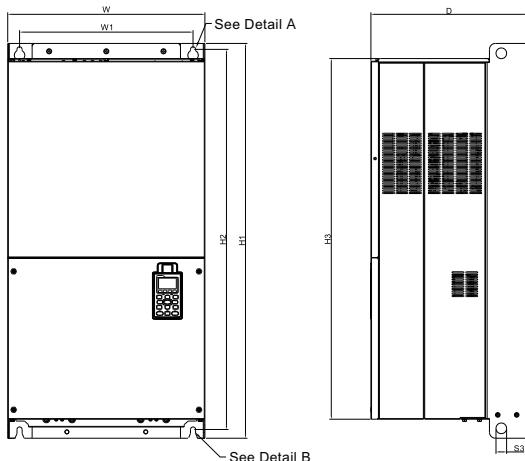
VFD750CH23A-21  
VFD1320CH43A-21



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	717.0	124.0	18.0	13.0	25.0	18.0	92.0	35.0
	inch	16.54	37.00	11.81	14.96	31.5	30.32	28.23	4.88	0.71	0.51	0.98	0.71	3.62	1.38

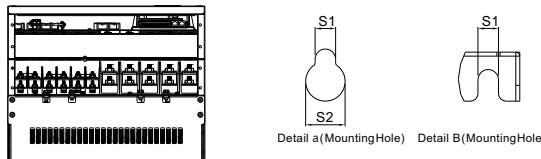
D1\*: Flange mount

## Frame G1



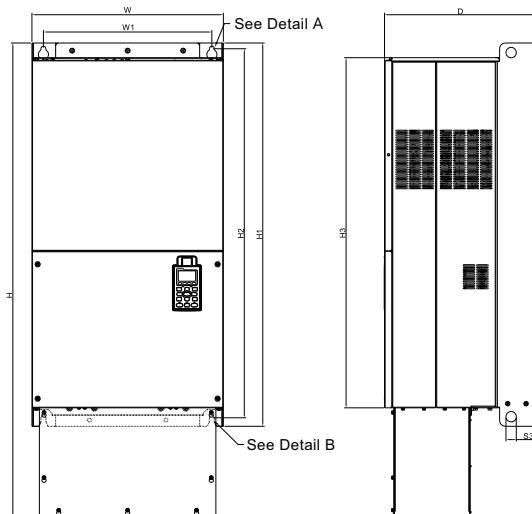
### MODEL

VFD1600CH43A-00  
VFD1850CH43A-00  
VFD2200CH43A-00



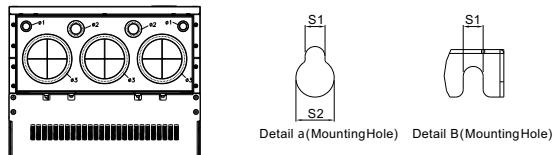
Frame	W	H	D	W1	H1	H2	H3	S1	S2	S3	Ø1	Ø2	Ø3
G1	mm	500.0	-	397.0	440.0	1000.0	963.0	913.6	13.0	26.5	27.0	-	-
	inch	19.69	-	15.63	217.32	39.37	37.91	35.97	0.51	1.04	1.06	-	-

