

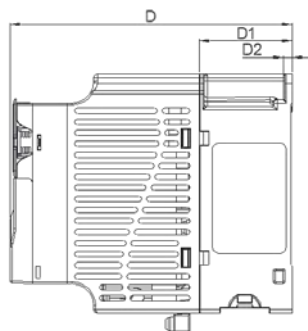
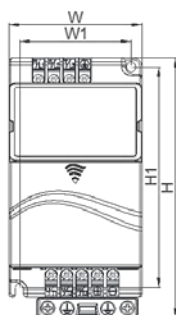
| 115V          |                                   | 115V                                            |     |             |
|---------------|-----------------------------------|-------------------------------------------------|-----|-------------|
|               | Voltage Class                     |                                                 |     |             |
|               | Model Number VFD-___ E            | 002                                             | 004 | 007         |
|               | Max. Applicable Motor Output (kW) | 0.2                                             | 0.4 | 0.75        |
|               | Max. Applicable Motor Output (hp) | 0.25                                            | 0.5 | 1.0         |
| Output Rating | Rated Output Capacity (kVA)       | 0.6                                             | 1.0 | 1.6         |
|               | Rated Output Current (A)          | 1.6                                             | 2.5 | 4.2         |
|               | Maximum Output Voltage (V)        | 3-phase proportional to twice the input voltage |     |             |
|               | Output Frequency (Hz)             | 0.1~599 Hz                                      |     |             |
| Input Rating  | Carrier Frequency (kHz)           | 1-15                                            |     |             |
|               | Rated Input Current (A)           | Single-phase                                    |     |             |
|               | Rated Voltage/Frequency           | 6                                               | 9   | 18          |
|               | Voltage Tolerance                 | Single phase 100-120V, 50/60Hz                  |     |             |
|               | Frequency Tolerance               | ±10% (90-132V)                                  |     |             |
|               | Cooling Method                    | Natural cooling                                 |     | Fan cooling |
|               | Weight (kg)                       | 1.2                                             | 1.2 | 1.2         |

| 230V                              |                             | 230V                                            |         |         |             |       |                              |     |      |      |     |
|-----------------------------------|-----------------------------|-------------------------------------------------|---------|---------|-------------|-------|------------------------------|-----|------|------|-----|
| Voltage Class                     |                             |                                                 |         |         |             |       |                              |     |      |      |     |
| Model Number VFD-__ E             |                             | 002                                             | 004     | 007     | 015         | 022   | 037                          | 055 | 075  | 110  | 150 |
| Max. Applicable Motor Output (kW) |                             | 0.2                                             | 0.4     | 0.75    | 1.5         | 2.2   | 3.7                          | 5.5 | 7.5  | 11   | 15  |
| Max. Applicable Motor Output (hp) |                             | 0.25                                            | 0.5     | 1.0     | 2.0         | 3.0   | 5.0                          | 7.5 | 10.0 | 15   | 20  |
| Output Rating                     | Rated Output Capacity (kVA) | 0.6                                             | 1.0     | 1.6     | 2.9         | 4.2   | 6.5                          | 9.5 | 12.5 | 17.1 | 25  |
|                                   | Rated Output Current (A)    | 1.6                                             | 2.5     | 4.2     | 7.5         | 11.0  | 17                           | 25  | 33   | 45   | 65  |
|                                   | Maximum Output Voltage (V)  | 3-phase proportional to twice the input voltage |         |         |             |       |                              |     |      |      |     |
|                                   | Output Frequency (Hz)       | 0.1~599Hz                                       |         |         |             |       |                              |     |      |      |     |
| Carrier Frequency (kHz)           |                             | 1-15                                            |         |         |             |       |                              |     |      |      |     |
| Input Rating                      | Rated Input Current (A)     | Single/3-phase                                  |         |         |             |       | 3-phase                      |     |      |      |     |
|                                   |                             | 4.9/1.9                                         | 6.5/2.7 | 9.7/5.1 | 15.7/9      | 24/15 | 20.6                         | 26  | 34   | 48   | 70  |
|                                   | Rated Voltage/Frequency     | Single/3-phase, 200-240 V, 50/60 Hz             |         |         |             |       | 3-phase, 200-240 V, 50/60 Hz |     |      |      |     |
|                                   | Voltage Tolerance           | ±10% (180-264 V)                                |         |         |             |       |                              |     |      |      |     |
| Frequency Tolerance               |                             | ±5% (47-63 Hz)                                  |         |         |             |       |                              |     |      |      |     |
| Cooling Method                    |                             | Natural cooling                                 |         |         | Fan cooling |       |                              |     |      |      |     |
| Weight (kg)                       |                             | 1.1                                             | 1.1     | 1.1     | 1.9         | 1.9   | 1.9                          | 3.5 | 3.5  | 3.57 | 6.6 |

