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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

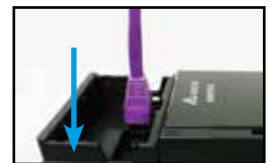
Size
reduction
40%

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



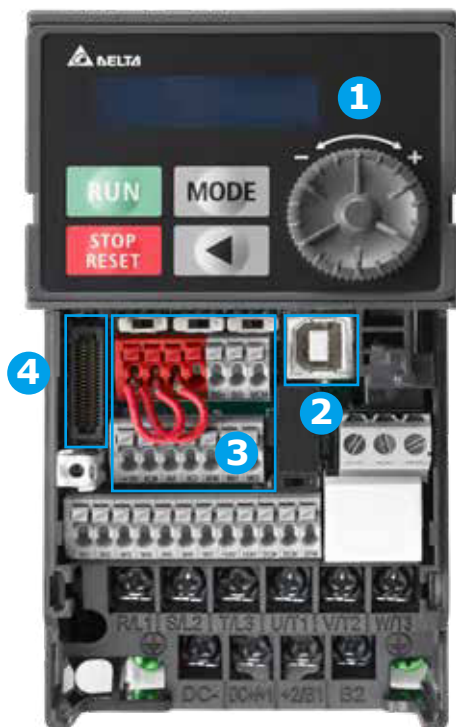
Screwless Front Case

Press on both side tabs to remove the case





Remove the front case



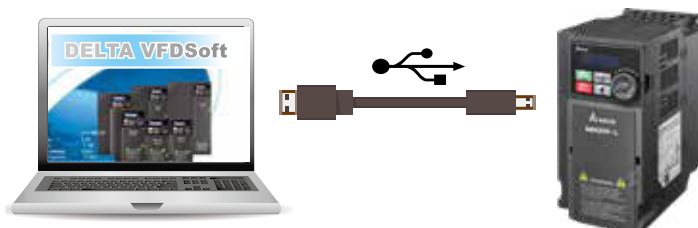
1 User-friendly Control and Display

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



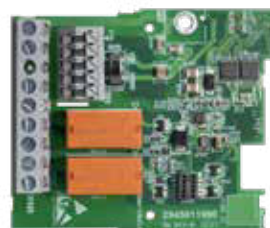
3 Screwless Wiring of Control Terminal

Spring clamp terminal blocks provide fast and easy wiring

4 Option Card

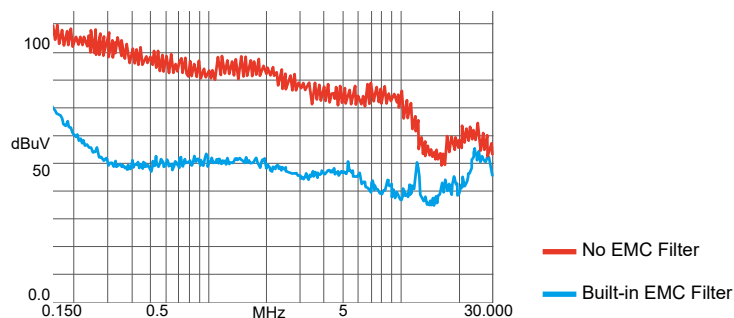
Built-in I/O slot for flexible application

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 spaces



Benefits

Slip Compensation

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

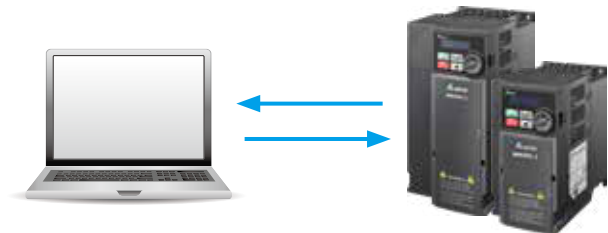
Rated current 150% for 60 seconds; 200% for 3 seconds