## Frame G2



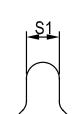
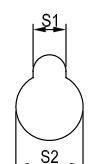
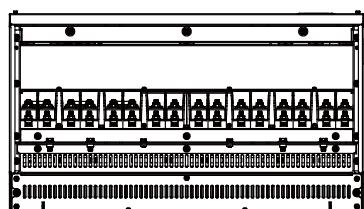
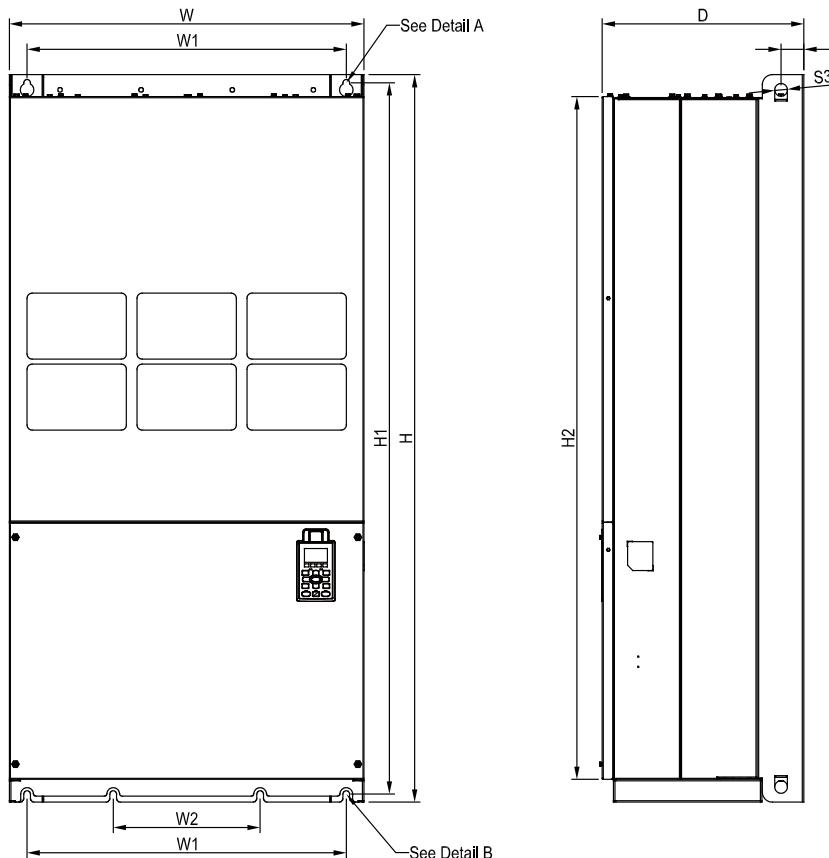
### MODEL

VFD1600CH43A-21  
VFD1850CH43A-21  
VFD2200CH43A-21



