



Digitized Automation for a Changing World

Delta Compact Elevator Drive MH300-L



www.deltaww.com

 **DELTA**
Smarter. Greener. Together.

Overview

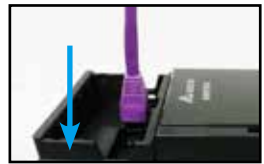
Compact design, quick and easy installation, user-friendly operation

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

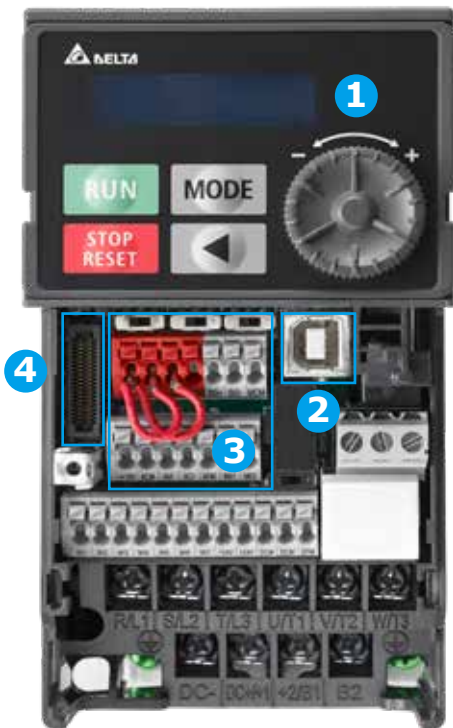


Screwless Front Case
Press on both side tabs to remove the case





Remove the front case



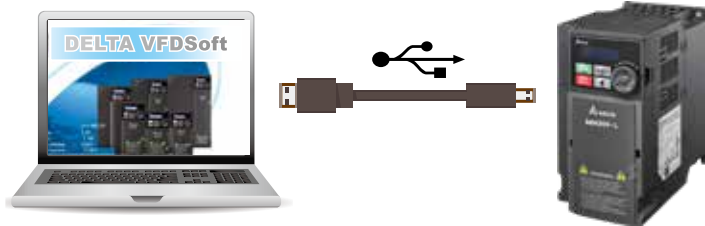
1 User-friendly Control and Display

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

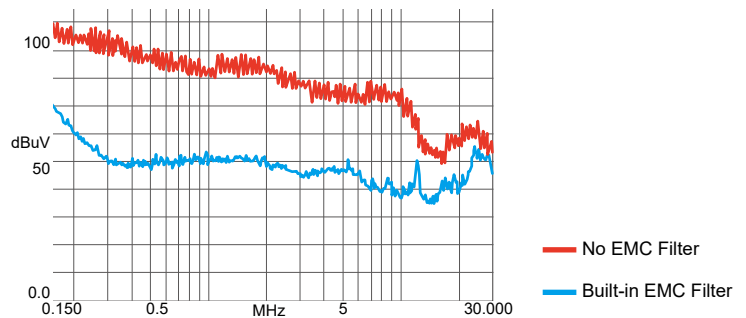
Built-in I/O slot for flexible application

I/O Extension Card (EMM-D3R2CA)



Built-in EMC Filter

The built-in Class A (C2) EMC filter is compliant with the EN 12015/EN 12016 standards for lift applications. This allows MH300-L to realize robust performance without additional procurement needs. It saves 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

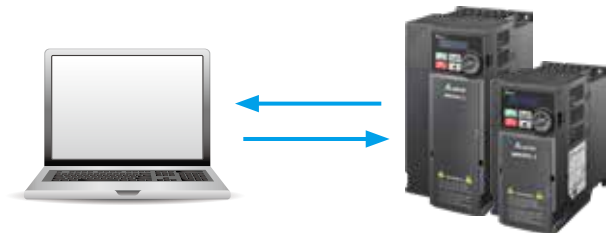
Rated current 150% for 60 seconds; 200% for 3 seconds