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

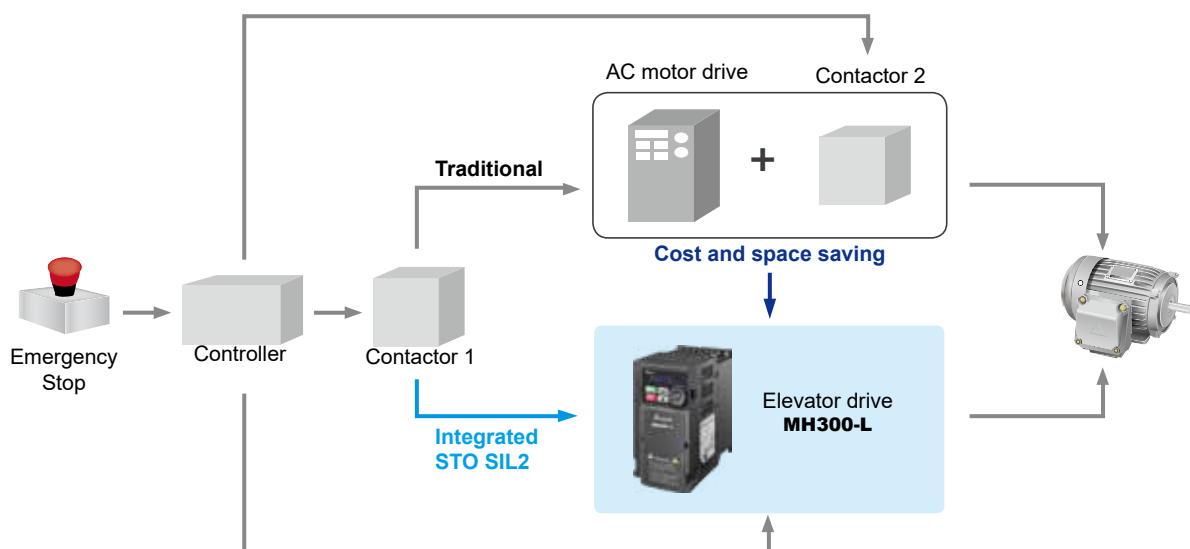
Emergency Power Supply (EPS)

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 230 V						
Models without built-in EMC filter						
Frame		C	D		E	
Applicable Motor Output (kW)		2.2	3.7	5.5	7.5	11
Applicable Motor Output (HP)		3	5	7.5	10	15
Output	Rated Output Capacity (kVA)	4.2	6.5	9.5	12.6	18.7
	Rated Output Current (A)	11.0	17.0	25.0	33.0	49.0
	Carrier Frequency (kHz)	2 ~ 15 (default 8kHz without derating)				
Input	Rated Input Current (A)	13.2	20.4	30.0	39.6	58.8
	Rated Voltage / Frequency	3-phase AC 200 V ~ 240 V (- 15% ~ + 10%), 50/60 Hz				
	Operating Voltage Range	170 ~ 265 V _{AC}				
	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 460 V					
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 230 V~480 V (- 15% ~ + 10%), 50/60 Hz			
	Operating Voltage Range	323~528 V _{AC}			
	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

Control Functions	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
Protection Functions	Motor Protection	Overcurrent, overvoltage, over-temperature, phase loss, over-load
	Stall Prevention	Stall prevention during acceleration, deceleration and running independently
Optional Card	I/O Extension Card	EMM-D3R2CA (digital/relay card - 3 input & 2 relayC output)
Digital Keypad		Externally available operation keypad
Certifications		UL, CE, C-Tick, TUV (SIL2), RoHS, REACH