Frame	W	H	D	W1	H1	H2	H3	S1	S2	S3	Ø1	Ø2	Ø3
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
	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

## Frame H1



See Detail A (Mounting Hole)

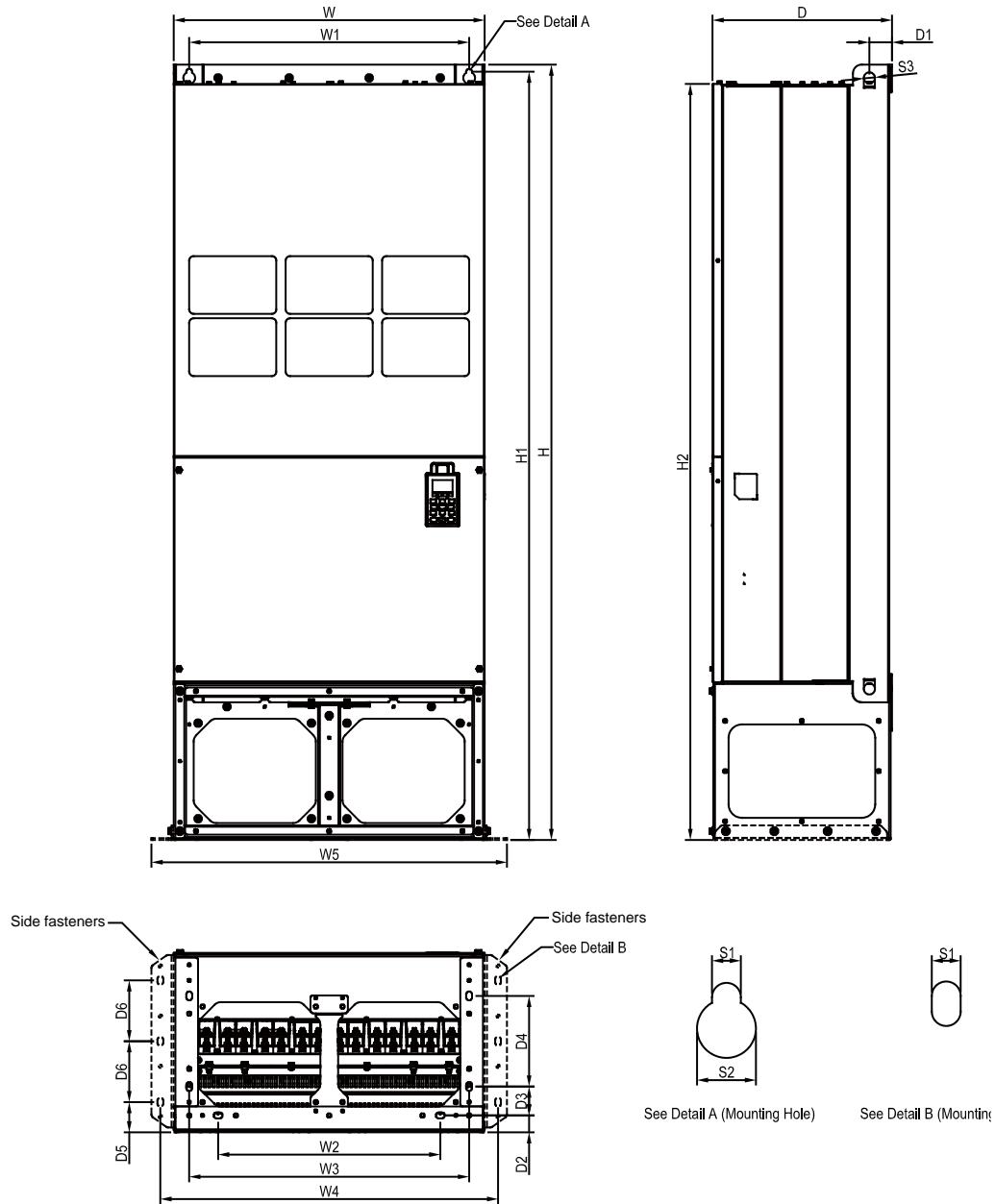
See Detail B (Mounting Hole)

