



Automation for a Changing World

Delta High Performance Compact Drive MH300 Series



www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

Compact and Intelligent

The new standard for micro drives

The automation industry today continues to face challenges such as increasing competition and rising costs. In addition to improving productivity and reducing labor, the driving force for automation is the shift to higher efficiency, optimal quality, and most importantly, flexibility and compatibility for a wide range of applications.

The MH300 series is the new generation high performance compact vector control drive that inherits Delta's drive technology with more advanced functions included for higher application flexibility -- all in a compact drive that has been reduced 40% in size.

A variety of essential functions are built-in as standard, including: PLC capacity for simple programming needs, communication slots for various communication cards, and a USB port to make data uploads and downloads fast and easy. This saves the need for additional hardware, while providing more installation space for the power cabinet. Other key features include: Support for both IM and PM motor control for application flexibility, an STO function to ensure worry-free operation while protecting facilities from damage, and a simplified wiring process with a new screwless wiring design of terminal blocks for quick installation.

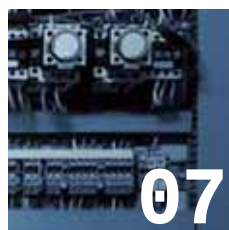
Saving space, reducing setup and wiring time, and providing high efficiency and a highly stable system, the MH300 is your key to improving market competitiveness and ensuring success.





Models Overview

Standard Models
High Speed Models
Exterior Design and Interfaces
Optional Cards



Optimized Space Utilization

Compact Design
Side-by-Side Installation



Outstanding Drive Performance

Supports IM and PM Motors
High Starting Torque
Enhanced Braking Capability
Fast Response to Load Changes
Deceleration Energy Backup (DEB)



Strong System Support

Multi-motor Control
Pulse Control
Built-in PLC
High Speed Applications
24 V_{DC} Power Supply
High Overload Capability
Built-in Brake Chopper
Closed Loop Control
Supports Various Communications



Stable, Safe and Reliable

Safety Standards Compliance
Enhanced Conformal Coating
Built-in EMC Filter
IP40 Models



Easy to Install

Application Parameter Settings
Built-in USB port
Screwless Wiring of Control Terminal



Wide Range of Applications

Machine Tools
Woodworking Machines
Automatic Tool Changers (ATC)
Water Pumps
Packaging Machines
Textile Machines



Specifications

Product Specifications
Wiring
Dimensions
Accessories
Model Name Explanation
Ordering Information

Models Overview



Standard Models

115V single-phase

Applicable Motor Output (kW)	0.2	0.4	0.75
Applicable Motor Output (HP)	0.25	0.5	1
Frame Size	A		C

230V single-phase

Applicable Motor Output (kW)	0.2	0.4	0.75	1.5	2.2
Applicable Motor Output (HP)	0.25	0.5	1	2	3
Frame Size	A		B	C	

230V single-phase (Built-in EMC filter)

Applicable Motor Output (kW)	0.2	0.4	0.75	1.5	2.2
Applicable Motor Output (HP)	0.25	0.5	1	2	3
Frame Size	B			C	

230V 3-phase

Applicable Motor Output (kW)	0.2	0.4	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15
Applicable Motor Output (HP)	0.25	0.5	1	2	3	5	7.5	10	15	20
Frame Size	A			B	C		D	E		F

460V 3-phase

Applicable Motor Output (kW)	0.4	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)	0.5	1	2	3	5	7.5	10	15	20	25	30
Frame Size	A		B	C		D		E		F	

460V 3-phase (Built-in EMC filter)

Applicable Motor Output (kW)	0.4	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)	0.5	1	2	3	5	7.5	10	15	20	25	30
Frame Size	B			C		D		E		F	

High Speed Models



230V single-phase

Applicable Motor Output (kW)	1.5	2.2
Applicable Motor Output (HP)	2	3
Frame Size	C	

230V single-phase (Built-in EMC filter)

Applicable Motor Output (kW)	1.5	2.2
Applicable Motor Output (HP)	2	3
Frame Size	C	

230V 3-phase

Applicable Motor Output (kW)	1.5	2.2	3.7/4	5.5	7.5	11	15
Applicable Motor Output (HP)	2	3	5	7.5	10	15	20
Frame Size	B	C		D	E		F

460V 3-phase

Applicable Motor Output (kW)	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)	2	3	5	7.5	10	15	20	25	30
Frame Size	B	C		D		E		F	

460V 3-phase (Built-in EMC filter)

Applicable Motor Output (kW)	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)	2	3	5	7.5	10	15	20	25	30
Frame Size	B	C		D		E		F	

Models Overview



Hardware Design

Compact design and user-friendly interface

Removable Keypad

Press to remove; for remote operation away from drive



Built-in USB Port

Easy and fast programming setting, update and real-time monitoring and tuning



Specified Product Label

Input/output current, voltage and protection rating

Screwless Top Cover Design

Press on both side tabs to remove the cover



Removable Fan

Easy to replace and maintain for a longer lifetime



5 digits 16 segments LCD display, quick setting wheel dial, left-shift function key

Removable RFI Jumper

Applicable for different application needs



Option Cards

A wide selection of option cards for highly flexible applications

PG Cards

ABZ Signal
Line driver



ABZ Signal
Open collector



Resolver
PM motors



I/O Cards

I/O



Analog



Relay Cards

Form A *3



Form C *2



External Power Supply Card (DC 24V)



Communication Cards

PROFIBUS DP



DeviceNet



MODBUS TCP



EtherNet/IP



EtherCAT



Built-in I/O slot *2



Optimized Space Utilization

Compact Design

Provides more powerful features in smaller sizes with reduction up to 40% that effectively optimizes the installation space.



Side-by-Side Installation

Supports side-by-side installation with operating temperatures of $-20^{\circ}\text{C} \sim 40^{\circ}\text{C}$. Enables highly flexible and highly efficient installation.

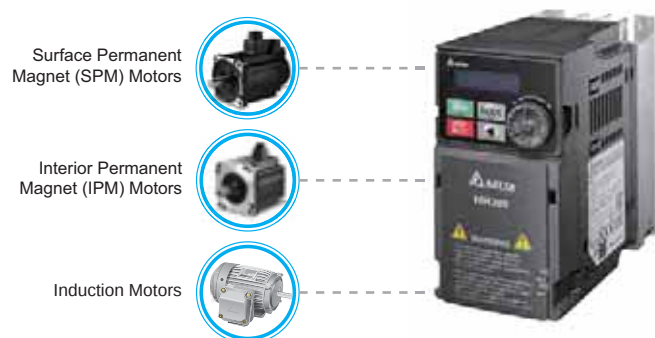
Substantial savings in space!



Outstanding Drive Performance

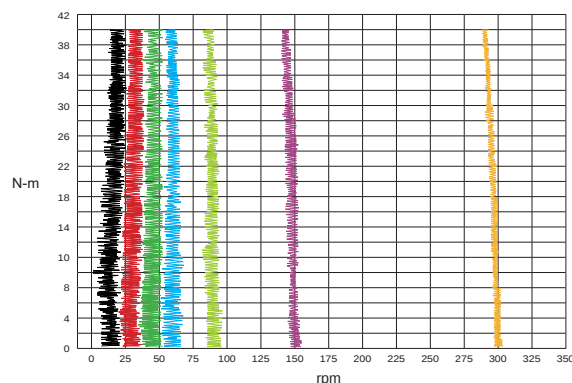
Supports IM and PM Motors

Supports 4 independent induction motor control parameter sets.



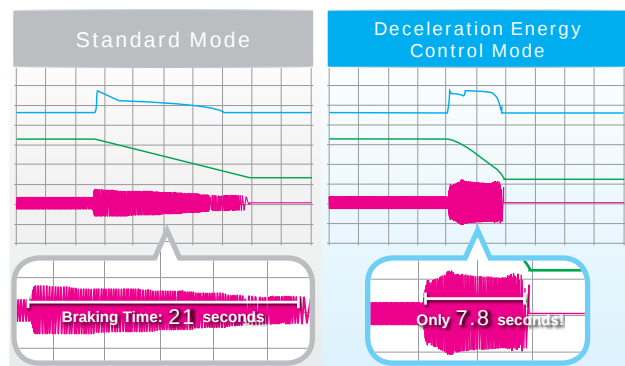
High Starting Torque

Delivers 200% high starting torque with a low speed control of 0.5Hz. This feature provides outstanding machine stability and is suitable for dynamic loading applications.



Enhanced Braking Capability

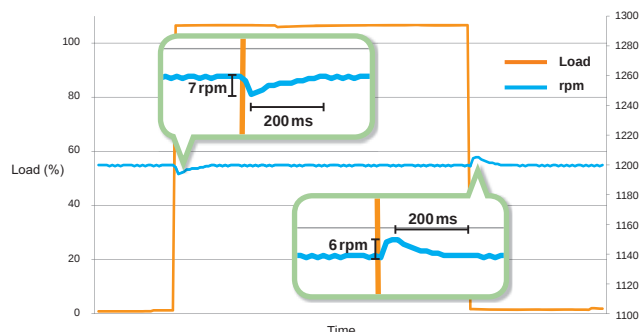
Provides Deceleration Energy Control Mode to shorten braking time by adjusting the motor speed and current. This feature replaces the need for braking resistors.



* Actual deceleration performance would depends on different system loads

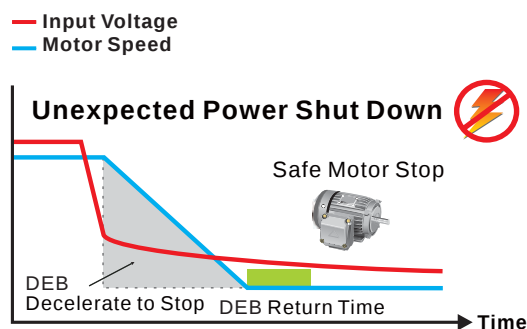
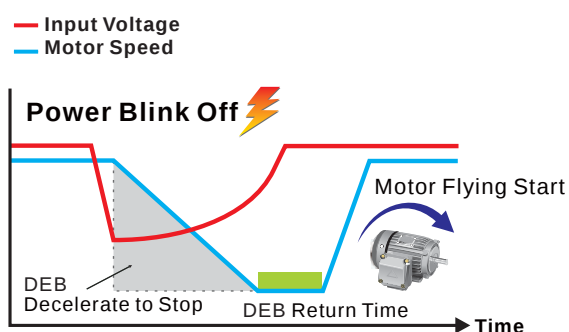
Fast Response to Load Impact

Fast response to sudden load impact on speeds to ensure stable operation and high quality output.