Versatile Communication Protocols

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

Built-in PLC

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



Built-in Brake Chopper

Enhance braking capability by combining an additional braking resistor

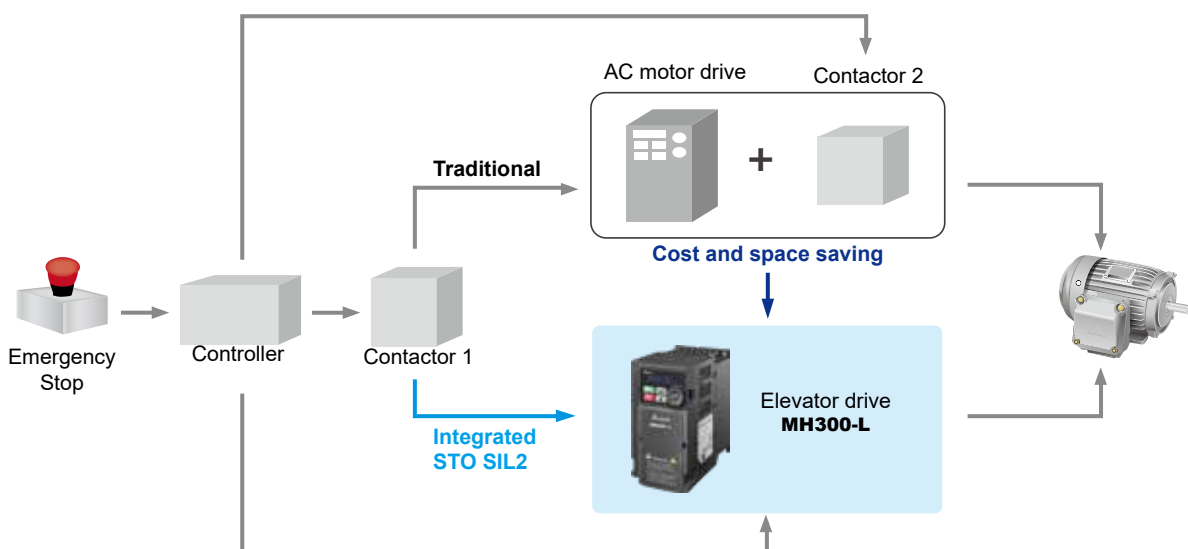
Emergency Power Supply (EPS)

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 _{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 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 _{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 |