### MODEL

VFD2800CH43A-00

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	1346.0	-	-
	inch	27.56	56.5	15.67	24.8	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

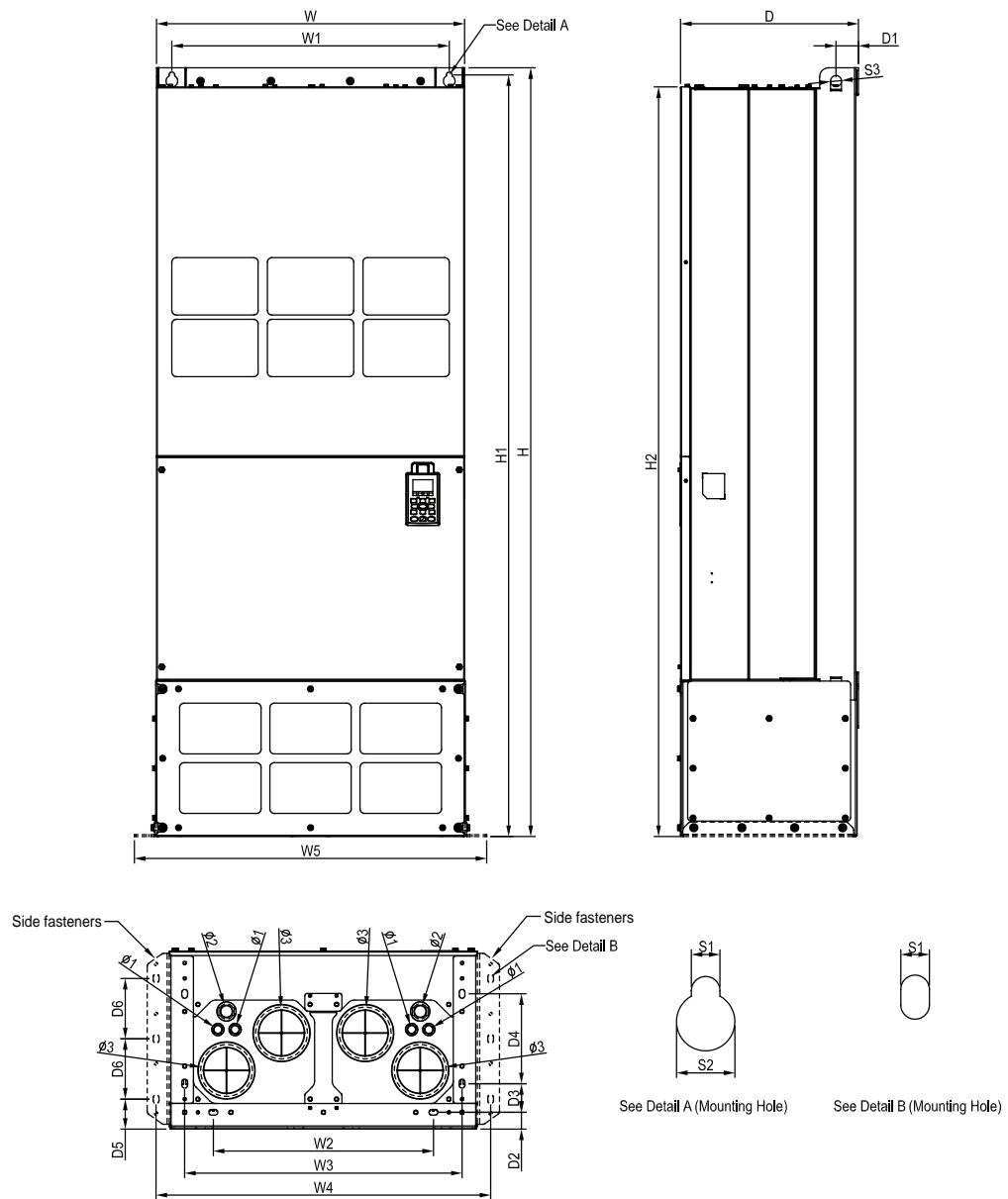


### MODEL

VFD2800CH43C-00

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	24.8	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**

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VFD2800CH43C-21

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	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
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

# Accessories

## ■ EMC-PG01L / EMC-PG02L

Terminals		Description
 Set by Pr.10-00 ~ 10-02	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
	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 <sub>DC</sub> Max. output current: 50mA 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

Terminals		Description
 Set by Pr.10-00 ~ 10-02	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
	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
PG OUT	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

Terminals		Description
 Set by Pr.10-00 ~ 10-02	R1-R2	Resolver output power 7Vrms, 10kHz
	S1, S2, S3, S4	Resolver input signal 3.5±0.175Vrms, 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	PG card output signals. Division frequency function: 1 ~ 255 times Max. output voltage for Line driver: 5V <sub>DC</sub> Max. output current: 50mA 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 **S**: Standard UVW Output Encoder; **D**: Delta Encoder



**Set by**  
**Pr.10-00 ~ 10-02**

Terminals		Description
<b>PG1</b>	<b>VP</b>	Output voltage for power: +5V/+12V±5% (use FSW3 to switch +5V/+12V) Max. output current: 200mA
	<b>DCM</b>	Common for power and signal
	<b>A1, /A1, B1, /B1, Z1, /Z1</b>	Encoder input signal (Line Driver) 1-phase or 2-phase input. Max. input frequency: 300KHz
	<b>U1, /U1, V1, /V1, W1, /W1</b>	Encoder input signal
<b>PG2</b>	<b>A2, /A2, B2, /B2</b>	Pulse input signal Open collector input: +5V/+24V (Note1) 1-phase or 2-phase input Max. input frequency: 300KHz
<b>PG OUT</b>	<b>AO, /AO, BO, /BO, ZO, /ZO, SG</b>	PG card output signals. Division frequency function: 1 ~ 255 times Max. output voltage for Line driver: 5V <sub>DC</sub> Max. output current: 50mA 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 ~ 15mA and install a pull-up resistor

- [5V]** Recommend pull-up resistor: 100 ~ 220Ω, 1/2W and above
- [12V]** Recommend pull-up resistor: 510 ~ 1.35kΩ, 1/2W and above
- [24V]** Recommend pull-up resistor: 1.8k ~ 3.3kΩ, 1/2W and above