Deceleration Energy Backup (DEB)

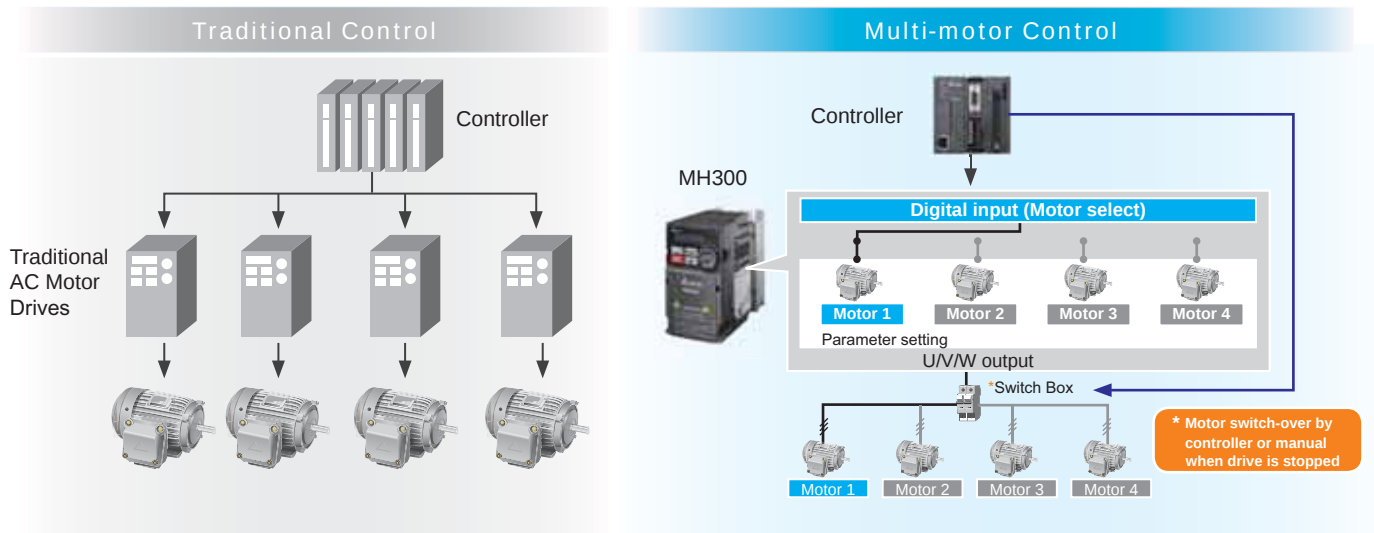
Controls the motor deceleration to a stop when an unexpected power shut-down occurs to prevent mechanical damage. When power resumes, the motor will accelerate to its previous speed.



Strong System Support

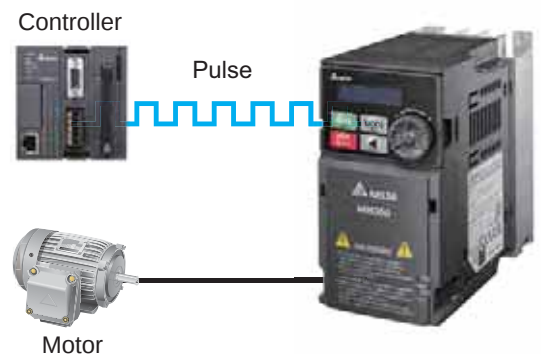
Multi-motor Control

Supports 8 induction motors switching control.



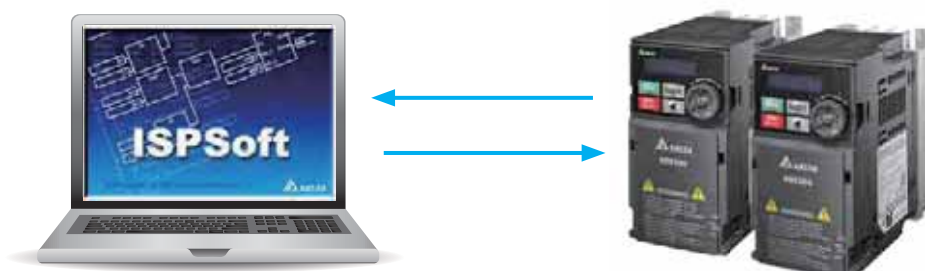
Pulse Input

Supports a dual pulse input signal from controller or a feedback signal from encoder without an additional PG card to achieve simple closed-loop control. Terminal MI7 supports single pulse signal input as a frequency command.



Built-in PLC

Built-in PLC capacity (5k steps) to provide distributed control and independent operation via network connection.



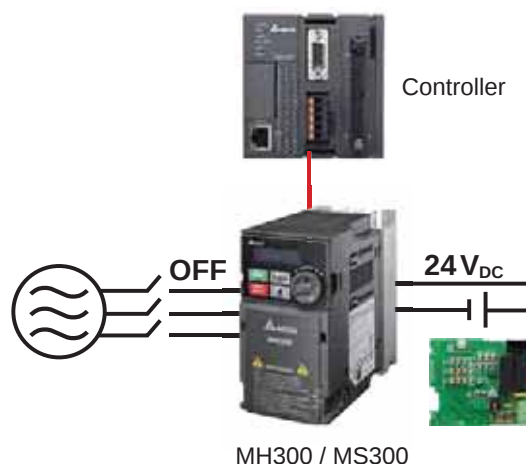
High-Speed Applications

High-speed models are available to support high-speed processing.

Type	Model	Frequency Setting
Standard	VFD □□□ MH □□□□ SAA	0 ~ 599 Hz
High-speed	VFD □□□ MH □□□□ SHA	0 ~ 2000 Hz

DC 24V External Power

External power supply is available when main power failure occurs to ensure uninterrupted communication and to protect the system.



High Overload Capability

- Normal duty: rated current 120% for 60 seconds; 150% for 3 seconds
- Heavy duty: rated current 150% for 60 seconds; 200% for 3 seconds

Closed-Loop Control

Optional PG card is available to support closed-loop control function and providing higher precision of motor speed control.

PG card installation (front side down)

No influence to drive size;
suitable for all space restricted applications



PG card installation (front side up)

Increases the drive size in depth



Built-in Braking Chopper

Larger braking torque capability is provided when using an additional braking resistor.

Versatile Communication Interfaces

Built-in RS-485 (MODBUS) and CANopen communication. Other communication options are available upon selection.

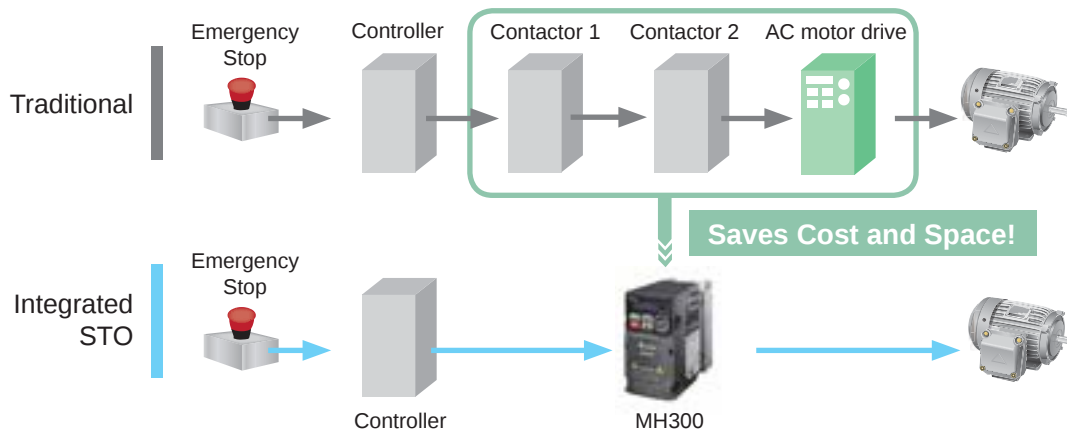
Communication	
MODBUS	Built-in
PROFIBUS DP	Optional
DeviceNet	Optional
MODBUS TCP	Optional
EtherNet/IP	Optional
CANopen	Built-in
EtherCAT	Optional

Stable, Safe and Reliable

Safety Standard

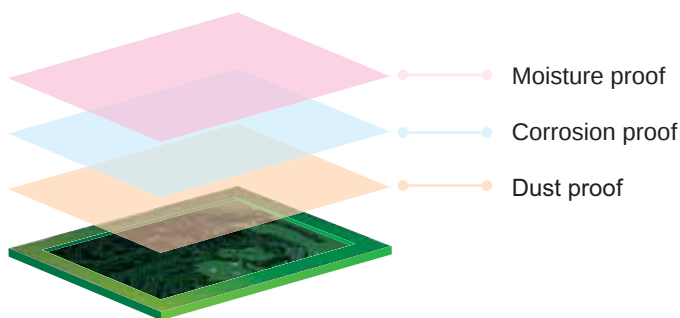
Integrated Safe Torque Off (STO), compliance with:

- ▶ EN ISO 13849-1 Cat3/PLd
- ▶ EN 61508 SIL2
- ▶ EN 60204-1 Category 0
- ▶ EN 62061 SIL CL 2



PCB Coating

100% PCB coating (IEC 60721-3-3 class 3C2 standard) ensures drive operation stability and safety in critical environments.



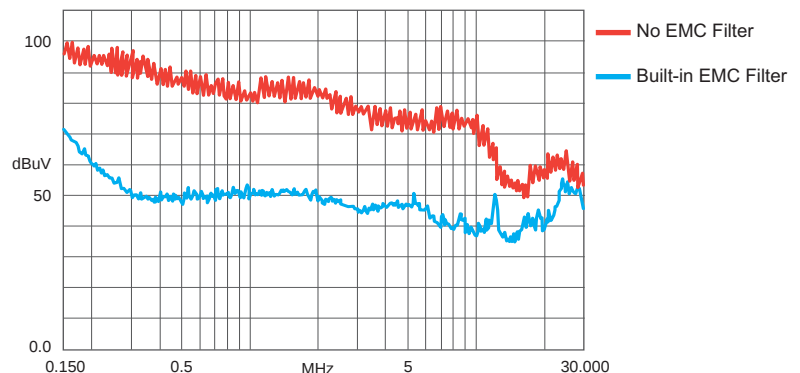
IP 40 Models

Strengthened fan coating and concealed air vent prevent dust and other particles from entering the drive, suitable for critical environment applications.



Built-in EMC Filter

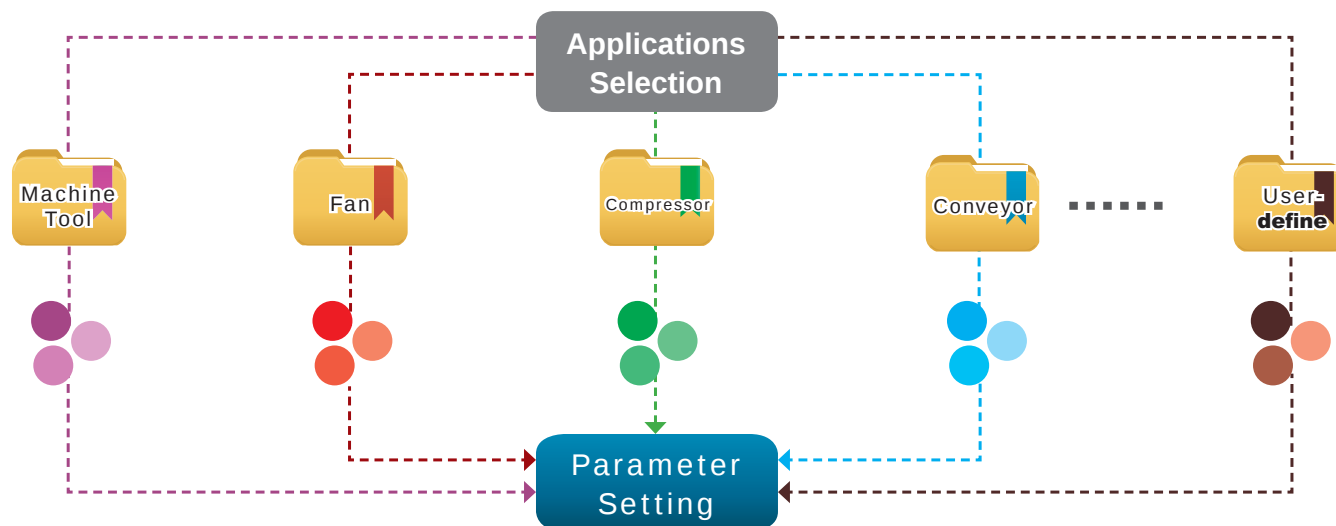
Built-in Class A (C2) standard EMC filter; saves on additional procurement cost and wiring time, and provides more cabinet space for other devices to use.