| 460V          |                                   | 460V                                  |      |     |             |      |      |      |      |                |
|---------------|-----------------------------------|---------------------------------------|------|-----|-------------|------|------|------|------|----------------|
|               | Voltage Class                     |                                       |      |     |             |      |      |      |      |                |
|               | Model Number VFD-___ E            | 004                                   | 007  | 015 | 022         | 037  | 055  | 075  | 110  | 150 185 220    |
|               | Max. Applicable Motor Output (kW) | 0.4                                   | 0.75 | 1.5 | 2.2         | 3.7  | 5.5  | 7.5  | 11.0 | 15 18.5 22     |
|               | Max. Applicable Motor Output (hp) | 0.5                                   | 1.0  | 2.0 | 3.0         | 5.0  | 7.5  | 10.0 | 15.0 | 20 25 30       |
| Output Rating | Rated Output Capacity (kVA)       | 1.2                                   | 2.0  | 3.3 | 4.4         | 6.8  | 9.9  | 13.7 | 18.3 | 24 29 34       |
|               | Rated Output Current (A)          | 1.5                                   | 2.5  | 4.2 | 5.5         | 8.5  | 13.0 | 18.0 | 24.0 | 32 38 45       |
|               | Maximum Output Voltage (V)        | 3-phase proportional to input voltage |      |     |             |      |      |      |      |                |
|               | Output Frequency (Hz)             | 0.1~599 Hz                            |      |     |             |      |      |      |      |                |
| Input Rating  | Carrier Frequency (kHz)           | 1-15                                  |      |     |             |      |      |      |      |                |
|               | Rated Input Current (A)           | 3-phase                               |      |     |             |      |      |      |      |                |
|               | Rated Voltage/Frequency           | 1.9                                   | 3.2  | 4.3 | 7.1         | 11.2 | 14   | 19   | 26   | 35 41 49       |
|               | Voltage Tolerance                 | 3-phase, 380-480 V, 50/60 Hz          |      |     |             |      |      |      |      |                |
|               | Frequency Tolerance               | ±10% (342-528 V)                      |      |     |             |      |      |      |      |                |
|               | Cooling Method                    | Natural cooling                       |      |     | Fan cooling |      |      |      |      |                |
|               | Weight (kg)                       | 1.2                                   | 1.2  | 1.2 | 1.9         | 1.9  | 4.2  | 4.2  | 4.2  | 7.47 7.47 7.47 |