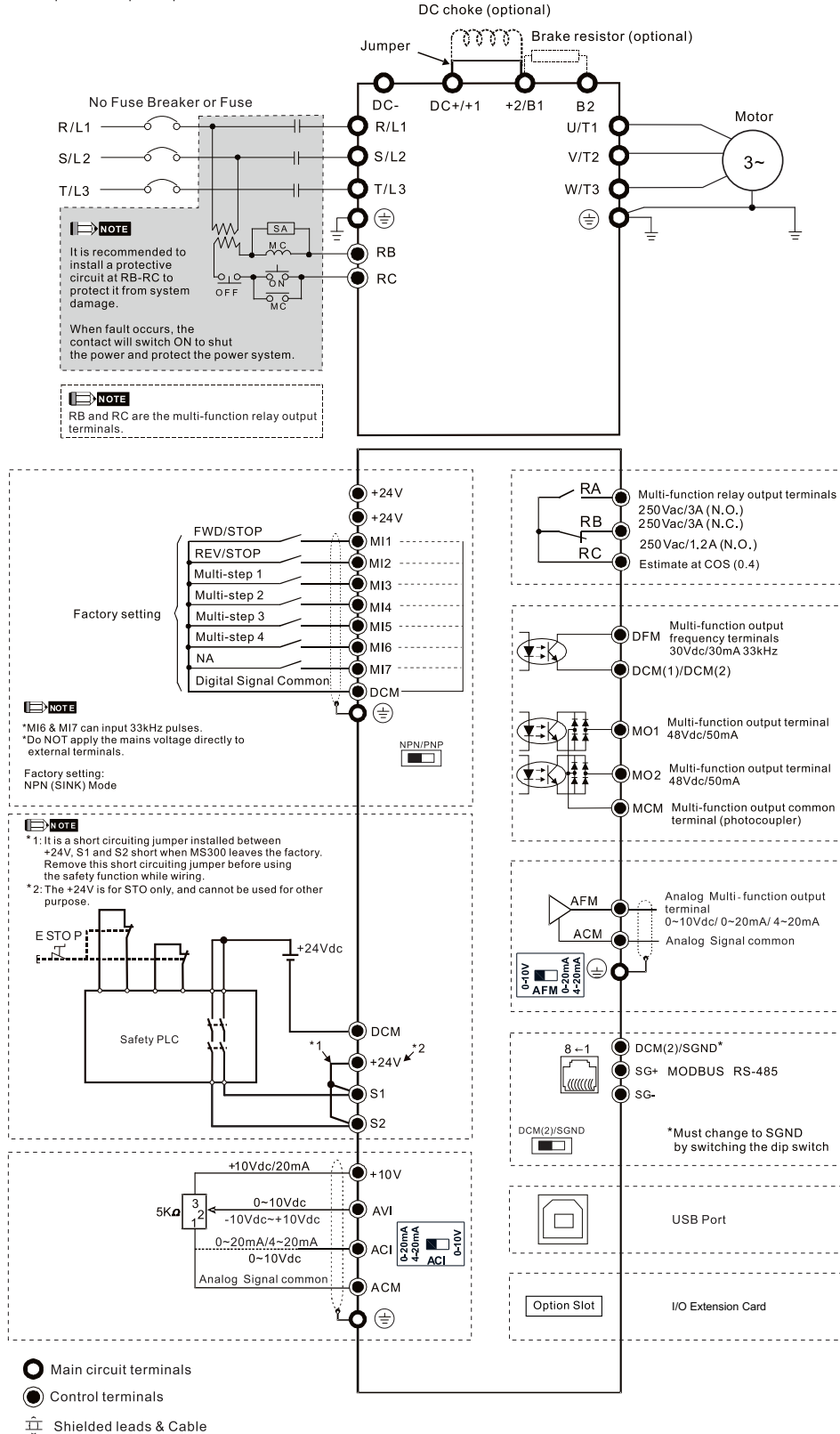
Operating Environment

| | | | | |
|------------------------------|-----------------------|--|---------------------|----------------------------------|
| 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