Easy to Install

Application Groups (Macro)

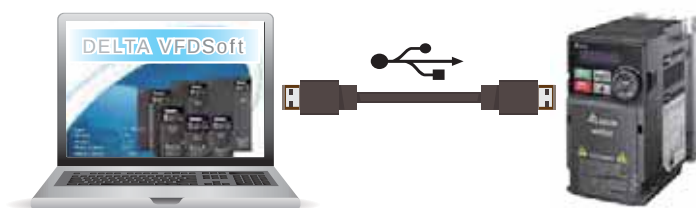
Simplifies the parameter setting process by grouping the parameters for different applications to use.



Built-in USB Port

Built-in USB port facilitates the drive setting, updating, real-time monitoring and system tuning process.

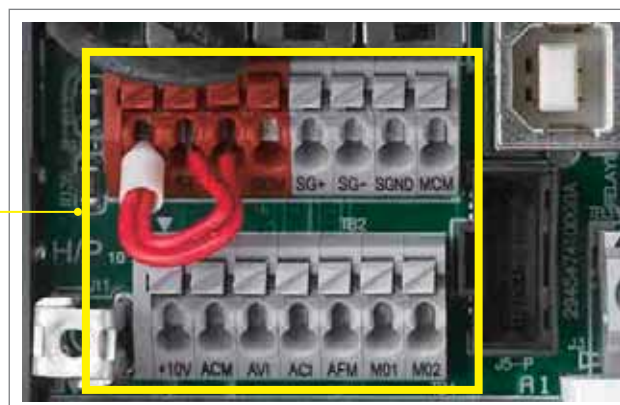
- No need of USB or RS-485 connectors
- Supports offline (drive power off) parameter setting/copying and system update



Screwless Wiring of Control Terminal

Spring clamp terminal blocks provide fast and easy wiring

Saves wiring time



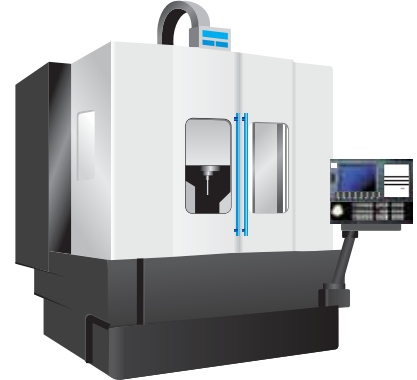
Wide Range of Applications



Machine Tools

Features and Benefits

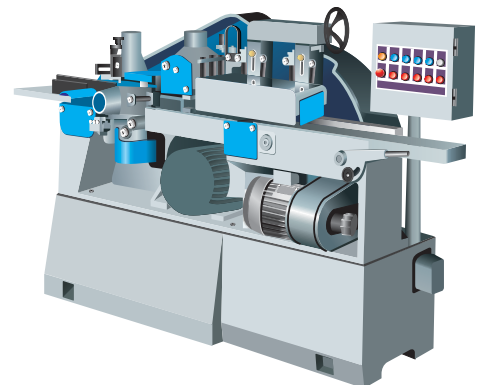
- High-speed models support main spindle 2000Hz frequency output; and is suitable for complex and high precision processing applications
- Timely acceleration/deceleration control to improve machinery operation efficiency
- Built-in braking chopper to save on purchasing cost
- Built-in PLC capacity for flexible application needs
- Built-in STO function ensures operator safety and effectively reduces accident risk
- Provides deceleration to stop function to protect tools from damage and ensure operator safety



Woodworking Machines

Features and Benefits

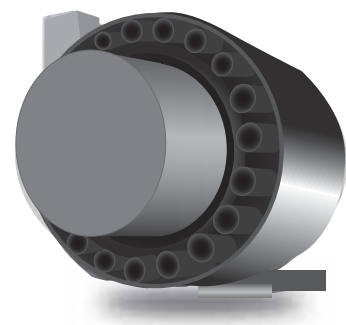
- Timely acceleration/deceleration control, improves machinery operation efficiency
- Built-in STO function ensures operator safety and effectively reduces accident risk
- Built-in PLC capacity saves on purchasing cost
- Built-in EMC filter effectively reduces electromagnetic interference
- Compact in size and weight, easy to install and maintain



Automatic Tool Changers (ATC)

Features and Benefits

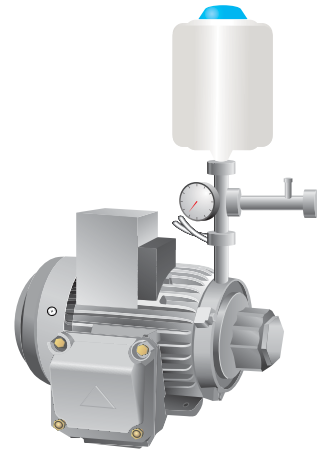
- Compact design of drive provides more cabinet space for other devices to use
- Quick start and timely acceleration/deceleration control function effectively shortens tool changing time and improves system efficiency and productivity
- Simple structure is easy to install and maintain
- Built-in STO function ensures operator safety and effectively reduces accident risk
- Built-in braking chopper, saves on purchasing cost



Pump Applications

Features and Benefits

- Built-in PID feedback control
- Built-in PLC capacity saves on purchasing cost of PLC and simpler wiring
- Supports a wide range of input voltages which are suitable for various types of pumps application and use in different countries
- Deceleration energy control mode shortens deceleration time and reduces braking resistor cost, also provides more space for other devices to use



Packaging Machines

Features and Benefits

- Compact design of drive provides more cabinet space for other devices to use
- Built-in STO function ensures operator safety and effectively reduces accident rate
- Built-in braking chopper saves on system construction cost
- Built-in RS-485 (MODBUS) and various communication cards upon selection (optional)
- High-speed pulse input
- Supports frequency command by pulse input to improve control precision.
- Precise and stable tension control provides high flexibility in using different packaging materials



Textile Machines

Features and Benefits

- IP40 models provide excellent protection from a high dust, fiber or moisture environment
- Improved heatsink design prevents fiber clogging the air way; modular design of fan is easy to clean and provides longer lifetime
- Improved braking capability shortens the deceleration to stop time and is suitable for sudden stop requirements
- Built-in STO function ensures operator safety and effectively reduces accident rate
- Supports both induction motors and PM motors
- Provides deceleration to stop function to protect the equipment from damage when sudden power failure occurs



Specifications

Product Specifications

Single-phase
115V

Models without built-in EMC filter

Frame			A		C
Applicable Motor Output (kW)			0.2	0.4	0.75
Applicable Motor Output (HP)			1/4	1/2	1
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.5	5
	Normal Duty	Rated Output Current (A)	1.8	2.7	5.5
Carrier Frequency (kHz)			2 ~ 15 kHz (default 4 kHz)		
Brake Chopper			Built-in		
DC Reactor			Optional		
AC Reactor			Optional		
Cooling Method			Natural air cooling		Fan cooling
Size: W×H (mm)			68×128		87×157
Size: D (mm)			115	129	152

Single-phase
230V

Models with built-in EMC filter

Frame			B			C	
Applicable Motor Output (kW)			0.2	0.4	0.75	1.5	2.2
Applicable Motor Output (HP)			1/4	1/2	1	2	3
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.8	5	7.5	11
	Normal Duty	Rated Output Current (A)	1.8	3.2	5.2	8.5	12.5
Carrier Frequency (kHz)			2 ~ 15 kHz (default 4 kHz)				
Brake Chopper			Built-in				
DC Reactor			Optional				
AC Reactor			Optional				
Cooling Method			Natural air cooling	Fan cooling			
Size: W×H (mm)			72×142			87×157	
Size: D (mm)			159			179	

Models without an EMC filter

Frame			A	B	C
Cooling Method			Natural air cooling		Fan cooling
Size: W×H (mm)			68×128	68×128	87×157
Size: D (mm)			115	129	152

Product Specifications

3-phase
230 V

30 V

Models without built-in EMC filter													
Frame			A				B	C		D	E		F
Applicable Motor Output (kW)			0.2	0.4	0.75	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15
Applicable Motor Output (HP)			1/4	1/2	1	1	2	3	5	7.5	10	15	20
Inverter Output	Heavy Duty	Rated Output Current (A)	1.6	2.8	5	5	7.5	11	17	25	33	49	65
	Normal Duty	Rated Output Current (A)	1.8	3.2	5.2	5.2	8	12.5	19.5	27	36	51	69
Carrier Frequency (kHz)			2 ~ 15 kHz (default 4 kHz)										
Brake Chopper			Built-in										
DC Reactor			Optional										
AC Reactor			Optional										
Cooling Method			Natural air cooling			Fan cooling							
Size: W×H (mm)			68×128				72×142	87×157		109×207	130×250		175×300
Size: D (mm)			129	129	147	135	143	152		154	185		192

3-phase
460 V

600 V

Models with built-in EMC filter														
Frame			B				C		D		E		F	
Applicable Motor Output (kW)			0.4	0.75	0.75	1.5	2.2	3.7/4	5.5	7.5	11	15	18.5	22
Applicable Motor Output (HP)			1/2	1	1	2	3	5	7.5	10	15	20	25	30
Inverter Output	Heavy Duty	Rated Output Current (A)	1.5	3	3	4.2	5.7	9	13	17.5	25	32	38	45
	Normal Duty	Rated Output Current (A)	1.8	3.3	3.3	4.6	6.5	10.5	14.5	19.8	28	36	41.5	49
Carrier Frequency (kHz)			2 ~ 15 kHz (default 4 kHz)											
Brake Chopper			Built-in											
DC Reactor			Optional											
AC Reactor			Optional											
Cooling Method			Fan cooling											
Size: W×H (mm)			72×142				87×157		109×207		130×250		175×300	
Size: D (mm)			159				179		187		219		244	
Models without an EMC filter														
Frame			A			B	C		D		E		F	
Cooling Method			Natural air cooling		Fan cooling									
Size: W×H (mm)			68×128			72×142	87×157		109×207		130×250		175×300	
Size: D (mm)			129	147	135	143	152		154		185		192	