## ▪ EMC-D42A



**I/O Extension Card**

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

## ▪ EMC-D611A



**I/O Extension Card**

Terminals		Description
<b>AC</b>		AC power common for multi-function input terminal (Neutral)
<b>MI10 ~ Mi15</b>		Refer to Pr. 02-26~Pr. 02-31 for multi-function input selection Input voltage: 100~130V <sub>AC</sub> ; Input frequency: 57~63Hz Input impedance: 27Kohm Terminal response time: ON: 10ms; OFF: 20ms

## ■ EMC-R6AA

Terminals	Description
RA10 ~ RA15 RC10 ~ RC15	<p>Refer to Pr. 02-36 ~ Pr. 02-41 for multi-function output selection</p> <p>Resistive load: 3A(N.O.)/250V<sub>AC</sub> 5A(N.O.)/30V<sub>DC</sub></p> <p>Inductive load (COS 0.4) 2.0A(N.O.)/250V<sub>AC</sub> 2.0A(N.O.)/30V<sub>DC</sub></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
AVI10 AVI11	<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</p> <p>ACI: Input 0 ~ 20mA / 4 ~ 20mA</p>
AFM10 AFM11	<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</p> <p>ACO: Output 0 ~ 20.0mA / 4.0 ~ 20.0mA</p>
ACM	Analog signal common terminal

## ■ EMC-BPS01

Terminals	Description
24V GND	<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: 24V<sub>DC</sub> ±5%</p> <p>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-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. 12 Mbps

### PROFIBUS DP Connector

### Communication

Interface	DB9 connector	Message type	Cyclic data exchange
Transmission method	High-speed RS-485	Module name	CMC-PD01
Transmission cable	Shielded twisted pair cable	GSD document	DELA08DB.GSD
Electrical isolation	500 V <sub>DC</sub>	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 (bit per second)

## ■ 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-EC01 NEW



### Features

- ▶ Supports EtherCAT 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	100 Mbps
Number of ports	2 Ports	Network protocol	EtherCAT
Transmission method	IEEE 802.3, IEEE 802.3u		
Transmission cable	Category 5e shielding 100 M		

## ■ CMC-EIP01



### Features

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

## Network Interface

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

## ■ 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 AC motor drive
- ▶ Power supplied from AC motor drive

## DeviceNet Connector

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

## DeviceNet Connector

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

## ■ EMC-COP01

### 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-

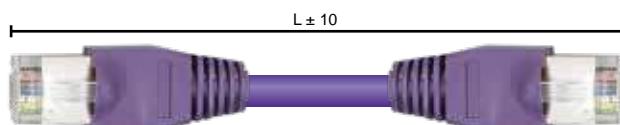
## Network Interface

<b>Interface</b>	RJ-45
<b>Number of ports</b>	1 Port
<b>Transmission method</b>	CAN
<b>Transmission cable</b>	CAN standard cable
<b>Transmission speed</b>	50Kbps, 100Kbps, 125Kbps, 250Kbps, 500Kbps, 1Mbps
<b>Communication protocol</b>	CANopen

## ▪ 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 / EtherCAT 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
CANopen/DeviceNet TAP	UC-EMC200-02A	EtherNet/EtherCAT cable, Shielding	20m
	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
PROFIBUS Cable	TAP-CN03	1 in 4 out, RJ45 connector, built-in 121Ω terminal resistor	1 in 4 out
	UC-PF01Z-01A	PROFIBUS DP cable	305m

Unit: mm



## ▪ CANopen Breakout Box

Model: TAP-CN03

Unit: mm [inch]

