



Digitized Automation for a Changing World

# Delta Compact Elevator Drive MH300-L



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 **DELTA**  
Smarter. Greener. Together.

# Overview

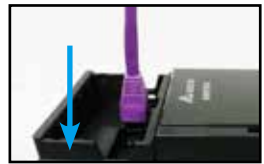
Compact design, quick and easy installation, user-friendly operation

Size reduction 40%

Up to 40% size reduction compared with current drives for elevator applications



**Removable Keypad**  
Press to remove the keypad for remote control with cable connection



**Removable RFI Jumper**  
Applicable for different needs



**Removable Fan**  
Easy to replace and maintain

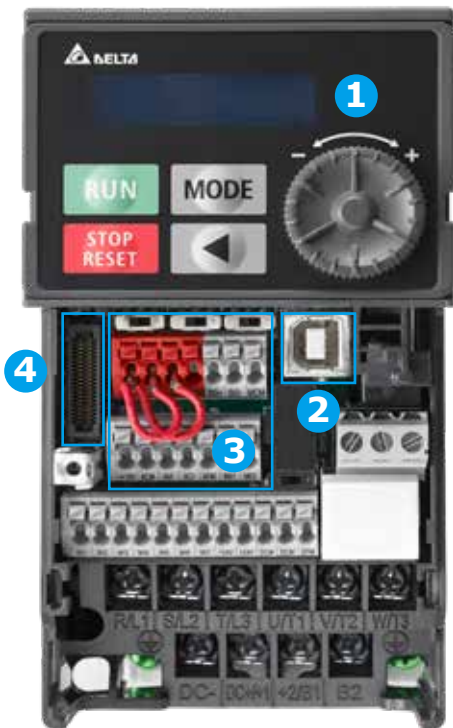


**Screwless Front Case**  
Press on both side tabs to remove the case





Remove the front case



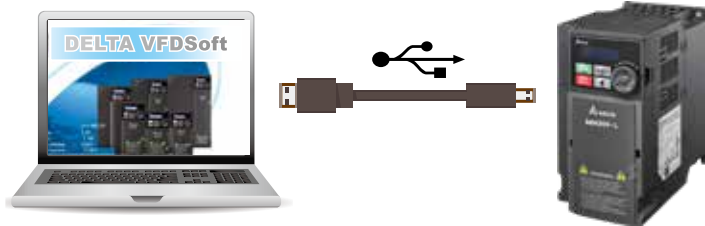
### 1 User-friendly Control and Display

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

### 2 Built-in USB Connection Port

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

- No external USB or RS-485 connectors needed
- Supports offline (drive power off) parameter setting / copying and system updating



### 3 Screwless Wiring of Control Terminal

Spring clamp terminal blocks provide fast and easy wiring

### 4 Option Card

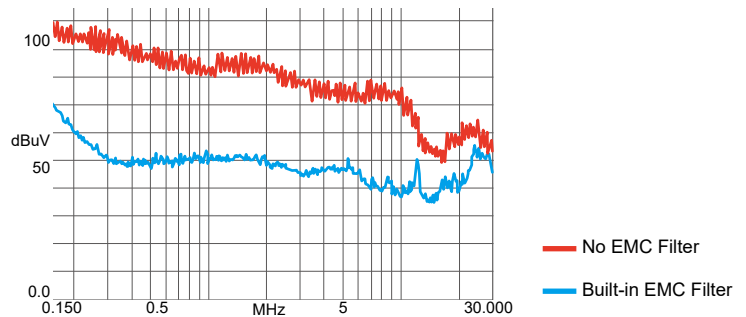
Built-in I/O slot for flexible application

I/O Extension Card  
(EMM-D3R2CA)



### Built-in EMC Filter

Built-in Class A(C2) EMC filter, compliant with EN 12015/ EN 12016 standards for lift applications. MH300-L saves on additional procurement cost and wiring time, and provides more cabinet space



# Benefits

## Slip Compensation

According to current load of elevator, the slip compensation function enables the actual speed to reach rated speed accurately