General Specifications and Accessories

Control Functions	Control Methods	V/F, SVC, V/F+PG, FOC+PG, TQC+PG	
	Applicant Motors	Induction Motor (IM), Interior Permanent Magnet (IPM) Motor, Surface Permanent Magnet (SPM) Motor	
	Max. Output Frequency	Standard model: 599.00 Hz ; High speed model: 2000 Hz (with derating)	
	Starting Torque*	150%/3 Hz (V/f, SVC, V/F+PG control for IM · Heavy duty) 200%/0.5 Hz (FOC control for IM · Heavy duty) 200%/0 Hz (FOC+PG control for IM · Heavy duty) 100%/(1/20 of motor rated frequency) (SVC control for PM · Heavy duty) 150%/0 Hz (FOC control for PM · Heavy duty) 200%/0 Hz (Closed loop vector control w/ PG for PM · Heavy duty)	
	Speed Control Range*	1 : 50 (V/f, SVC, V/F+PG control for IM · Heavy duty) 1 : 100 (FOC control for IM · Heavy duty) 1 : 1000 (FOC+PG control for IM · Heavy duty)	1 : 20 (SVC control for PM · Heavy duty) 1 : 100 (FOC control for PM · Heavy duty) 1 : 1000 (Closed loop vector control w/ PG for PM · Heavy duty)
	Overload Tolerance	Normal Duty (ND): 120% of rated output current for 60 seconds; 150% of rated output current for 3 seconds Heavy Duty (HD): 150% of rated output current for 60 seconds; 200% of rated output current for 3 seconds	
	Frequency Setting Signal	0 ~ +10V/-10V ~ +10V, 4 ~ 20mA/0 ~ +10V, 2 Pulse input (33kHz), 1 Pulse output (33kHz)	
	Main Control Functions	Multiple motor switches (max. 8 independent motor parameter settings), Fast startup, Deceleration Energy Back (DEB) function, Wobble frequency function, Fast deceleration function, Master and Auxiliary frequency source selectable, 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, JOG frequency, Upper/lower limits for frequency reference, DC injection braking at start and stop, PID control, Built-in PLC (5K steps), Positioning function, MODBUS and CANopen is integrated as standard	
Protection Functions	Motor Protection	Overcurrent protection, overvoltage protection, over-temperature protection, phase failure protection	
	Stall Prevention	Stall prevention during acceleration, deceleration and running independently	
Accessories	Communication cards	PROFIBUS DP, DeviceNet, MODBUS TCP, EtherNet/IP, EtherCAT	
	PG cards	EMM-PG01L (ABZ · Line driver) EMM-PG01O (ABZ · Open Collector)	EMM-PG01R (Resolver)
	I/O expansion cards	EMM-D33A (Digital Card - 3in 3out) EMM-A22A (Analog Card - 2in 2out)	EMM-R2CA (Relay Card) EMM-R3AA (Relay Card)
	External DC power supply	EMM-BPS01 (DC 24V power supply card)	
Digital Controller		A removable keypad as standard	
Certifications		UL, CE, RoHS, RCM, TUV, REACH	

*Control accuracy may vary depending on the environment, application conditions, different motors or encoder. For details, please contact our company or your local distributor.

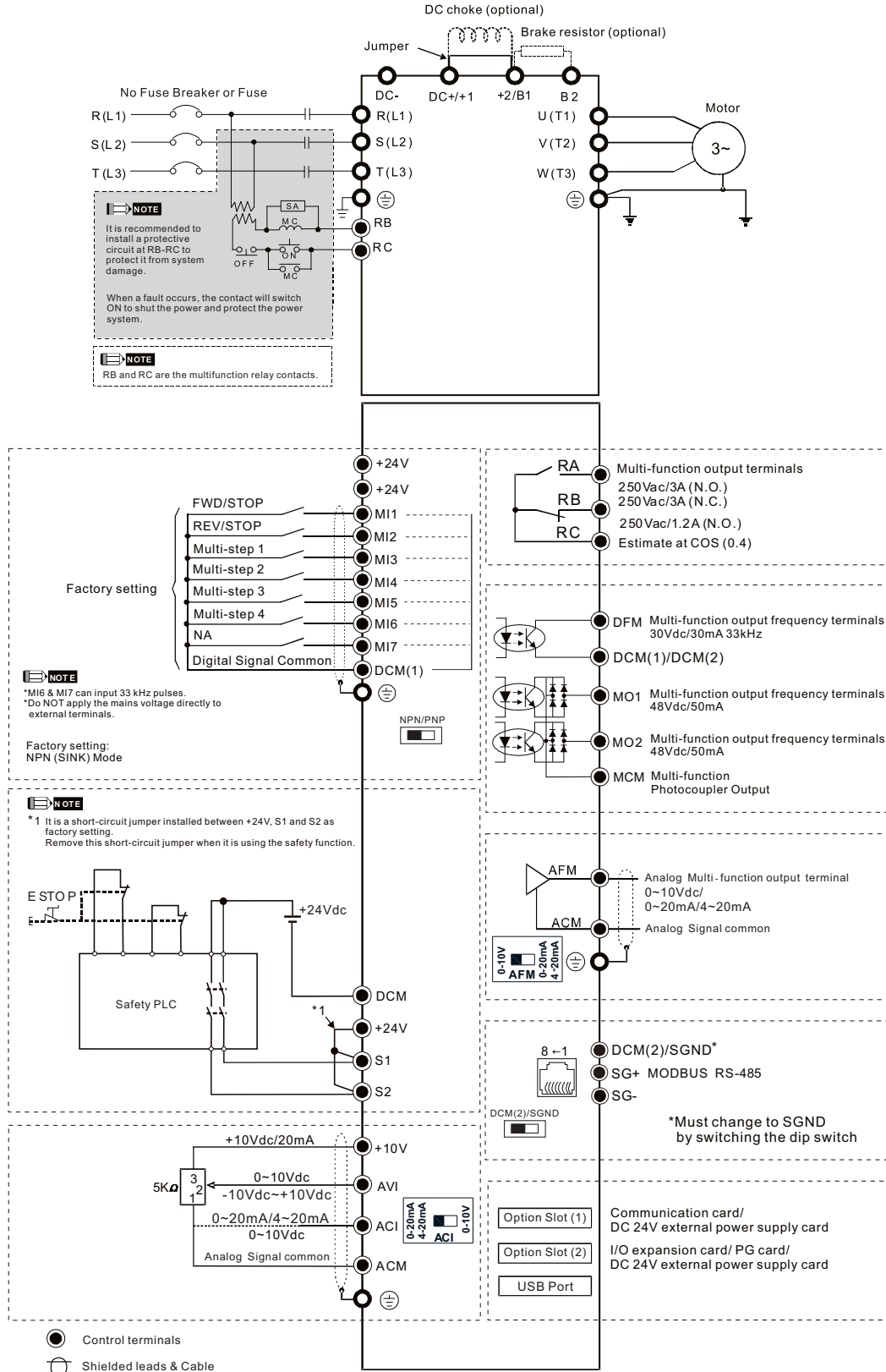
Operating Environment

Operating Environment	Installation Location		IEC60364-1/IEC60664-1 Pollution degree 2, Indoor use only	
	Ambient Temperature	Operation	IP20 / UL Open Type	-20 to 50 °C -20 to 60 °C (needs derating)
			IP40 / NEMA 1 / UL Type 1	-20 to 40 °C
			Zero stacking Installation	-20 to 50 °C (needs derating)
		Storage		-40 to 85 °C
		Transportation		-20 to 70 °C
	Rated Humidity	Operation		Max. 90%
		Storage / Transportation		Max. 95%
	Air Pressure	Operation		86 ~ 106 kPa
		Storage / Transportation		70 ~ 106 kPa
	Pollution Level	Compliance to IEC60721-3-3, 3C2		
	Altitude	An altitude of 0 ~ 1000 m for normal operation (derating is required for installation at an altitude above 1000 m)		
Vibration		Compliance to IEC 60068-2-6		
Shock		Compliance to IEC/EN 60068-2-27		

Please refer to MH300 user manual for more details.