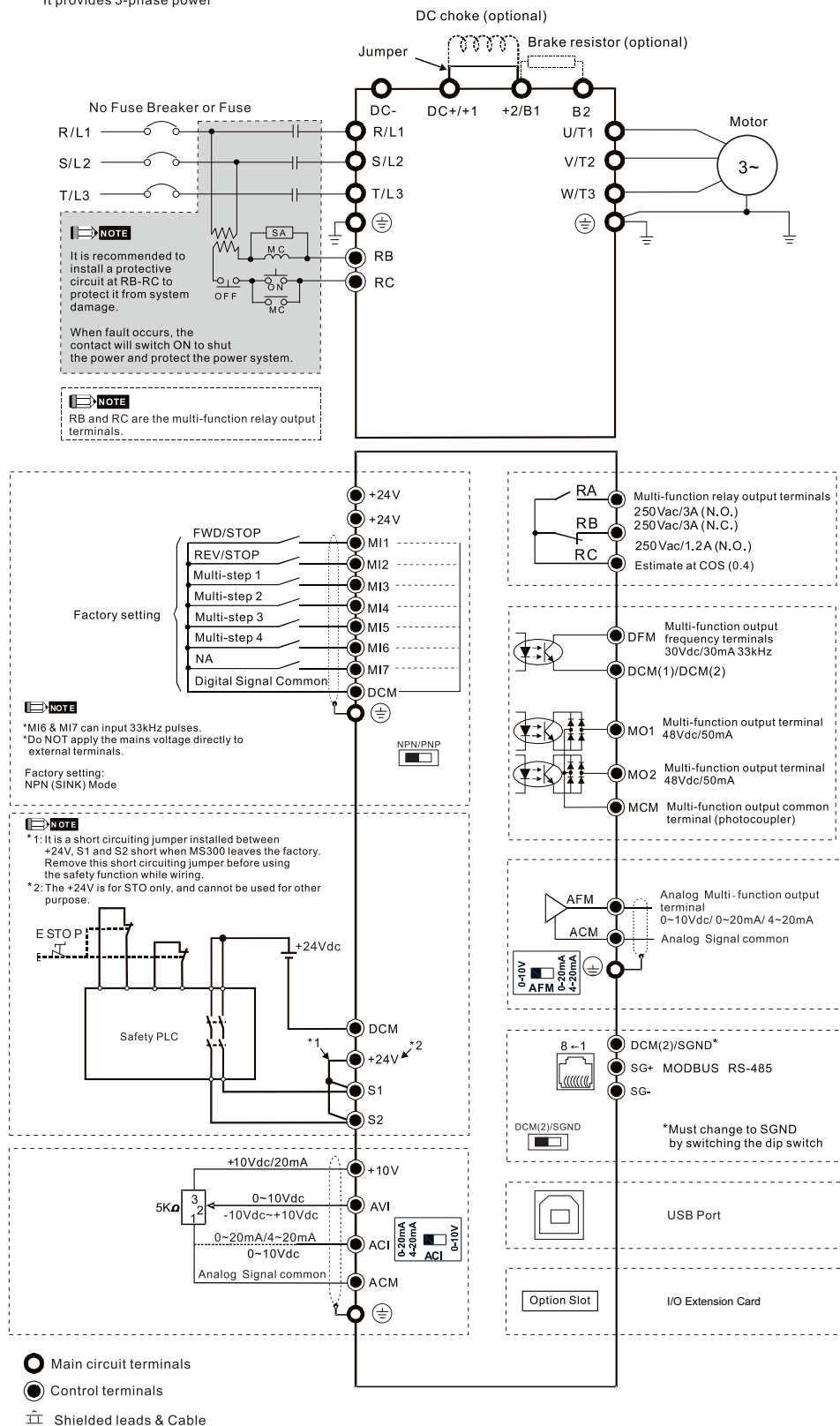
Operating Environment

Operating Environment	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)		
Vibration		Compliant with IEC 60068-2-6		
Shock		Compliant with IEC/EN 60068-2-27		