## Precise Time Sequence for Elevator Motion

5-Independent S-Ramps motion control provides customized parameter settings. Precise motion control at start and stop ensures smooth elevator operation

## High Overload Capability

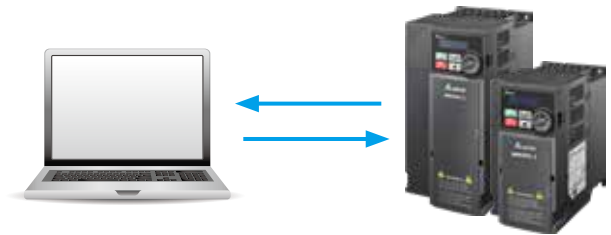
Rated current 150% for 60 seconds; 200% for 3 seconds

## Versatile Communication Protocols

Built-in RS-485 (Modbus) and CAN port

## Built-in PLC

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



## Built-in Brake Chopper

Enhance braking capability by combining an additional braking resistor

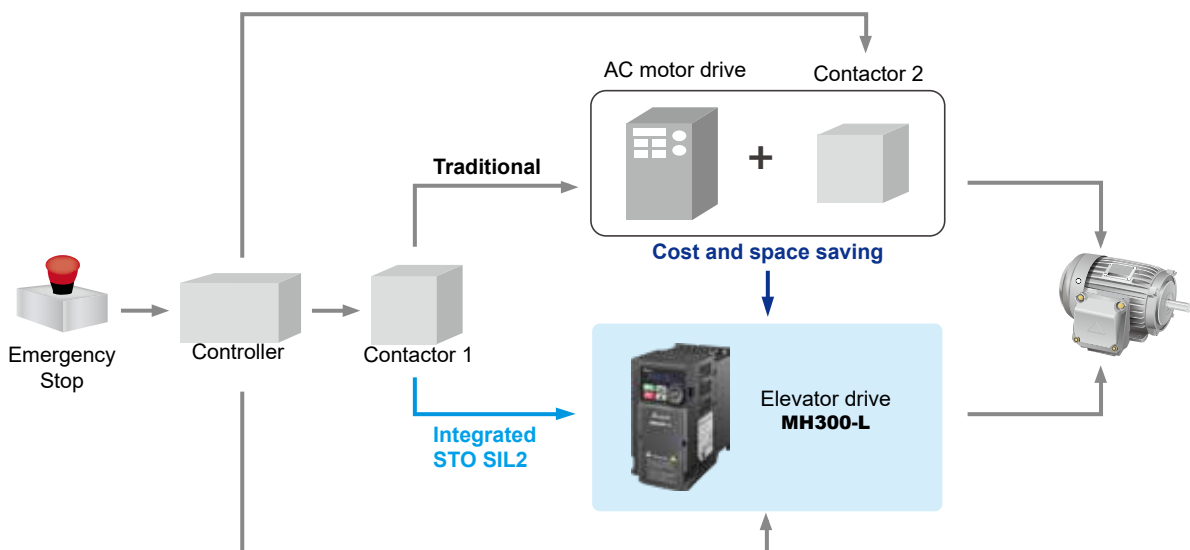
## Emergency Power Supply (EPS)

EPS function will automatically switch to UPS mode when power failure happens. Drive will detect the light load direction and reach levelling floor for safety

## Safety Standard

Integrated Safe Torque Off (STO), compliant with:

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





# Product Specifications

3-phase 230V							
Models without built-in EMC filter							
Frame	C	D		E		F	
Applicable Motor Output (kW)	2.2	3.7	5.5	7.5	11	15	
Applicable Motor Output (HP)	3	5	7.5	10	15	20	
Output	Rated Output Capacity (kVA)	4.2	6.5	9.5	12.6	24.8	
	Rated Output Current (A)	11.0	17.0	25.0	33.0	65.0	
	Carrier Frequency (kHz)	2 ~ 15 (default 8kHz without derating)					
Input	Rated Input Current (A)	13.2	20.4	30.0	39.6	58.8	78.0
	Rated Voltage / Frequency	3-phase AC 200V ~ 240V (-15% ~ +10%), 50/60Hz					
	Operating Voltage Range	170 ~ 265 V <sub>AC</sub>					
	Frequency Tolerance	47 ~ 63 Hz					
Brake Chopper	Built-in						
DC Reactor	Optional						
AC Reactor	Optional						
Weight (kg)	1.24	2.07		3.97		6.3	
Cooling Method	Fan cooling						
Dimension (W x H x D mm)	87 x 157 x 167	109 x 207 x 169		130 x 250 x 200		175 x 300 x 207	

3-phase 460V						
Models without built-in EMC filter						
Frame	C	D		E		
Applicable Motor Output (kW)	3.7	5.5	7.5	11	15	
Applicable Motor Output (HP)	5	7.5	10	15	20	
Output	Rated Output Capacity (kVA)	6.9	9.9	13.3	19.1	24.4
	Rated Output Current (A)	9.0	13.0	17.5	25.0	32.0
	Carrier Frequency (kHz)	2 ~ 15 (default 8kHz without derating)				
Input	Rated Input Current (A)	9.9	14.3	19.3	27.5	35.2
	Rated Voltage / Frequency	3-phase AC 230V ~ 480V (-15% ~ +10%), 50/60Hz				
	Operating Voltage Range	323 ~ 528 V <sub>AC</sub>				
	Frequency Tolerance	47 ~ 63 Hz				
Brake Chopper	Built-in					
DC Reactor	Optional					
AC Reactor	Optional					
Weight (kg)	1.24	2.07		3.97		
Cooling Method	Fan cooling					
Dimension (W x H x D mm)	87 x 157 x 167	109 x 207 x 169		130 x 250 x 200		
Models with built-in EMC filter						
Frame	C	D		E		
Weight (kg)	1.84	2.93		5.19		
Dimension (W x H x D mm)	87 x 157 x 194	109 x 207 x 202		130 x 250 x 234		

## General Specifications

<b>Control Functions</b>	Control Methods	V/F, SVC
	Applicant Motors	Induction Motor (IM)
	Max. Output Frequency	0 ~ 599 Hz (Default 60Hz)
	Starting Torque	150%/3Hz
	Speed Control Range	1:50
	Overload Tolerance	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 inputs (33 kHz), 1 pulse output (33kHz)
	Main Control Functions	Fast startup, Momentary power loss ride thru, over-torque detection, 16-step speed (max.), accel/decel time switch, S-curve accel/decel, JOG frequency, upper/lower limits for frequency reference, DC injection braking at start and stop, Built-in PLC (5 K steps), Modbus and CAN are integrated as standard
<b>Protection Functions</b>	Motor Protection	Overcurrent, overvoltage, over-temperature, phase loss, over-load
	Stall Prevention	Stall prevention during acceleration, deceleration and running independently
<b>Optional Card</b>	I/O Extension Card	EMM-D3R2CA (digital/relay card - 3 input & 2 relayC output)
<b>Digital Keypad</b>		Externally available operation keypad
<b>Certifications</b>		UL, CE, C-Tick, TUV (SIL2), RoHS, REACH