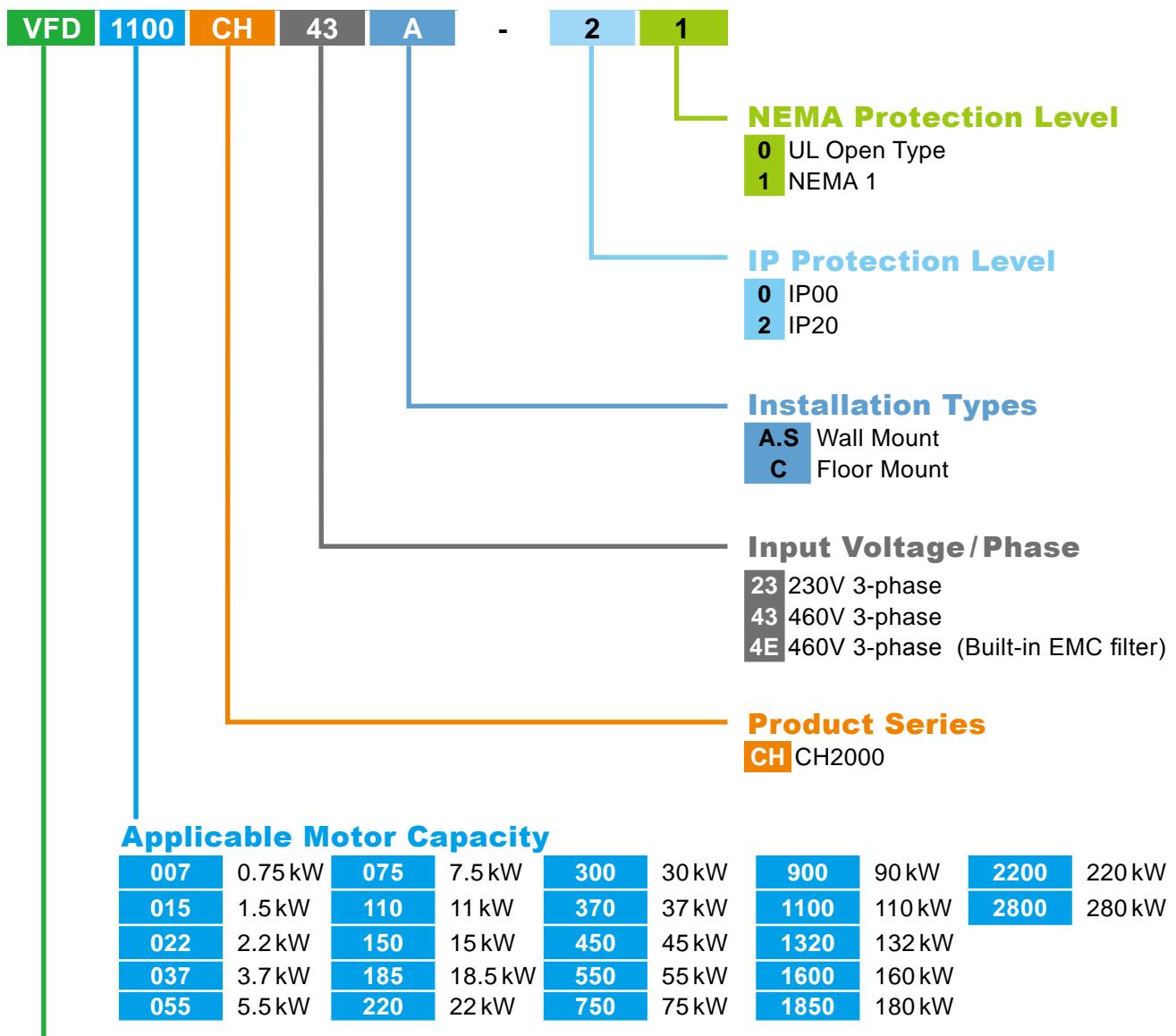


## Ordering Information

Frame Size		Power Range	Models		
Frame A		<b>230V:</b> 0.75 kW ~ 3.7 kW  <b>460V:</b> 0.75 kW ~ 5.5 kW	VFD007CH23A-21 VFD015CH23A-21 VFD022CH23A-21 VFD037CH23A-21 VFD055CH43A-21	VFD007CH43A-21 VFD015CH43A-21 VFD022CH43A-21 VFD037CH43A-21 VFD055CH4EA-21	VFD007CH4EA-21 VFD015CH4EA-21 VFD022CH4EA-21 VFD037CH4EA-21 VFD055CH4EA-21
Frame B		<b>230V:</b> 5.5 kW ~ 11 kW  <b>460V:</b> 7.5 kW ~ 15 kW	VFD055CH23A-21 VFD075CH23A-21 VFD110CH23A-21	VFD075CH43A-21 VFD110CH43A-21 VFD150CH43A-21	VFD075CH4EA-21 VFD110CH4EA-21 VFD150CH4EA-21
Frame C		<b>230V:</b> 15 kW ~ 18.5 kW  <b>460V:</b> 18.5 kW ~ 30 kW	VFD150CH23A-21 VFD185CH23A-21	VFD185CH43A-21 VFD220CH43A-21 VFD300CH43A-21	VFD185CH4EA-21 VFD220CH4EA-21 VFD300CH4EA-21
Frame D		<b>230V:</b> 22 kW ~ 37 kW  <b>460V:</b> 37 kW ~ 75 kW	<b>Frame D1:</b> VFD220CH23A-00 VFD300CH23A-00 VFD370CH23A-00 VFD450CH43A-00 VFD550CH43A-00 VFD750CH43A-00	<b>Frame D2:</b> VFD220CH23A-21 VFD300CH23A-21 VFD370CH23A-21 VFD450CH43A-21 VFD550CH43A-21 VFD750CH43A-21	<b>Frame D0-2:</b> VFD370CH43S-21
Frame E		<b>230V:</b> 45 kW ~ 55 kW  <b>460V:</b> 90 kW ~ 110 kW	<b>Frame E1:</b> VFD450CH23A-00 VFD550CH23A-00 VFD900CH43A-00 VFD1100CH43A-00	<b>Frame E2:</b> VFD450CH23A-21 VFD550CH23A-21 VFD900CH43A-21 VFD1100CH43A-21	
Frame F		<b>230V:</b> 75 kW  <b>400V:</b> 132 kW	<b>Frame F1:</b> VFD750CH23A-00 VFD1320CH43A-00	<b>Frame F2:</b> VFD750CH23A-21 VFD1320CH43A-21	