Please refer to the user manual for more details

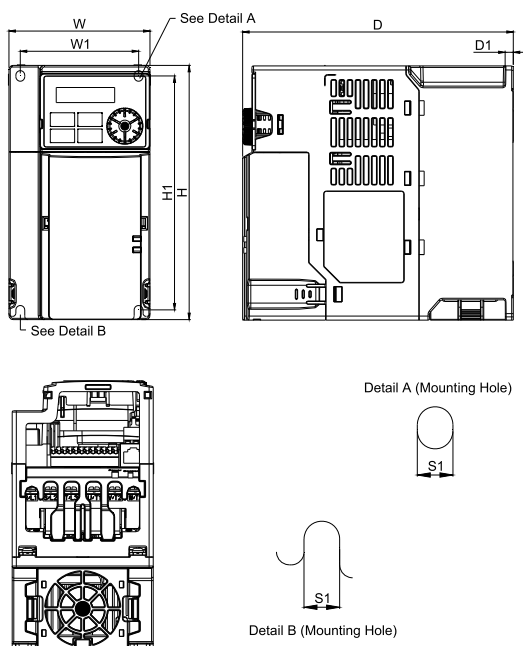
Wiring

It provides 3-phase power

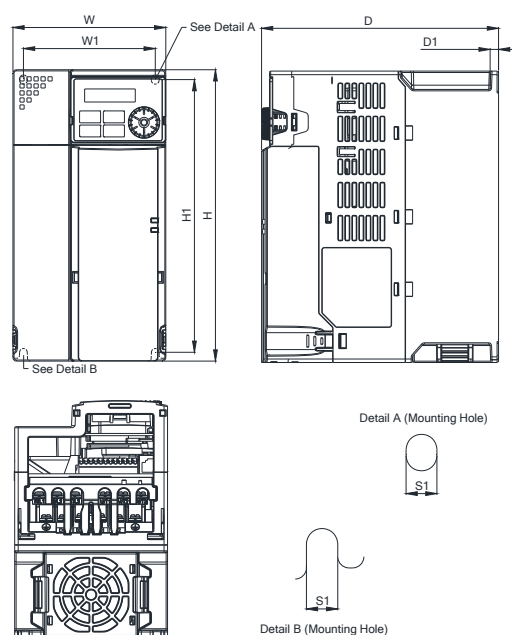


Dimensions

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

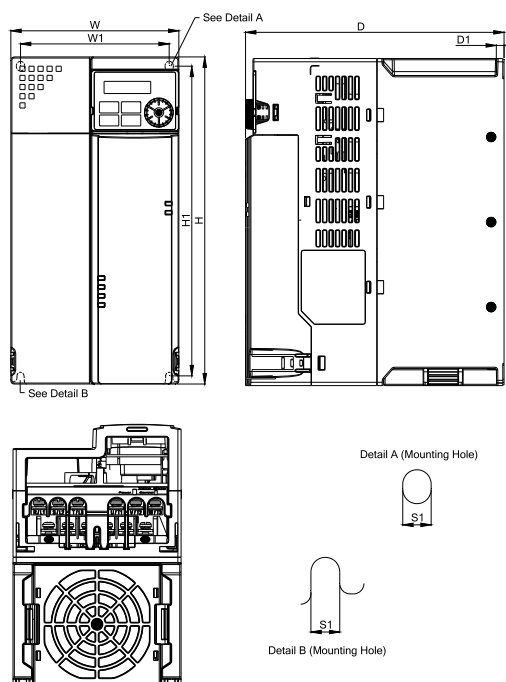
VFD25AMH23ANSLA
VFD13AMH43ANSLA
VFD17AMH43ANSLA