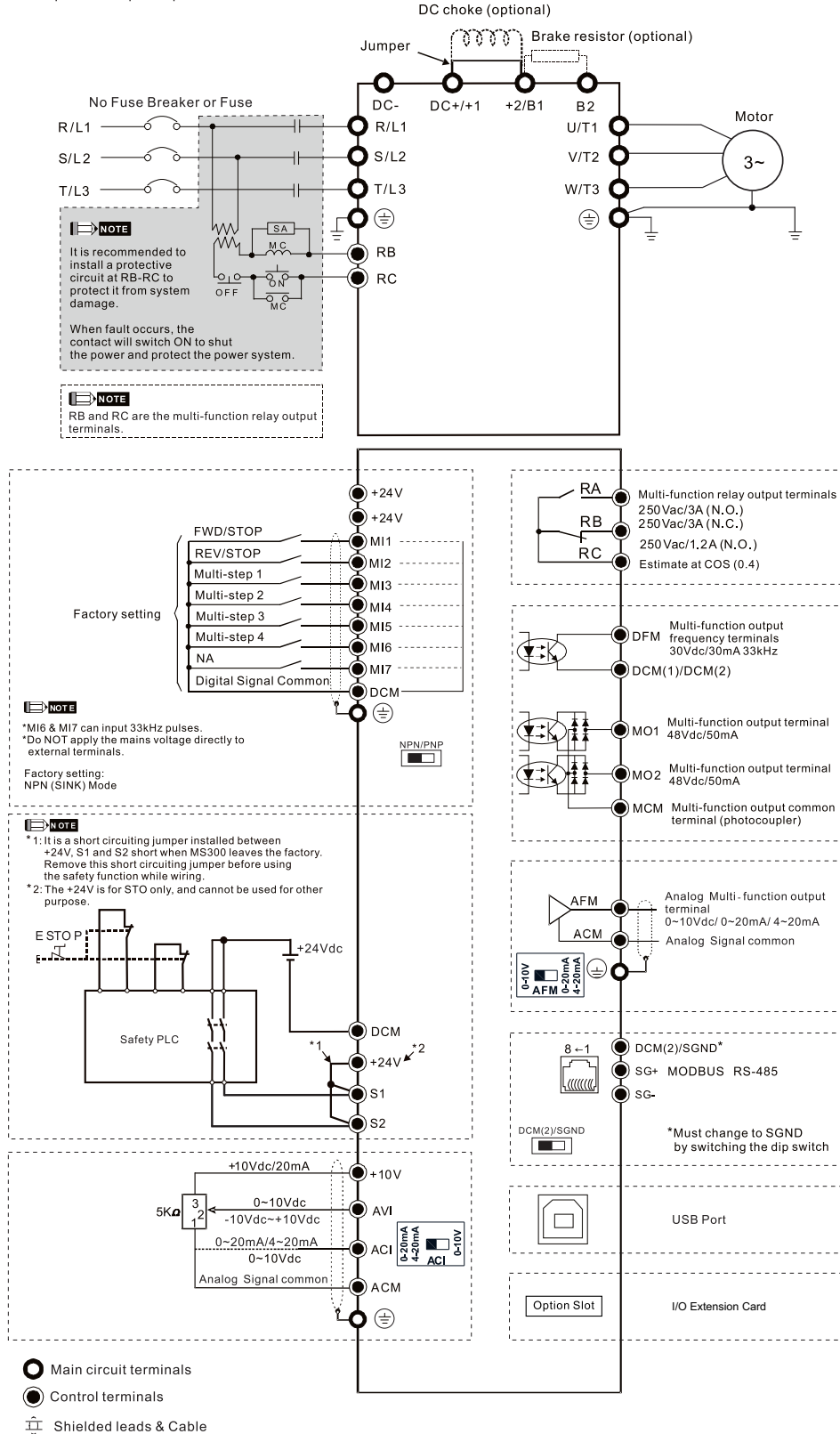
## Operating Environment

<b>Operating Environment</b>	Installation Location		IEC60364-1 / IEC60664-1 pollution level 2, indoor use only	
	Ambient Temperature	Operation	IP20 / UL Open Type	-20 to 50 °C (derating to 60 °C)
		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	Compliant with 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)		
<b>Vibration</b>		Compliant with IEC 60068-2-6		
<b>Shock</b>		Compliant with IEC/EN 60068-2-27		