Frame G		<b>460V:</b> 160 kW ~ 220 kW	<b>Frame G1:</b> VFD1600CH43A-00 VFD1850CH43A-00 VFD2200CH43A-00	<b>Frame G2:</b> VFD1600CH43A-21 VFD1850CH43A-21 VFD2200CH43A-21	

Frame Size		Power Range	Models		
Frame H		460V: 280 kW	Frame H1:	Frame H2:	Frame H3:
			VFD2800CH43A-00	VFD2800CH43C-00	VFD2800CH43C-21

## Model Name Explanation



### Product

Variable Frequency Drive



Smarter. Greener. Together.

## Industrial Automation Headquarters

### **Delta Electronics, Inc.**

Taoyuan Technology Center  
No.18, Xinglong Rd., Taoyuan District,  
Taoyuan City 33068, Taiwan  
TEL: 886-3-362-6301 / FAX: 886-3-371-6301

### **Asia**

#### **Delta Electronics (Shanghai) Co., Ltd.**

No.182 Minyu Rd., Pudong Shanghai, P.R.C.  
Post code : 201209  
TEL: 86-21-6872-3988 / FAX: 86-21-6872-3996  
Customer Service: 400-820-9595

#### **Delta Electronics (Japan), Inc.**

Tokyo Office  
Industrial Automation Sales Department  
2-14 Shibadaimon, Minato-ku  
Tokyo, Japan 105-0012  
TEL: 81-3-5733-1155 / FAX: 81-3-5733-1255

#### **Delta Electronics (Korea), Inc.**

Seoul Office  
1511, 219, Gasan Digital 1-Ro., Geumcheon-gu,  
Seoul, 08501 South Korea  
TEL: 82-2-515-5305 / FAX: 82-2-515-5302

#### **Delta Energy Systems (Singapore) Pte Ltd.**

4 Kaki Bukit Avenue 1, #05-04, Singapore 417939  
TEL: 65-6747-5155 / FAX: 65-6744-9228

#### **Delta Electronics (India) Pvt. Ltd.**

Plot No.43, Sector 35, HSIIDC Gurgaon,  
PIN 122001, Haryana, India  
TEL: 91-124-4874900 / FAX : 91-124-4874945