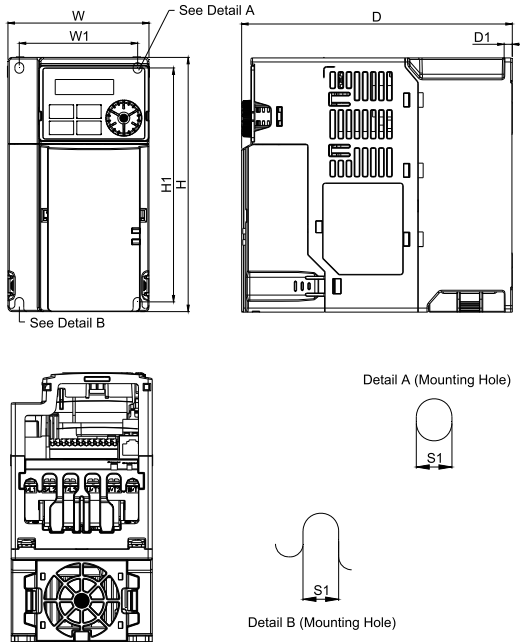
Wiring

It provides 3-phase power

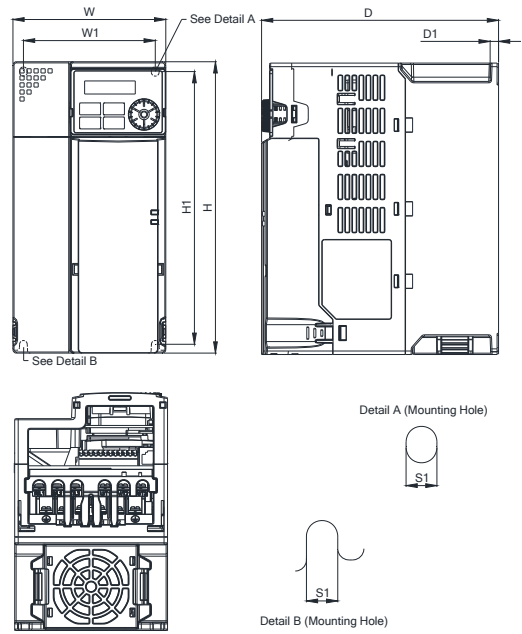


Dimensions

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

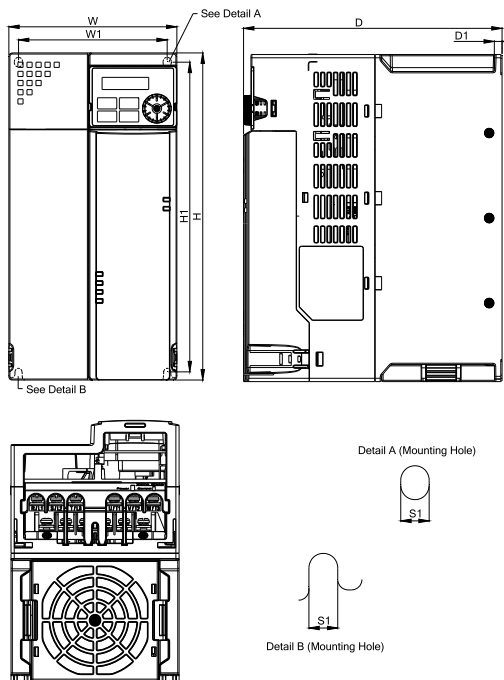
VFD25AMH23ANSLA
VFD13AMH43ANSLA
VFD17AMH43ANSLA