Please refer to the user manual for more details

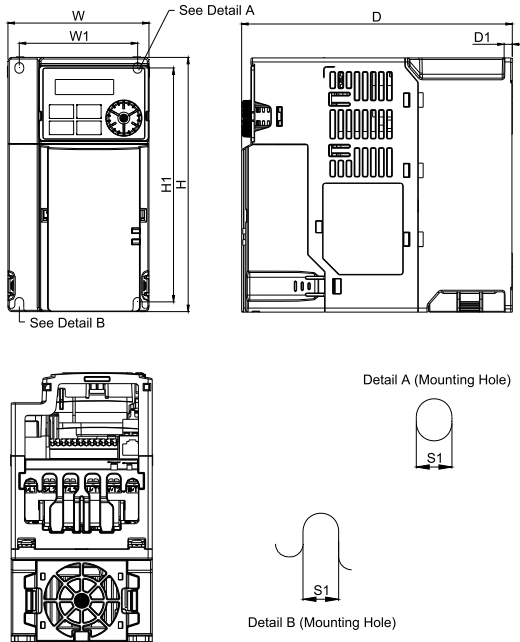
# Wiring

It provides 3-phase power

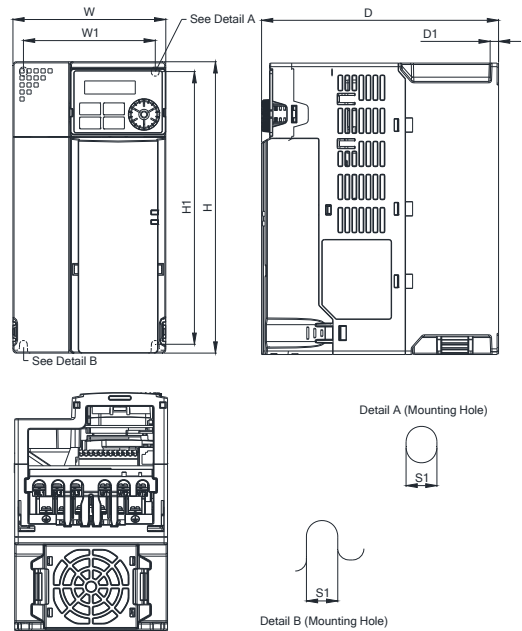


# Dimensions

## Frame C



## Frame D



### MODEL FRAME C1

VFD11AMH23ANSLA  
VFD17AMH23ANSLA  
VFD9A0MH43ANSLA

### FRAME C2

VFD9A0MH43AFSLA

Frame		W	H	D	W1	H1	D1	S1
C1	mm	87.0	157.0	167.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	6.57	2.87	5.69	0.20	0.22
Frame		W	H	D	W1	H1	D1	S1
C2	mm	87.0	157.0	194.0	73.0	144.5	5.0	5.5
	inch	3.43	6.18	7.64	2.87	5.69	0.20	0.22