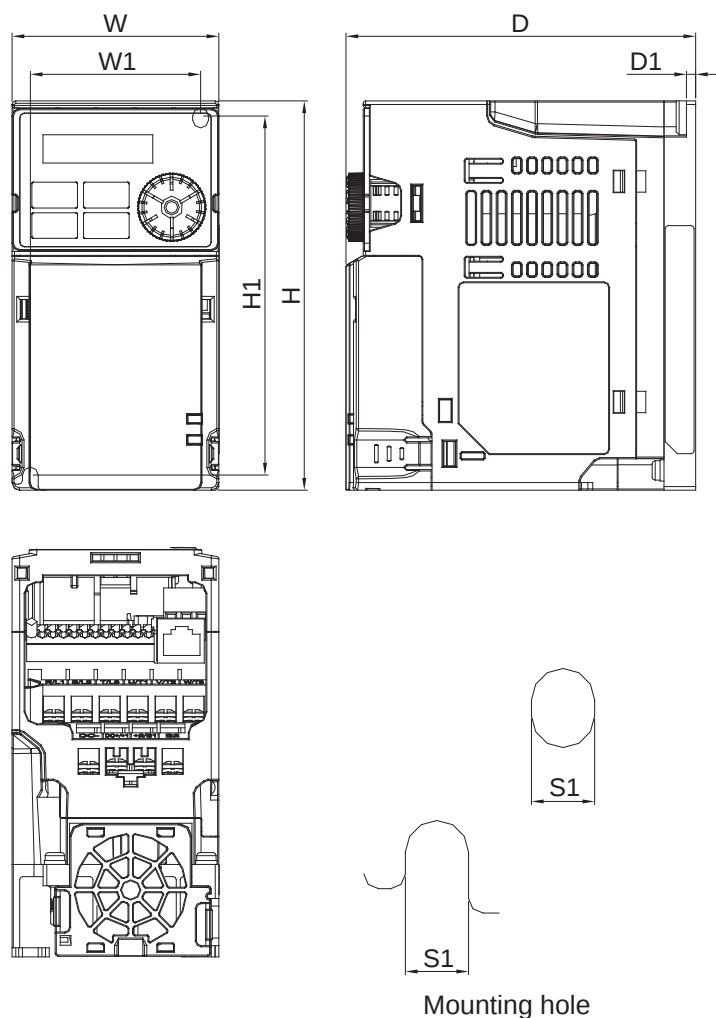
Wiring

Input: Single-phase/ 3-phase power



Dimensions

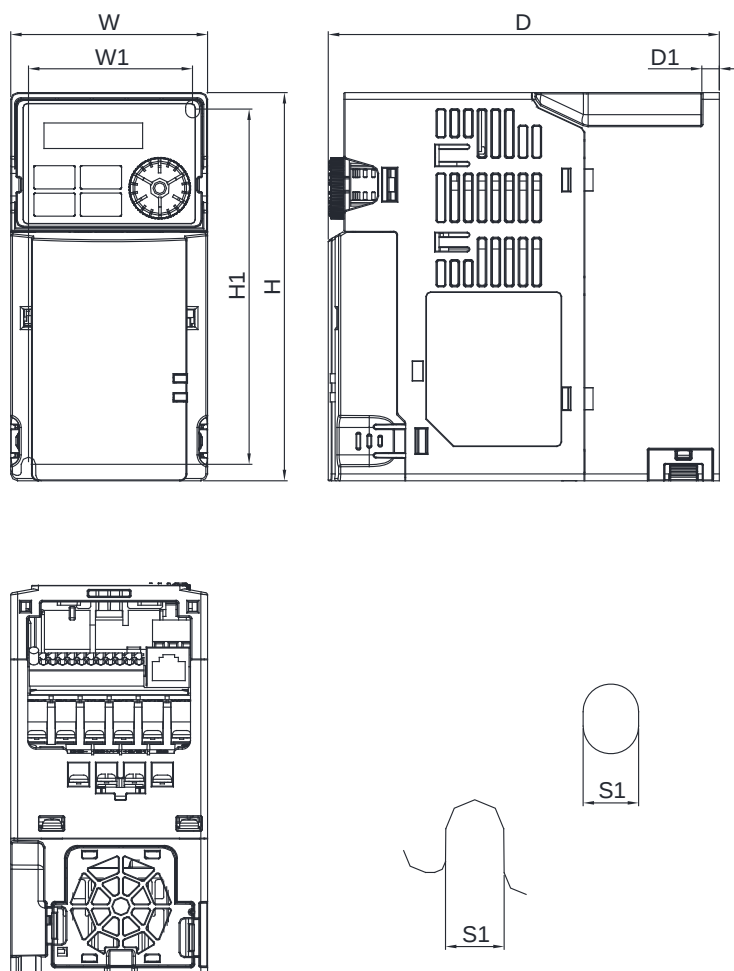
Frame A



MODEL	FRAME A1	FRAME A2	FRAME A3	FRAME A4
VFD1A6MH11ANSAA	VFD2A5MH11ANSAA	VFD2A5MH11ENSAA	VFD5A0MH23ANSAA	VFD5A0MH23ANSNA
VFD1A6MH11ENSAA	VFD2A8MH21ANSAA	VFD2A8MH21ENSAA	VFD5A0MH23ENSAA	VFD5A0MH23ENSNA
VFD1A6MH21ANSAA	VFD1A6MH23ANSAA	VFD1A6MH23ENSAA	VFD3A0MH43ANSAA	VFD3A0MH43ANSNA
VFD1A6MH21ENSAA	VFD2A8MH23ANSAA	VFD2A8MH23ENSAA	VFD3A0MH43ENSAA	VFD3A0MH43ENSNA
	VFD1A5MH43ANSAA	VFD1A5MH43ENSAA		

Frame	W	H	D	W1	H1	D1	S1
A1	mm	68.0	128.0	115.0	56.0	118.0	5.2
	inch	2.68	5.04	4.53	2.20	4.65	0.20
Frame	W	H	D	W1	H1	D1	S1
A2	mm	68.0	128.0	129.0	56.0	118.0	5.2
	inch	2.68	5.04	5.08	2.20	4.65	0.20
Frame	W	H	D	W1	H1	D1	S1
A3	mm	68.0	128.0	135.0	56.0	118.0	5.2
	inch	2.68	5.04	5.31	2.20	4.65	0.12
Frame	W	H	D	W1	H1	D1	S1
A4	mm	68.0	128.0	147.0	56.0	118.0	5.2
	inch	2.68	5.04	5.79	2.20	4.65	0.12

Frame B



Mounting hole

MODEL FRAME B1

Standard Models :
VFD7A5MH23ANSAA
VFD7A5MH23ENSAA
VFD4A2MH43ANSAA
VFD4A2MH43ENSAA

High Speed Models :
VFD7A5MH23ANSHA
VFD7A5MH23ENSHA
VFD4A2MH43ANSHA
VFD4A2MH43ENSHA

FRAME B2

Standard Models :
VFD5A0MH21ANSAA
VFD5A0MH21ENSAA

FRAME B3

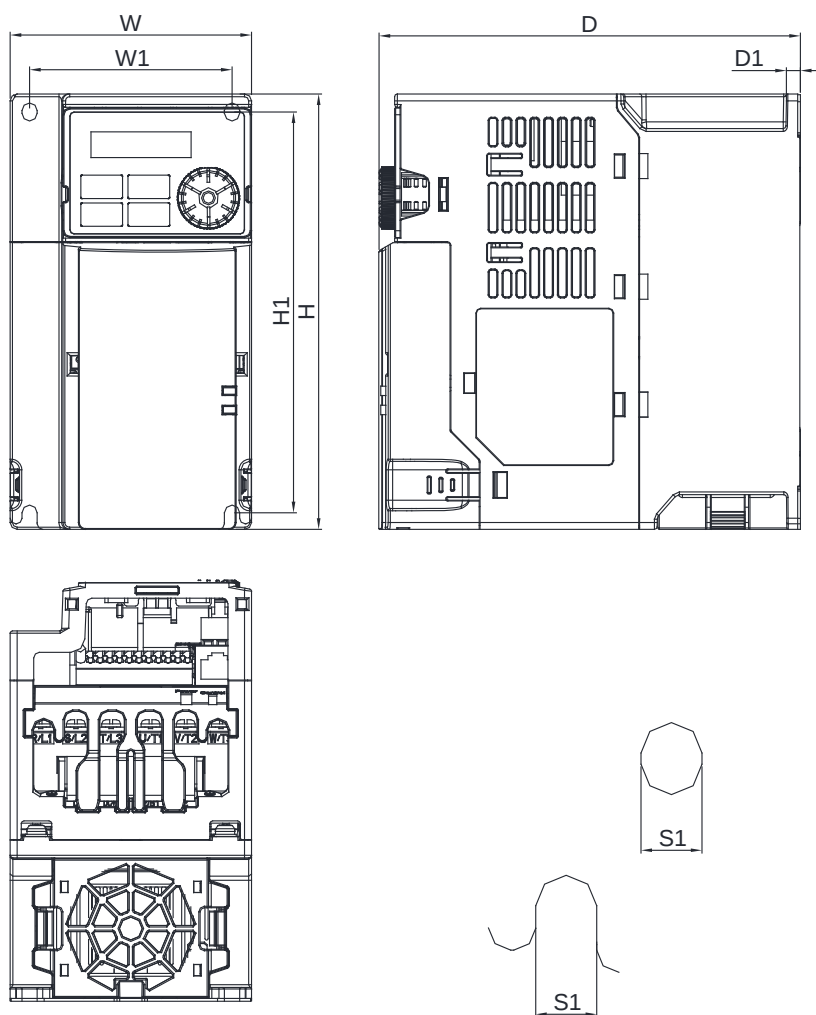
Standard Models :
VFD1A6MH21AFSAA
VFD2A8MH21AFSAA
VFD5A0MH21AFSAA
VFD1A5MH43AFSAA
VFD3A0MH43AFSAA
VFD4A2MH43AFSAA

High Speed Models :
VFD4A2MH43AFSHA

Frame		W	H	D	W1	H1	D1	S1
B1	mm	72.0	142.0	143.0	60.0	130.0	6.4	5.2
	inch	2.83	5.59	5.63	2.36	5.12	0.25	0.20
Frame		W	H	D	W1	H1	D1	S1
B2	mm	72.0	142.0	147.0	60.0	130.0	3.0	5.2
	inch	2.83	5.59	5.79	2.36	5.12	0.12	0.20
Frame		W	H	D	W1	H1	D1	S1
B3	mm	72.0	142.0	159.0	60.0	130.0	4.3	5.2
	inch	2.83	5.59	6.26	2.36	5.12	0.17	0.20

Dimensions

Frame C



Mounting hole

MODEL FRAME C1

Standard Models :

VFD5A0MH11ANSAA VFD5A0MH11ENSAA
VFD7A5MH21ANSAA VFD7A5MH21ENSAA
VFD11AMH21ANSAA VFD11AMH21ENSAA
VFD11AMH23ANSAA VFD11AMH23ENSAA
VFD17AMH23ANSAA VFD17AMH23ENSAA
VFD5A7MH43ANSAA VFD5A7MH43ENSAA
VFD9A0MH43ANSAA VFD9A0MH43ENSAA

High Speed Models :

VFD7A5MH21ANSHA VFD7A5MH21ENSHA
VFD11AMH21ANSHA VFD11AMH21ENSHA
VFD11AMH23ANSHA VFD11AMH23ENSHA
VFD17AMH23ANSHA VFD17AMH23ENSHA
VFD5A7MH43ANSHA VFD5A7MH43ENSHA
VFD9A0MH43ANSHA VFD9A0MH43ENSHA

FRAME C2

Standard Models :

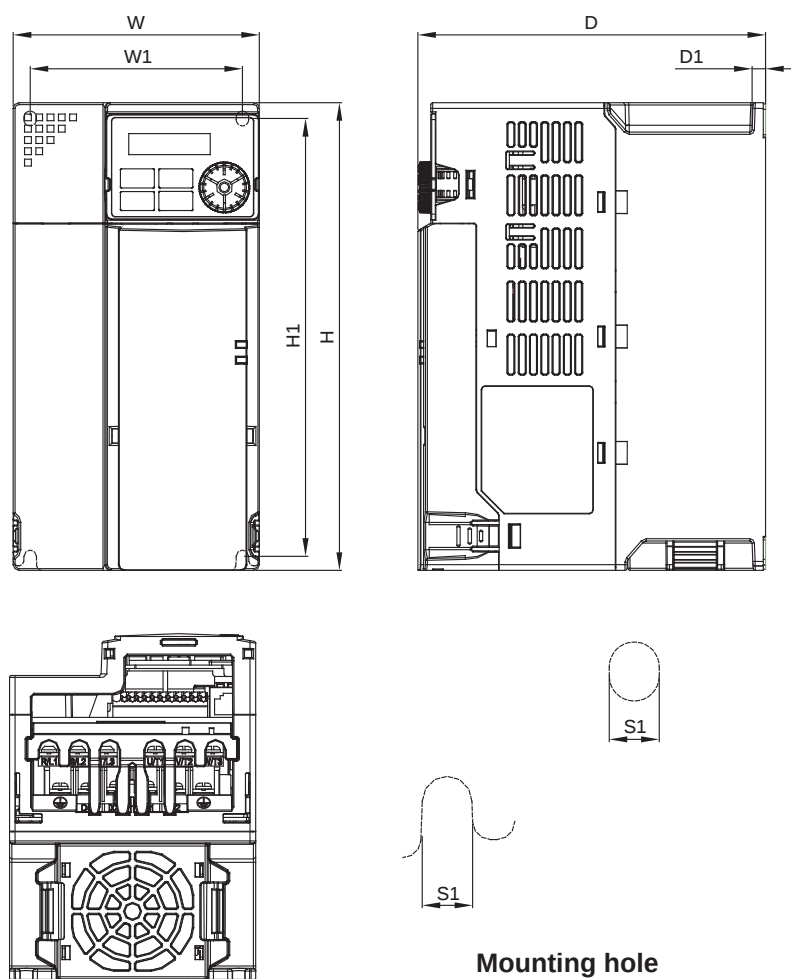
VFD7A5MH21AFSAA VFD7A5MH21AFSHA
VFD11AMH21AFSAA VFD11AMH21AFSHA
VFD5A7MH43AFSAA VFD5A7MH43AFSHA
VFD9A0MH43AFSAA VFD9A0MH43AFSHA