FRAME D2

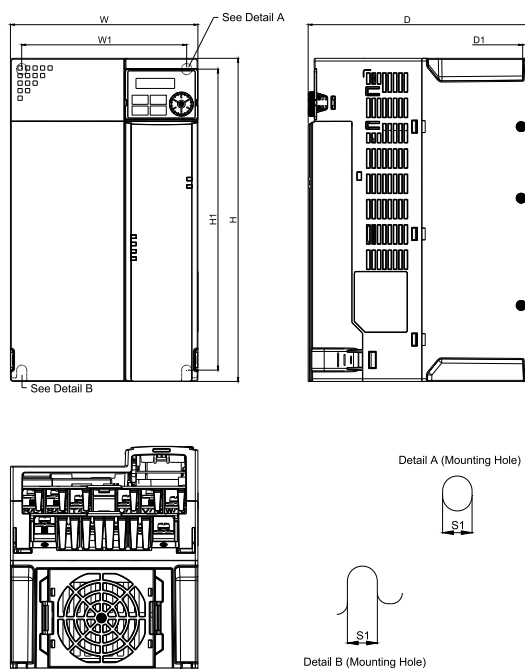
VFD13AMH43AFSLA
VFD17AMH43AFSLA

| 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

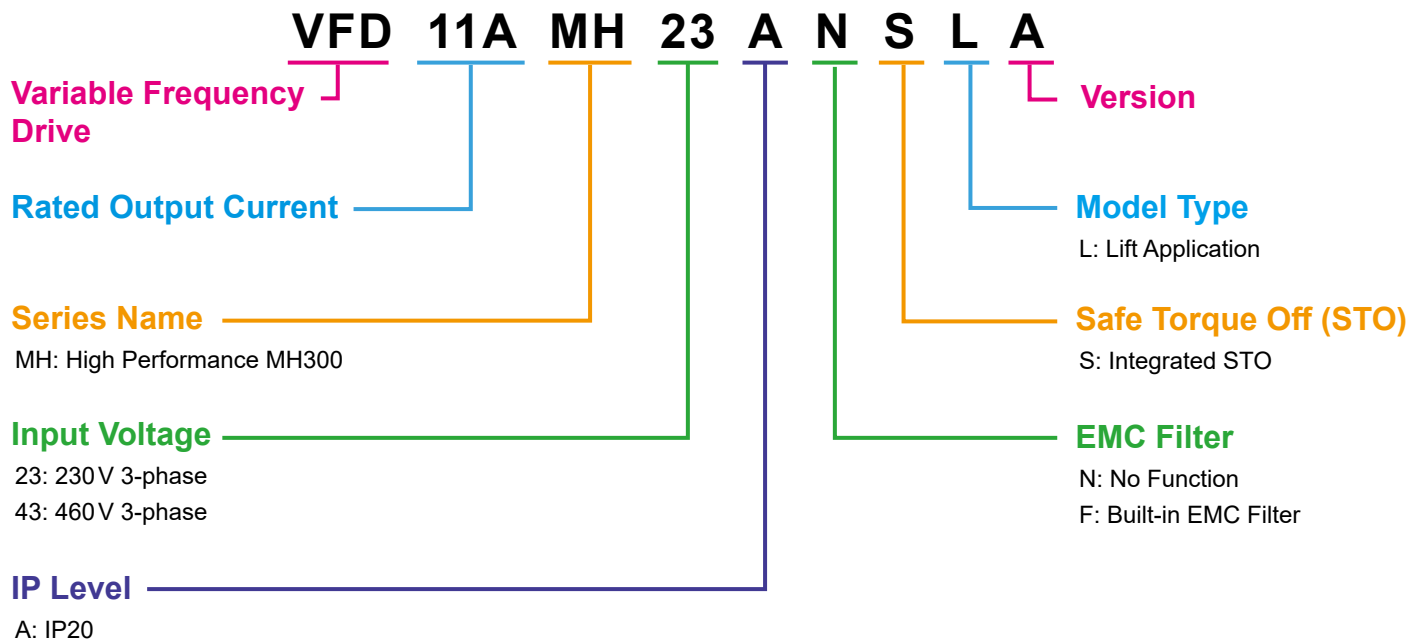
| Frame | | W | H | D | W1 | H1 | D1 | S1 |
|-------|------|-------|-------|-------|-------|-------|------|------|
| F1 | mm | 175.0 | 300.0 | 207.0 | 154.0 | 279.5 | 6.5 | 8.4 |
| | inch | 6.89 | 11.81 | 8.15 | 6.06 | 11.00 | 0.26 | 0.33 |

Option Card

I/O Extension Card (EMM-D3R2CA)

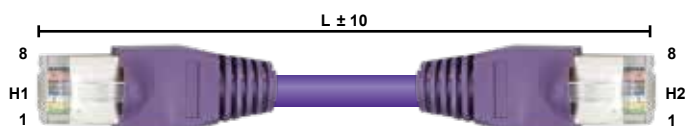
| | Terminals | Description |
|---|-------------|--|
|  I/O Extension Card | 24V, DCM | Output power: $+24 V_{DC} \pm 10\% < 30mA$ |
| | MI10 ~ MI12 | Refer to Pr.02-26~Pr.02-28 to program the multi-function Choose SINK (NPN) / SOURCE (PNP) from SSW1 Internal power is supplied by terminal 24 V: $+24 V_{DC} \pm 5\%$ 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 Function: To output each monitor signal, such as drive is in operation, frequency attained or overload indication |
| | RC10 ~ RC11 | |

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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