### MODEL FRAME D1

VFD25AMH23ANSLA  
VFD13AMH43ANSLA  
VFD17AMH43ANSLA

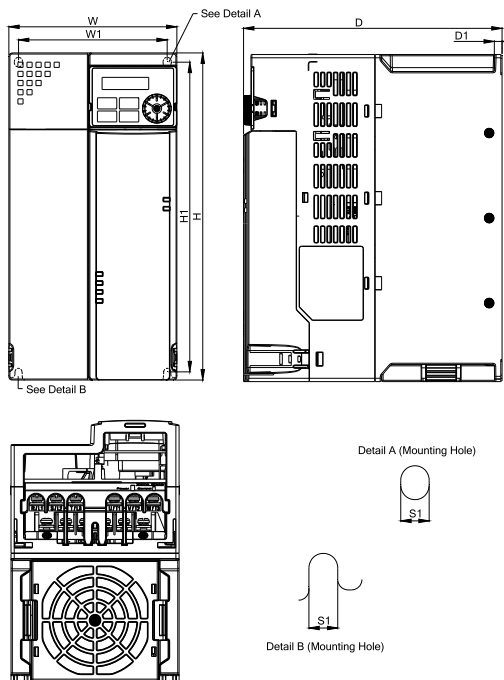
### FRAME D2

VFD13AMH43AFSLA  
VFD17AMH43AFSLA

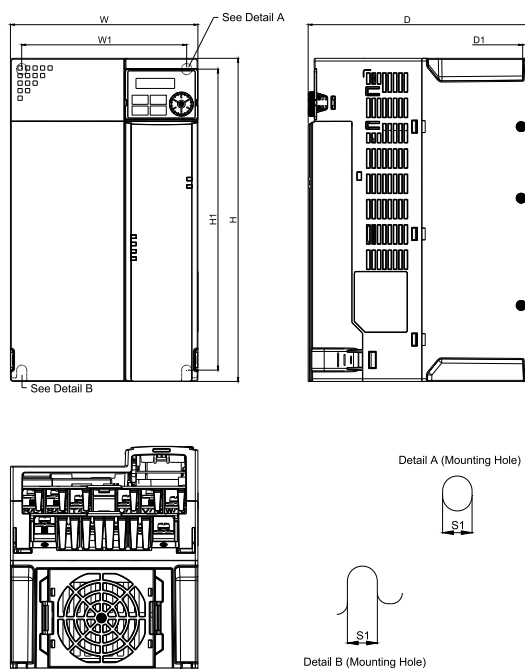
Frame		W	H	D	W1	H1	D1	S1
D1	mm	109.0	207.0	169.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	6.65	3.70	7.63	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
D2	mm	109.0	207.0	202.0	94.0	193.8	6.0	5.5
	inch	4.29	8.15	7.95	3.70	7.63	0.24	0.22



### Frame E



### Frame F



#### MODEL FRAME E1

VFD33AMH23ANSLA  
VFD49AMH23ANSLA  
VFD25AMH43ANSLA  
VFD32AMH43ANSLA

#### FRAME E2

VFD25AMH43AFSLA  
VFD32AMH43AFSLA

Frame		W	H	D	W1	H1	D1	S1
E1	mm	130.0	250.0	200.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	7.87	4.53	9.32	0.24	0.22
Frame		W	H	D	W1	H1	D1	S1
E2	mm	130.0	250.0	234.0	115.0	236.8	6.0	5.5
	inch	5.12	9.84	9.21	4.53	9.32	0.24	0.22


#### MODEL FRAME F1

VFD65AMH23ANSLA

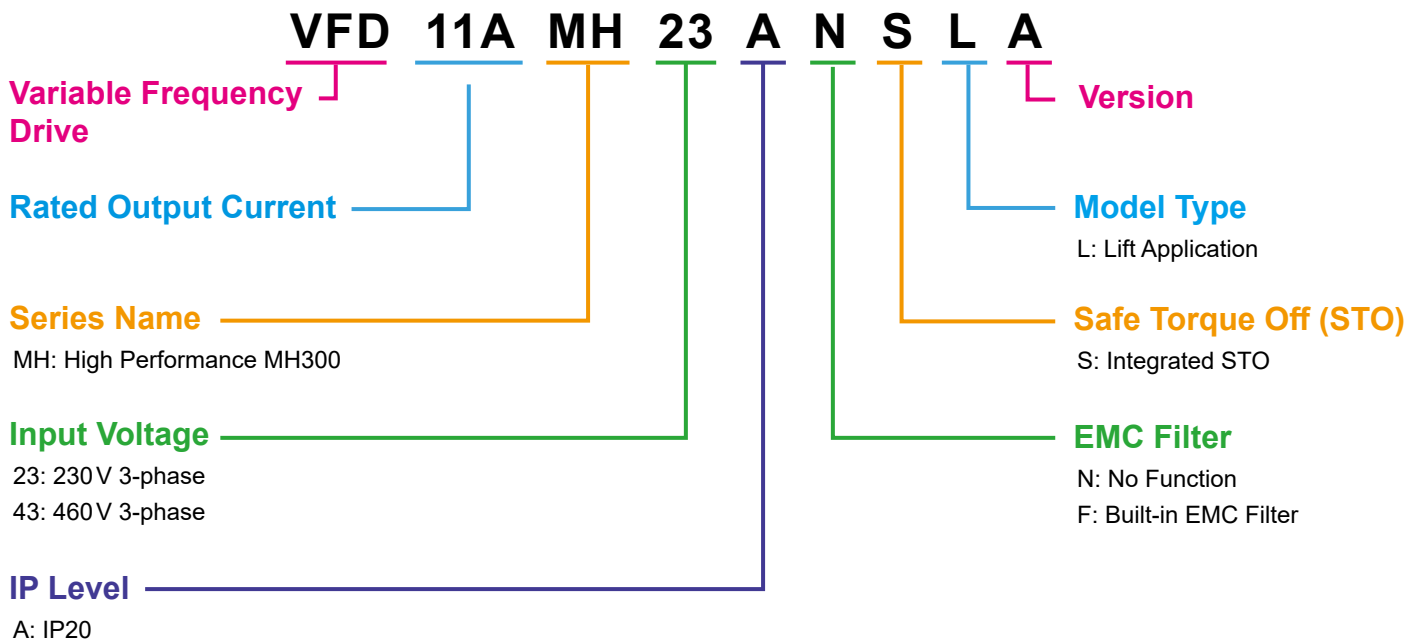
Frame		W	H	D	W1	H1	D1	S1
F1	mm	175.0	300.0	207.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	8.15	6.06	11.00	0.26	0.33