High Speed Models :

VFD7A5MH21AFSHA VFD7A5MH21AFSHA
VFD11AMH21AFSHA VFD11AMH21AFSHA
VFD5A7MH43AFSHA VFD5A7MH43AFSHA
VFD9A0MH43AFSHA VFD9A0MH43AFSHA

Frame		W	H	D	W1	H1	D1	S1
C1	mm	87.0	157.0	152.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	5.98	2.87	5.69	0.20	0.22
Frame		W	H	D	W1	H1	D1	S1
C2	mm	87.0	157.0	179.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	7.05	2.87	5.69	0.20	0.22

Frame D



MODEL

FRAME D1

Standard Models :
VFD25AMH23ANSAA
VFD25AMH23ENSAA
VFD13AMH43ANSAA
VFD13AMH43ENSAA
VFD17AMH43ANSAA
VFD17AMH43ENSAA

High Speed Models :
VFD25AMH23ANSHA
VFD25AMH23ENSHA
VFD13AMH43ANSHA
VFD13AMH43ENSHA
VFD17AMH43ANSHA
VFD17AMH43ENSHA

FRAME D2

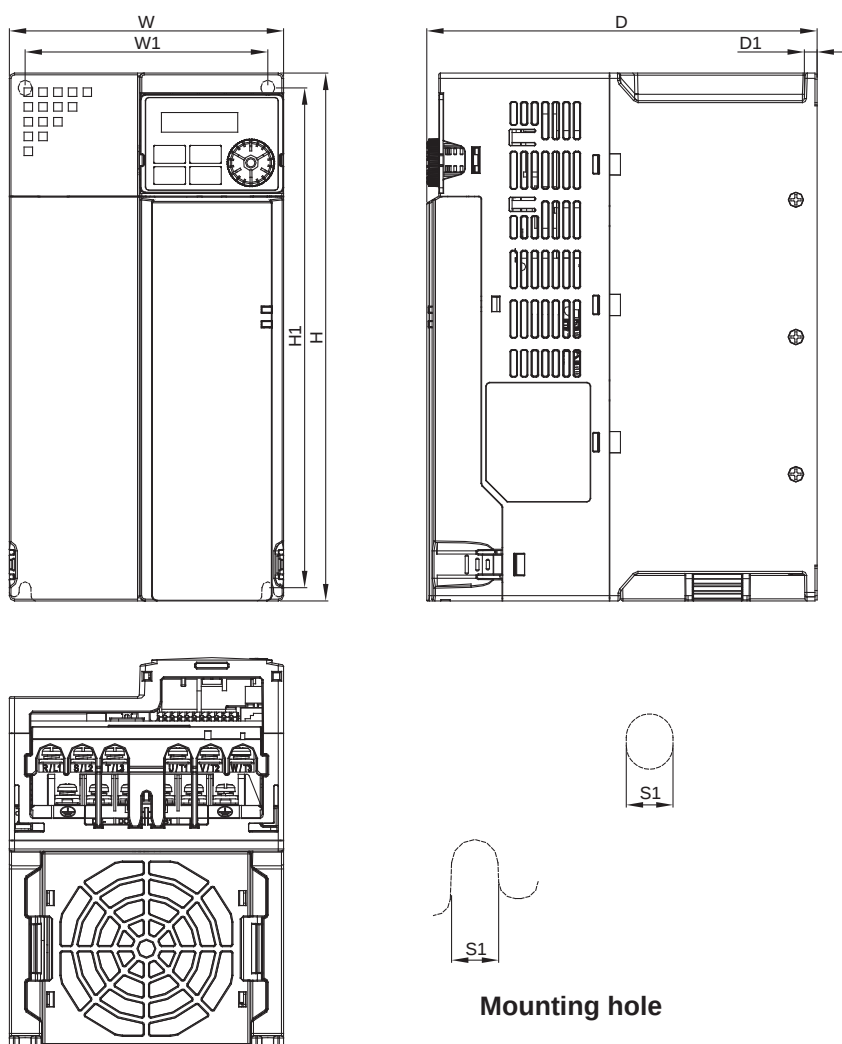
Standard Models :
VFD13AMH43AFSAA
VFD17AMH43AFSAA

High Speed Models :
VFD13AMH43AFSHA
VFD17AMH43AFSHA

Frame		W	H	D	W1	H1	D1	S1
D1	mm	109.0	207.0	154.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	6.06	3.70	7.63	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
D2	mm	109.0	207.0	187.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	7.36	3.70	7.63	0.24	0.22

Dimensions

Frame E



Mounting hole

MODEL FRAME E1

Standard Models :
VFD33AMH23ANSAA
VFD33AMH23ENSAA
VFD49AMH23ANSAA
VFD49AMH23ENSAA
VFD25AMH43ANSAA
VFD25AMH43ENSAA
VFD32AMH43ANSAA
VFD32AMH43ENSAA

High Speed Models :
VFD33AMH23ANSHA
VFD33AMH23ENSHA
VFD49AMH23ANSHA
VFD49AMH23ENSHA
VFD25AMH43ANSHA
VFD25AMH43ENSHA
VFD32AMH43ANSHA
VFD32AMH43ENSHA

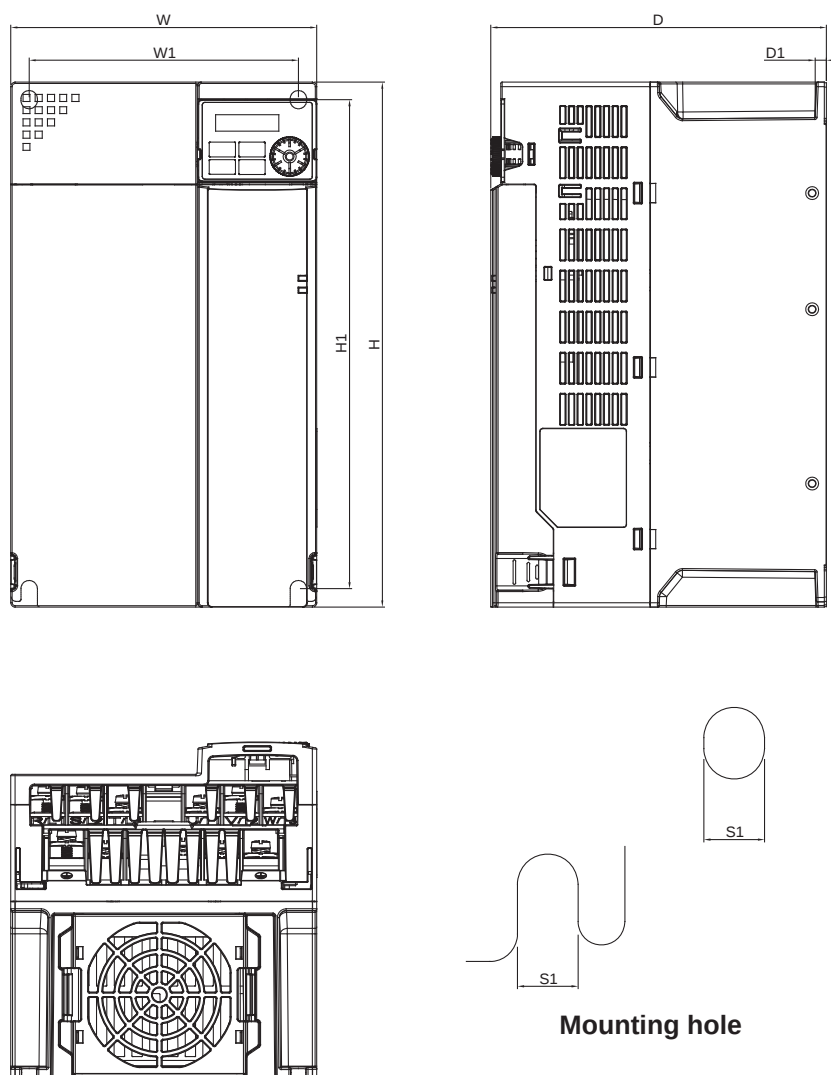
FRAME E2

Standard Models :
VFD25AMH43AFSAA
VFD32AMH43AFSAA

High Speed Models :
VFD25AMH43AFSHA
VFD32AMH43AFSHA

Frame		W	H	D	W1	H1	D1	S1
E1	mm	130.0	250.0	185.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	7.83	4.53	9.32	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
E2	mm	130.0	250.0	219.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	8.62	4.53	9.32	0.24	0.22

Frame F



MODEL FRAME F1

Standard Models :
VFD65AMH23ANSAA
VFD65AMH23ENSAA
VFD38AMH43ANSAA
VFD38AMH43ENSAA
VFD45AMH43ANSAA
VFD45AMH43ENSAA

High Speed Models :
VFD65AMH23ANSHA
VFD65AMH23ENSHA
VFD38AMH43ANSHA
VFD38AMH43ENSHA
VFD45AMH43ANSHA
VFD45AMH43ENSHA

FRAME F2

Standard Models :
VFD38AMH43AFSAA
VFD45AMH43AFSAA

High Speed Models :
VFD38AMH43AFSHA
VFD45AMH43AFSHA

Frame		W	H	D	W1	H1	D1	S1
F1	mm	175.0	300.0	192.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	7.56	6.06	11.00	0.26	0.33
Frame		W	H	D	W1	H1	D1	S1
F2	mm	175.0	300.0	244.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	9.61	6.06	11.00	0.26	0.33

Accessories

■ EMM-PG01L

 ABZ (Line Driver) Set by Pr.10-00 ~ 10-02	Terminals		Description
	PG1	VP	Output voltage for power: +5V / +12V $\pm$ 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 kP/sec
	PG2	A2,/A2, B2,/B2	Pulse input signal (Line Driver or Open Collector) Open collector input: +5V / +12V (Note1) 1-phase or 2-phase input; Max. input frequency: 300 kP/sec
	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: 300 kP/sec SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained.
	Ground	PE	Earthing terminal to reduce noise; this terminal should also be grounded.

■ EMM-PG01O

 ABZ (Open Collector) Set by Pr.10-00 ~ 10-02	Terminals		Description
	PG1	VP	Output voltage for power: +5V / +12V $\pm$ 5% (use SSW320 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 or Open Collector) Open collector input: +5V / +12V (Note1) 1-phase or 2-phase input; Max. input frequency: 300 KP / Sec
	PG2	A2,/A2, B2,/B2	Pulse input signal (Line Driver or Open Collector) Open collector input : +5V / +12V (Note1) 1-phase or 2-phase input; Max. input frequency: 300 KP / Sec
	PG OUT	V+- V- /AO, /BO, /ZO, SG	Needs external power source for PG OUT circuit. Input voltage of power: +7V ~ +24V Negative power supply input PG card output signals. Division frequency function: 1 ~ 255 times Add a pull-up resistor (1.8K Ω / 1W) to the open collector output signals to avoid signal interferences. Max. Output current: 20 mA; Max output frequency: 300 KP / sec SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained.
	Ground	PE	Earthing terminal to reduce noise; this terminal should also be grounded.