#### **Delta Electronics (Thailand) PCL.**

909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z),  
Pattana 1 Rd., T.Phraaksa, A.Muang,  
Samutprakarn 10280, Thailand  
TEL: 66-2709-2800 / FAX : 662-709-2827

#### **Delta Energy Systems (Australia) Pty Ltd.**

Unit 20-21/45 Normanby Rd., Notting Hill Vic 3168, Australia  
TEL: 61-3-9543-3720

### **Americas**

#### **Delta Electronics (Americas) Ltd.**

Raleigh Office  
P.O. Box 12173, 5101 Davis Drive,  
Research Triangle Park, NC 27709, U.S.A.  
TEL: 1-919-767-3813 / FAX: 1-919-767-3969

#### **Delta Greentech (Brasil) S/A**

São Paulo Office  
Rua Itapeva, 26 – 3° Andar - Bela Vista  
CEP: 01332-000 – São Paulo – SP - Brasil  
TEL: 55-11-3530-8642 / 55-11-3530-8640

#### **Delta Electronics International Mexico S.A. de C.V.**

Mexico Office  
Via Dr. Gustavo Baz No. 2160, Colonia La Loma,  
54060 Tlalnepantla Estado de Mexico  
TEL: 52-55-2628-3015 #3050/3052

### **EMEA**

#### **Headquarters: Delta Electronics (Netherlands) B.V.**

Sales: Sales.IA.EMEA@deltaww.com  
Marketing: Marketing.IA.EMEA@deltaww.com  
Technical Support: iatechnicalsupport@deltaww.com  
Customer Support: Customer-Support@deltaww.com  
Service: Service.IA.emea@deltaww.com  
TEL: +31(0)40 800 3800

#### **BENELUX: Delta Electronics (Netherlands) B.V.**

De Witbogt 20, 5652 AG Eindhoven, The Netherlands  
Mail: Sales.IA.Benelux@deltaww.com  
TEL: +31(0)40 800 3800

#### **DACH: Delta Electronics (Netherlands) B.V.**

Coesterweg 45, D-59494 Soest, Germany  
Mail: Sales.IA.DACH@deltaww.com  
TEL: +49(0)2921 987 0

#### **France: Delta Electronics (France) S.A.**

ZI du bois Challand 2, 15 rue des Pyrénées,  
Lisses, 91090 Evry Cedex, France  
Mail: Sales.IA.FR@deltaww.com  
TEL: +33(0)1 69 77 82 60

#### **Iberia: Delta Electronics Solutions (Spain) S.L.U**

Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.  
Hormigueras – P.I. de Vallecas 28031 Madrid  
TEL: +34(0)91 223 74 20

Carrer Llacuna 166, 08018 Barcelona, Spain

Mail: Sales.IA.Iberia@deltaww.com

#### **Italy: Delta Electronics (Italy) S.r.l.**

Ufficio di Milano Via Senigallia 18/2 20161 Milano (MI)  
Piazza Grazioli 18 00186 Roma Italy  
Mail: Sales.IA.Italy@deltaww.com  
TEL: +39 02 64672538

#### **Russia: Delta Energy System LLC**

Vereyskaya Plaza II, office 112 Vereyskaya str.  
17 121357 Moscow Russia  
Mail: Sales.IA.RU@deltaww.com  
TEL: +7 495 644 3240

#### **Turkey: Delta Greentech Elektronik San. Ltd. Sti. (Turkey)**

Şerifali Mah. Hendem Cad. Kule Sok. No:16-A  
34775 Ümraniye – İstanbul  
Mail: Sales.IA.Turkey@deltaww.com  
TEL: + 90 216 499 9910

#### **GCC: Delta Energy Systems AG (Dubai BR)**

P.O. Box 185668, Gate 7, 3rd Floor, Hamarain Centre  
Dubai, United Arab Emirates  
Mail: Sales.IA.MEA@deltaww.com  
TEL: +971(0)4 2690148

#### **Egypt + North Africa: Delta Electronics**

511 Cairo Business Plaza, North 90 street,  
New Cairo, Cairo, Egypt  
Mail: Sales.IA.MEA@deltaww.com