FRAME D2

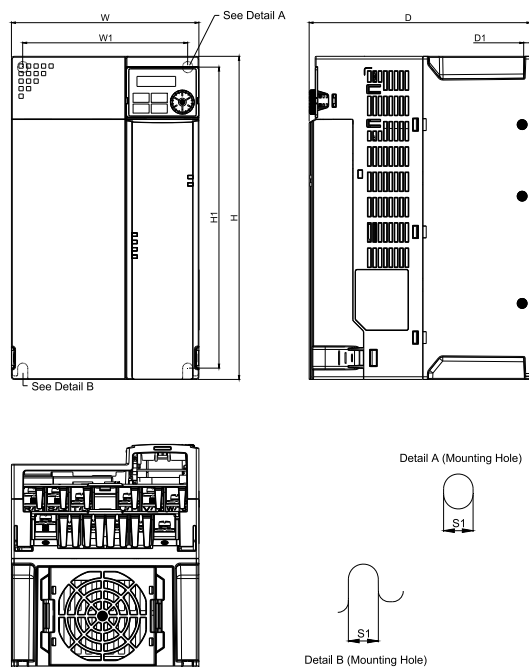
VFD13AMH43AFSLA
VFD17AMH43AFSLA

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

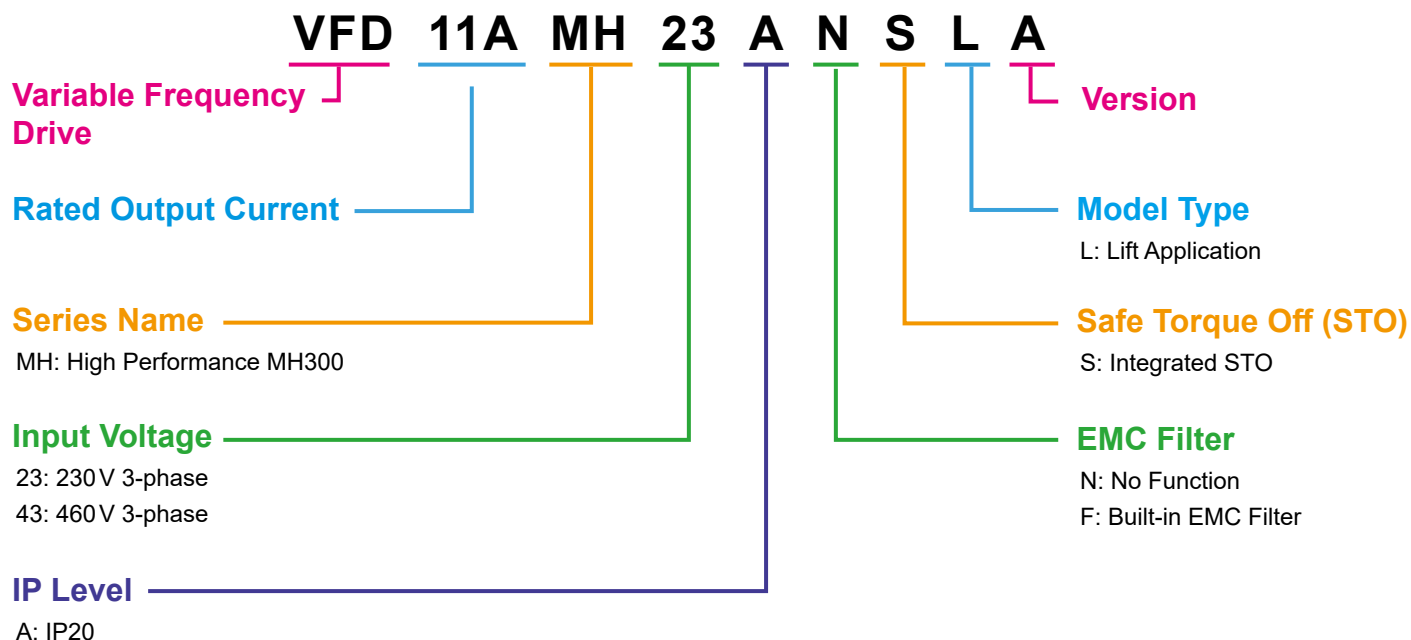
Frame		W	H	D	W1	H1	D1	S1
F1	mm	175.0	300.0	207.0	154.0	279.5	6.5	8.4
	inch	6.89	11.81	8.15	6.06	11.00	0.26	0.33

Option Card

■ I/O Extension Card (EMM-D3R2CA)

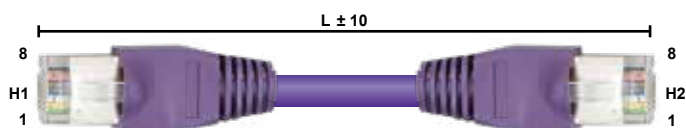
 I/O Extension Card	Terminals	Description
	24V, DCM	Output power: $+24 V_{DC} \pm 10\% < 30\text{mA}$
	MI10 ~ MI12	Refer to Pr.02-26~Pr.02-28 to program the multi-function Choose SINK (NPN) / SOURCE (PNP) from SSW1 Internal power is supplied by terminal 24 V: $+24 V_{DC} \pm 5\%$ If external power is $+24 V_{DC}$, the maximum voltage is $30 V_{DC}$ and the minimum voltage is $19 V_{DC}$ ON: the activation current is 6.5mA OFF: leakage current tolerance is $10\mu\text{A}$
	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]			
230 V / 3-phase					
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	-
					-
460 V / 3-phase					
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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