■ EMM-PG01R

 Resolver Set by Pr.10-00 ~ 10-02	Terminals		Description
	PG1	R1- R2	Resolver output power 7Vrms, 10kHz
		S1,S2, S3, S4	Resolver input signal 3.5 $\pm$ 0.175 Vrms · 10kHz
	PG2	A2,/A2, B2,/B2	Pulse input signal (Line Driver or Open Collector) Open collector input : +5V / +12V (Note1) 1-phase or 2-phase input; Max. input frequency: 300 KP / Sec
	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: 300 kP / sec SG: The GND of PG card is the same as the host controller or PLC, so a common output signal is attained.
	Ground	PE	Earthing terminal to reduce noise; this terminal should also be grounded.

■ EMM-BPS01

 24V Power Shift Card	Terminals	Description
	PE GND 24V	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. Input power: 24V $\pm$ 5% Maximum input current: 0.5A Note: 1) Do not connect the control terminal +24V (Digital control signal common: SOURCE) directly to the EMC-BPS01 input terminal 24V. 2) Do not connect control terminal GND directly to the EMC-BPS01 input terminal GND in order to achieve good isolation.

Note 1: For the Open Collector, set input voltage to 5 ~ 15mA and install a pull-up resistor

[5V] Recommend pull-up resistor: 100 ~ 220 Ω , 1 / 2W and above

[12V] Recommend pull-up resistor: 510 ~ 1.35K Ω , 1 / 2W and above

[24V] Recommend pull-up resistor: 1.8K ~ 3.3K Ω , 1 / 2W and above

■ EMM-D33A

 Digital I/O Extension Card	Terminals	Description
	24V、DCM	Output power: +24 V _{DC} ± 5% 200 mA, 5 W
	MI10 ~ MI12	Refer to Pr. 02-26 ~ Pr. 02-28 to program the multi-function. Choose SINK (NPN) / SOURCE (PNP) from SWW1. Internal power is supplied by terminal 24V: +24 V _{DC} ± 5% 200 mA, 5 W. If external power is +24 V _{DC} , the max. voltage is 30 V _{DC} and the min. voltage is 19 V _{DC} . ON: the activation current is 6.5 mA. OFF: leakage current tolerance is 10 μA.
	MO10 ~ MO12	Refer to Pr. 02-36 ~ Pr. 02-38 to program the multi-function The motor drive releases various monitor signals, such as drive in operation, frequency attained and overload indication, via transistor (open collector). MO output signal: each MO terminal needs a pull-up resistor, the max. external power voltage is 48 V _{DC} / 50 mA
	MCM	Common for multi-function output terminals MO10 ~ MO12 (photocoupler)
	PE	Earthing terminal to reduce noise; this terminal should also be grounded.

■ EMM-A22A

 Analog I/O Extension Card	Terminals	Description
	ACM	Common output signal and input signal terminals
	AI10、AI11	Refer to Pr. 14-00 ~ Pr. 14-01 to program the multi-function Two AI ports: switch between J9, J19 for AVI or ACI AVI10 ~ AVI11: input 0 ~ 10.00 V ± 0.05 V ACI10 ~ ACI11: input 0 ~ 20.00 mA ± 0.05 mA
	AO10、AO11	Refer to Pr. 14-12 ~ Pr. 14-13 to program the multi-function Two AO ports: switch between J2, J22 for AVO or ACO AVO10 ~ AVO11: output 0 ~ 10.00 V ± 0.05 V ACO10 ~ ACO11: output 0 ~ 20.00 mA ± 0.05 mA
	PE	Earthing terminal to reduce noise; this terminal should also be grounded.

■ EMM-R2CA

 Relay Extension Card	Terminals	Description
	RA10 ~ RA11 RB10 ~ RB11 RC10 ~ RC11	Refer to Pr. 02-36 ~ Pr. 02-37 to program the multi-function Resistive load: 5 A (N.O.) / 240 V _{AC} Function: To output each monitor signal, such as drive is in operation, frequency attained or overload indication.

■ EMM-R3AA

 Relay Extension Card	Terminals	Description
	RA10 ~ RA12 RC10 ~ RC12	Refer to Pr. 02-36 ~ Pr. 02-38 to program the multi-function Resistive load: 6 A (N.O.) / 250 V _{AC} Function: To output each monitor signal, such as drive is in operation, frequency attained or overload indication.

■ Screw Specification of Option Card Terminals

Screw Specification of Option Card Terminals	Wire Gauge	Torque	Screw Specification of Option Card Terminals	Wire Gauge	Torque
EMM-PG01L	30 ~ 16 AWG (0.0509 ~ 1.31 mm ²)	2 Kg-cm [1.74 lb-in]	CMM-COP01	30 ~ 16 AWG (0.0509 ~ 1.31 mm ²)	2 Kg-cm [1.74 lb-in]
EMM-PG01O			CMM-MOD01 / CMM-EIP01		
EMM-PG01R			CMM-EC01		
EMM-A22A			CMM-PD01		
EMM-D33A			CMM-DN01		
EMM-BPS01	30 ~ 16 AWG (0.0509 ~ 1.31 mm ²)	8 Kg-cm [6.94 lb-in]			
EMM-R2CA	24 ~ 12 AWG (0.205 ~ 3.31 mm ²)	5 Kg-cm [4.34 lb-in]			
EMM-R3AA					

Accessories

■ CMM-EIP01

EtherNet/IP Option Card



Features

- ▶ Supports max. 32 words input and 32 words output of I/O connection
- ▶ User-defined parameter mapping
- ▶ MDI/MDI-X auto-detect
- ▶ IP Filter, basic firewall function
- ▶ E-mail alarm

Network Interface

Network protocol	EtherNet/IP	Interface	RJ-45
Transmission speed	10/100Mbps	Number of port	1
Transmission method	I/O connection/ Explicit message	Transmission cable	Category 5e shielding
Transmission distance	100m, extension is allowed via switch		

■ CMM-MOD01

MODBUS TCP Option Card



Features

- ▶ MDI/MDI-X auto-detect
- ▶ IP Filter, basic firewall function
- ▶ E-mail alarm

Network Interface

Network protocol	MODBUS TCP	Interface	RJ-45
Transmission speed	10/100Mbps	Number of port	1
Transmission distance	100m, extension is allowed via switch	Transmission cable	Category 5e shielding

■ CMM-DN01

DeviceNet Option Card



Features

- ▶ Support Group 2 only connection method and cyclic I/O data exchange
- ▶ Provides EDS file to identify DeviceNet equipment information
- ▶ Supports max. 32 words input and 32 words output of parameter mapping
- ▶ Node address and Baud rate can be set in the AC motor drive

Network Interface

Network protocol	DeviceNet	Interface	Terminal block
Transmission speed	500k/250k/125k/100k/50k bps and extendable baud rate mode of 1M	Number of port	1
Transmission method	Explicit message/Implicit message	Transmission cable	Delta standard
Transmission distance	25m/1Mbps		

■ CMM-PD01

PROFIBUS DP Option Card



Features

- ▶ Supports PZD cyclic data exchange
- ▶ Supports PKW read/write to AC motor drive parameters
- ▶ Supports user diagnosis function.
- ▶ Auto-detects baud rates; supports Max. 12 Mbps.

Network Interface

Network protocol	PROFIBUS DP	Interface	DB9
Transmission speed	9.6k/19.2k/93.75k/187.5k/500k/1.5M/3M/6M/12Mbps	Number of port	1
Transmission method	Cyclic/non-cyclic data exchange	Transmission cable	Delta standard
Transmission distance	100m/12Mbps		

■ CMM-EC01

EtherCAT Option Card



Features

- ▶ Supports velocity mode
- ▶ Parameter reading/writing
- ▶ Complies with CANopen CiA402 (CoE)
- ▶ Disconnection treatment

Network Interface

Network protocol	EtherCAT	Interface	RJ-45
Transmission speed	100Mbps	Number of port	2
Transmission distance	100 m	Transmission cable	Delta standard

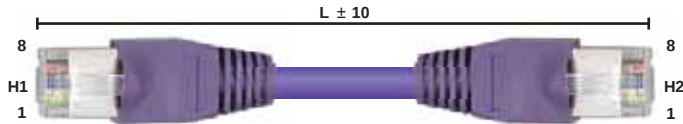
■ Delta Standard Fieldbus Cables

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
	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	305 m

Extension Cable for Digital Keypad

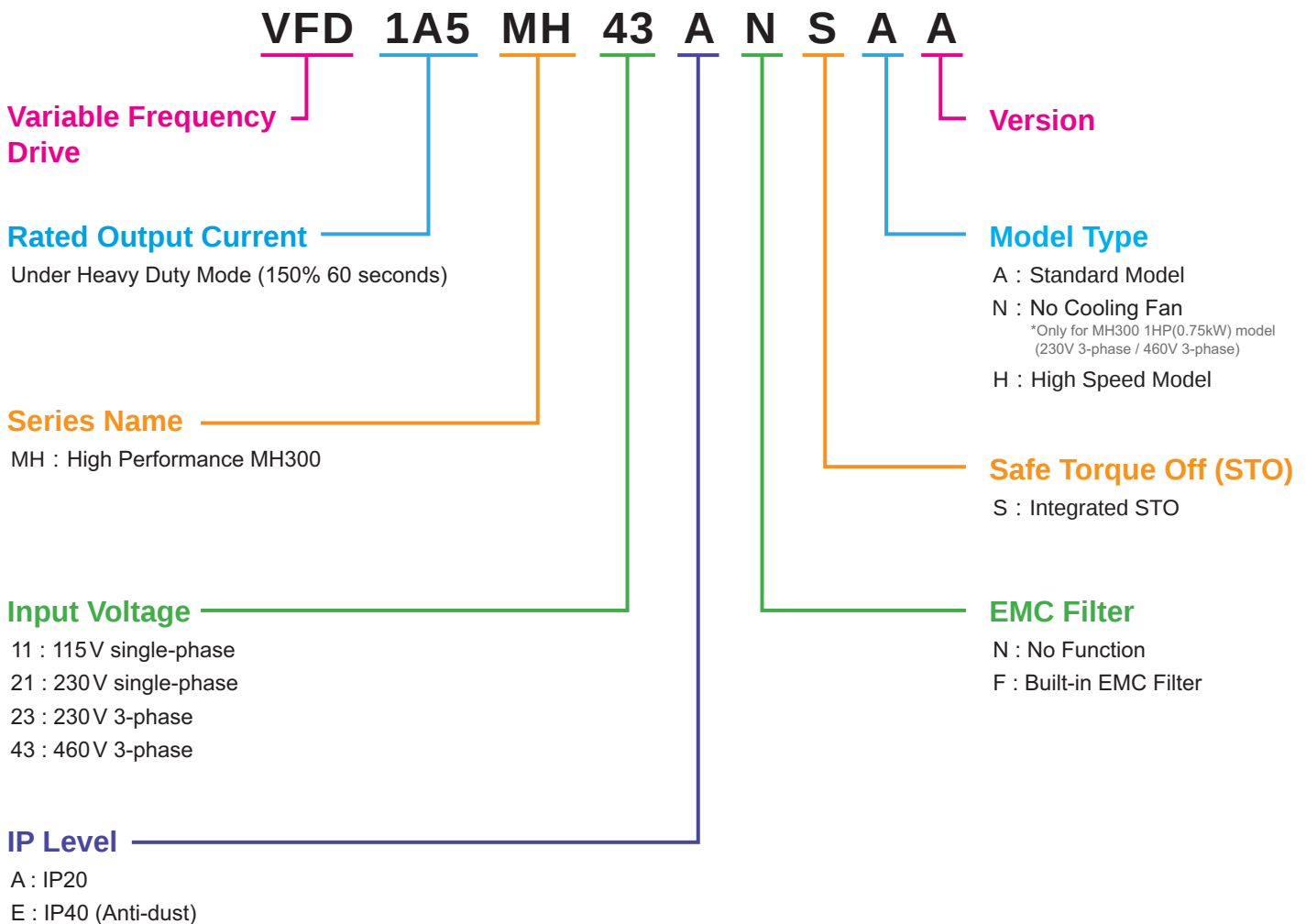
▪ RJ45 Extension Cable / CANopen Communication Cable