# Option Card

## I/O Extension Card (EMM-D3R2CA)

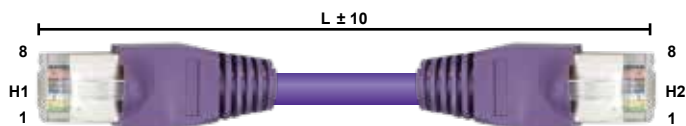
	Terminals	Description
 I/O Extension Card	24V, DCM	Output power: $+24 V_{DC} \pm 10\% < 30mA$
	MI10 ~ MI12	Refer to Pr.02-26~Pr.02-28 to program the multi-function Choose SINK (NPN) / SOURCE (PNP) from SSW1 Internal power is supplied by terminal 24 V: $+24 V_{DC} \pm 5\%$ If external power is $+24 V_{DC}$ , the maximum voltage is $30V_{DC}$ and the minimum voltage is $19V_{DC}$ ON: the activation current is 6.5mA OFF: leakage current tolerance is $10\mu A$
	PE	Earthing terminal to reduce noise; this terminal should also be grounded
	RA10 ~ RA11	Refer to Pr. 02-36~ Pr. 02-37 to program the multi-function
	RB10 ~ RB11	Resistive load: 5A(N.O.)/240 VAC
	RC10 ~ RC11	Function: To output each monitor signal, such as drive is in operation, frequency attained or overload indication

# Model Name Explanation



# Accessories

## Extension Cable for Digital Keypad



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

# Ordering Information

## Standard Models (0 ~ 599 Hz)

Power Range			Frame Size	Model Name	Built-in EMC Filter
Max. Applicable Motor Capacity		Drive Rated Output Current			
[HP]	[kW]	[A]			
<b>230 V/3-phase</b>					
3	2.2	11.0	C	VFD11AMH23ANSLA	-
5	3.7	17.0	C	VFD17AMH23ANSLA	-
7.5	5.5	25.0	D	VFD25AMH23ANSLA	-
10	7.5	33.0	E	VFD33AMH23ANSLA	-
15	11	49.0	E	VFD49AMH23ANSLA	-
20	15	65.0	F	VFD65AMH23ANSLA	-
<b>460 V/3-phase</b>					
5	3.7	9.0	C	VFD9A0MH43ANSLA	-
				VFD9A0MH43AFSLA	✓
7.5	5.5	13.0	D	VFD13AMH43ANSLA	-
				VFD13AMH43AFSLA	✓
10	7.5	17.5	D	VFD17AMH43ANSLA	-
				VFD17AMH43AFSLA	✓
15	11	25.0	E	VFD25AMH43ANSLA	-
				VFD25AMH43AFSLA	✓
20	15	32.0	E	VFD32AMH43ANSLA	-
				VFD32AMH43AFSLA	✓



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