Model: TAP-CB05 · TAP-CB10



Title	Part No.	L	
		mm	inch
1	UC-CMC003-01A	300	11.8
2	UC-CMC005-01A	500	19.6
3	UC-CMC010-01A	1000	39
4	UC-CMC015-01A	1500	59
5	UC-CMC020-01A	2000	78.7
6	UC-CMC030-01A	3000	118.1
7	UC-CMC050-01A	5000	196.8
8	UC-CMC100-01A	10000	393.7
9	UC-CMC200-01A	20000	787.4

Model Name Explanation



Ordering Information

Standard Models (0 ~ 599 Hz)

Power Range			Frame Size	Model Name	Standard Models (0 ~ 599 Hz)		
Max. Applicable Motor Capacity		Drive Rated Output Current			Built-in EMC Filter	IP40 Models	F: Forced air cooling N: Natural air cooling
[HP]	[kW]	[A]					
115V / single-phase							
0.25	0.2	1.6	A	VFD1A6MH11ANSAA	-	-	N
				VFD1A6MH11ENSAA	-	V	N
0.5	0.4	2.5	A	VFD2A5MH11ANSAA	-	-	N
				VFD2A5MH11ENSAA	-	V	N
1	0.75	5.0	C	VFD5A0MH11ANSAA	-	-	F
				VFD5A0MH11ENSAA	-	V	F
230V / single-phase							
0.25	0.2	1.6	A	VFD1A6MH21ANSAA	-	-	N
			A	VFD1A6MH21ENSAA	-	V	N
			B	VFD1A6MH21AFSAA	V	-	N
0.5	0.4	2.8	A	VFD2A8MH21ANSAA	-	-	N
			A	VFD2A8MH21ENSAA	-	V	N
			B	VFD2A8MH21AFSAA	V	-	F
1	0.75	5.0	B	VFD5A0MH21ANSAA	-	-	N
				VFD5A0MH21AFSAA	V	-	F
				VFD5A0MH21ENSAA	-	V	N
2	1.5	7.5	C	VFD7A5MH21ANSAA	-	-	F
				VFD7A5MH21AFSAA	V	-	F
				VFD7A5MH21ENSAA	-	V	F
3	2.2	11.0	C	VFD11AMH21ANSAA	-	-	F
				VFD11AMH21AFSAA	V	-	F
				VFD11AMH21ENSAA	-	V	F
230V / 3-phase							
0.25	0.2	1.6	A	VFD1A6MH23ANSAA	-	-	N
				VFD1A6MH23ENSAA	-	V	N
0.5	0.4	2.8	A	VFD2A8MH23ANSAA	-	-	N
				VFD2A8MH23ENSAA	-	V	N
1	0.75	5.0	A	VFD5A0MH23ANSAA	-	-	F
				VFD5A0MH23ENSAA	-	V	F
				VFD5A0MH23ANSNA			N
				VFD5A0MH23ENSNA		V	N
2	1.5	7.5	B	VFD7A5MH23ANSAA	-	-	F
				VFD7A5MH23ENSAA	-	V	F
3	2.2	11.0	C	VFD11AMH23ANSAA	-	-	F
				VFD11AMH23ENSAA	-	V	F
5	3.7/4	17.0	C	VFD17AMH23ANSAA	-	-	F
				VFD17AMH23ENSAA	-	V	F
7.5	5.5	25.0	D	VFD25AMH23ANSAA	-	-	F
				VFD25AMH23ENSAA	-	V	F
10	7.5	33.0	E	VFD33AMH23ANSAA	-	-	F
				VFD33AMH23ENSAA	-	V	F
15	11	49.0	E	VFD49AMH23ANSAA	-	-	F
				VFD49AMH23ENSAA	-	V	F
20	15	65.0	F	VFD65AMH23ANSAA	-	-	F
				VFD65AMH23ENSAA	-	V	F

Ordering Information

Standard Models (0 ~ 599Hz)

Power Range			Frame Size	Model Name	Standard Models (0 ~ 599 Hz)		
Max. Applicable Motor Capacity		Drive Rated Output Current			Built-in EMC Filter	IP40 Models	F: Forced air cooling N: Natural air cooling
[HP]	[kW]	[A]					
460V / 3-phase							
0.5	0.4	1.5	A	VFD1A5MH43ANSAA	-	-	N
			A	VFD1A5MH43ENSAA	-	V	N
			B	VFD1A5MH43AFSAA	V	-	F
1	0.75	3.0	A	VFD3A0MH43ANSAA	-	-	F
			A	VFD3A0MH43ENSAA	-	V	F
			B	VFD3A0MH43AFSAA	V	-	F
			A	VFD3A0MH43ANSNA			N
			A	VFD3A0MH43ENSNA		V	N
2	1.5	4.2	B	VFD4A2MH43ANSAA	-	-	F
				VFD4A2MH43ENSAA	-	V	F
				VFD4A2MH43AFSAA	V	-	F
3	2.2	5.7	C	VFD5A7MH43ANSAA	-	-	F
				VFD5A7MH43ENSAA	-	V	F
				VFD5A7MH43AFSAA	V	-	F
5	3.7/4	9.0	C	VFD9A0MH43ANSAA	-	-	F
				VFD9A0MH43ENSAA	-	V	F
				VFD9A0MH43AFSAA	V	-	F
7.5	5.5	13.0	D	VFD13AMH43ANSAA	-	-	F
				VFD13AMH43ENSAA	-	V	F
				VFD13AMH43AFSAA	V	-	F
10	7.5	17.5	D	VFD17AMH43ANSAA	-	-	F
				VFD17AMH43ENSAA	-	V	F
				VFD17AMH43AFSAA	V	-	F
15	11	25.0	E	VFD25AMH43ANSAA	-	-	F
				VFD25AMH43ENSAA	-	V	F
				VFD25AMH43AFSAA	V	-	F
20	15	32.0	E	VFD32AMH43ANSAA	-	-	F
				VFD32AMH43ENSAA	-	V	F
				VFD32AMH43AFSAA	V	-	F
25	18.5	38.0	F	VFD38AMH43ANSAA	-	-	F
				VFD38AMH43ENSAA	-	V	F
				VFD38AMH43AFSAA	V	-	F
30	22	45.0	F	VFD45AMH43ANSAA	-	-	F
				VFD45AMH43ENSAA	-	V	F
				VFD45AMH43AFSAA	V	-	F

High Speed Models (0 ~ 2000 Hz)

Power Range			Frame Size	Model Name	High Speed Models (0 ~ 2000 Hz)		
Max. Applicable Motor Capacity		Drive Rated Output Current			Built-in EMC Filter	IP40 Models	F: Forced air cooling N: Natural air cooling
[HP]	[kW]	[A]					
230 V / single-phase							
2	1.5	7.5	C	VFD7A5MH21ANSHA	-	-	F
				VFD7A5MH21ENSHA	-	V	F
				VFD7A5MH21AFSHA	V		F
3	2.2	11.0	C	VFD11AMH21ANSHA	-	-	F
				VFD11AMH21ENSHA	-	V	F
				VFD11AMH21AFSHA	V	-	F
230 V / 3-phase							
2	1.5	7.5	B	VFD7A5MH23ANSHA	-	-	F
				VFD7A5MH23ENSHA	-	V	F
3	2.2	11.0	C	VFD11AMH23ANSHA	-	-	F
				VFD11AMH23ENSHA	-	V	F
5	3.7/4	17.0	C	VFD17AMH23ANSHA	-	-	F
				VFD17AMH23ENSHA	-	V	F
7.5	5.5	25.0	D	VFD25AMH23ANSHA	-	-	F
				VFD25AMH23ENSHA	-	V	F
10	7.5	33.0	E	VFD33AMH23ANSHA	-	-	F
				VFD33AMH23ENSHA	-	V	F
15	11	49.0	E	VFD49AMH23ANSHA	-	-	F
				VFD49AMH23ENSHA	-	V	F
20	15	65.0	F	VFD65AMH23ANSHA	-	-	F
				VFD65AMH23ENSHA	-	V	F
460 V / 3-phase							
2	1.5	4.2	B	VFD4A2MH43ANSHA	-	-	F
				VFD4A2MH43ENSHA	-	V	F
				VFD4A2MH43AFSHA	V	-	F
3	2.2	5.7	C	VFD5A7MH43ANSHA	-	-	F
				VFD5A7MH43ENSHA	-	V	F
				VFD5A7MH43AFSHA	V	-	F
5	3.7/4	9.0	C	VFD9A0MH43ANSHA	-	-	F
				VFD9A0MH43ENSHA	-	V	F
				VFD9A0MH43AFSHA	V	-	F
7.5	5.5	13.0	D	VFD13AMH43ANSHA	-	-	F
				VFD13AMH43ENSHA	-	V	F
				VFD13AMH43AFSHA	V	-	F
10	7.5	17.5	D	VFD17AMH43ANSHA	-	-	F
				VFD17AMH43ENSHA	-	V	F
				VFD17AMH43AFSHA	V	-	F
15	11	25.0	E	VFD25AMH43ANSHA	-	-	F
				VFD25AMH43ENSHA	-	V	F
				VFD25AMH43AFSHA	V	-	F
20	15	32.0	E	VFD32AMH43ANSHA	-	-	F
				VFD32AMH43ENSHA	-	V	F
				VFD32AMH43AFSHA	V	-	F
25	18.5	38.0	F	VFD38AMH43ANSHA	-	-	F
				VFD38AMH43ENSHA	-	V	F
				VFD38AMH43AFSHA	V	-	F
30	22	45.0	F	VFD45AMH43ANSHA	-	-	F
				VFD45AMH43ENSHA	-	V	F
				VFD45AMH43AFSHA	V	-	F

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Taoyuan Technology Center (Green Building)



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Taoyuan Plant (Diamond-rated Green Building)

ASIA (China)



Wujiang Plant 3



Delta Electronics



ASIA (Japan)



Tokyo Office

ASIA (India)



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(Green Building)

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