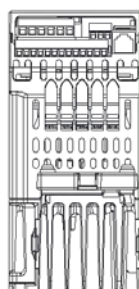
|                                  |                                    |                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Control Characteristics          | Control System                     |                                                                                                                                                                                                                                                         | SPWM (Sinusoidal Pulse Width Modulation) Control (V/F or sensorless vector control)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | Frequency Setting Resolution       |                                                                                                                                                                                                                                                         | 0.01 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | Output Frequency Resolution        |                                                                                                                                                                                                                                                         | 0.01 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | Torque Characteristics             |                                                                                                                                                                                                                                                         | Including the auto-torque/auto-slip compensation; starting torque can be 150% at 3.0 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | Overload Endurance                 |                                                                                                                                                                                                                                                         | 150% of rated current for 1 minute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|                                  | Skip Frequency                     |                                                                                                                                                                                                                                                         | Three zones, setting range 0.1~599 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                  | Accel/Decel Time                   |                                                                                                                                                                                                                                                         | 0.1 to 600 seconds (2 Independent setting of Accel/Decel time)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                  | Stall Prevention Level             |                                                                                                                                                                                                                                                         | Setting 20 to 250% of rated current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  | DC Braking                         |                                                                                                                                                                                                                                                         | Operation frequency 0.1~599.0 Hz, output 0~100% rated current<br>Start time 0~60 seconds, stop time 0~60 seconds                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                  | Regenerated Braking Torque         |                                                                                                                                                                                                                                                         | Approx. 20% (up to 125% possible with optional brake resistor or externally mounted brake unit, 1-15hp models (built-in brake chopper))                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                  | V/F Pattern                        |                                                                                                                                                                                                                                                         | Adjustable V/F pattern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                  | Operating Characteristics          | Frequency Setting                                                                                                                                                                                                                                       | Keypad                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| External Signal                  |                                    |                                                                                                                                                                                                                                                         | Potentiometer 5kΩ/0.5 W, 0 to +10 V <sub>DC</sub> , 4 to 20 mA, RS-485 interface;<br>Multi-function Inputs 3 to 9 (15 steps, Jog, up/down)                                                                                                                                                                                                                                                                                                                                                                                                       |
| Operation Setting Signal         |                                    | Keypad                                                                                                                                                                                                                                                  | Set by RUN and STOP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                  |                                    | External Signal                                                                                                                                                                                                                                         | 2 wires/3 wires (MI1, MI2, MI3), JOG operation, RS-485 serial interface (MODBUS), programmable logic controller                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Multi-function Input Signal      |                                    | Multi-step selection 0 to 15, Jog, accel/decel inhibit, 2 accel/decel switches, counter, external Base Block (NC, NO), auxiliary motor control is invalid, AC1/AVI/AUI selections, driver reset, UP/DOWN key settings, sink/source (=NPN/PNP) selection |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Multi-function Output Indication |                                    | AC drive operating, frequency attained, non-zero frequency, Base Block, fault indication, local/remote indication, auxiliary motor output, drive is ready, overheat alarm, emergency stop and status selections of input terminals (NC/NO)              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Analog Output Signal             |                                    | Output frequency/current                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Alarm Output Contact             |                                    |                                                                                                                                                                                                                                                         | Contact will be On when drive malfunctions<br>(1 Form C/change-over contact or 1 open collector output)                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Operation Functions              |                                    |                                                                                                                                                                                                                                                         | Built-in PLC, AVR, accel/decel S-Curve, over-voltage/over-current stall prevention, 5 fault records, reverse inhibition, momentary power loss restart, DC braking, auto torque/slip compensation, auto tuning, adjustable carrier frequency, output frequency limits, parameter lock/reset, vector control, PID control, external counter, MODBUS communication, abnormal reset, abnormal re-start, power-saving, sleep/wake function, fan control, 1st/2nd frequency source selections, 1st/2nd frequency source combination, NPN/PNP selection |
| Protection Functions             |                                    |                                                                                                                                                                                                                                                         | Over voltage, over current, under voltage, under current, external fault, overload, ground fault, overheating, electronic thermal, IGBT short circuit, PTC, instantly stop and then reboot (up to 20 sec by setting parameter)                                                                                                                                                                                                                                                                                                                   |
| Display Keypad                   |                                    |                                                                                                                                                                                                                                                         | 6-key, 7-segment LED with 4-digit, 5 status LED, master frequency, output frequency, output current, custom units, parameter values for setup and lock, faults, RUN, STOP, RESET, FWD/REV                                                                                                                                                                                                                                                                                                                                                        |
| Built-in EMC Filter              |                                    |                                                                                                                                                                                                                                                         | For 230 V 1-phase and 460 V 3-phase models                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Environmental Conditions         | Enclosure Rating                   |                                                                                                                                                                                                                                                         | IP20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                  | Pollution Degree                   |                                                                                                                                                                                                                                                         | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                  | Installation Location              |                                                                                                                                                                                                                                                         | Altitude 1,000 m or lower, keep from corrosive gasses, liquid and dust                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                                  | Ambient Temperature                |                                                                                                                                                                                                                                                         | -10℃ to + 50℃ (40℃ for side-by-side mounting) Non-Condensing and not frozen                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                  | Storage/Transportation Temperature |                                                                                                                                                                                                                                                         | -20℃ to 60℃                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                  | Ambient Humidity                   |                                                                                                                                                                                                                                                         | Below 90% RH (non-condensing)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                  | Vibration                          |                                                                                                                                                                                                                                                         | 10 Hz ≤ f ≤ 57 Hz Fix Amplitude: 0.075 mm, 57 Hz ≤ f ≤ 150 Hz Fix Acceleration: 1 G (According to IEC 60068-2-6)                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Certifications                   |                                    |                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |

## Frame A1



### MODEL

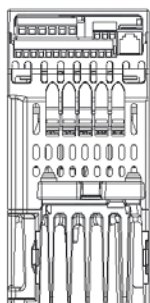
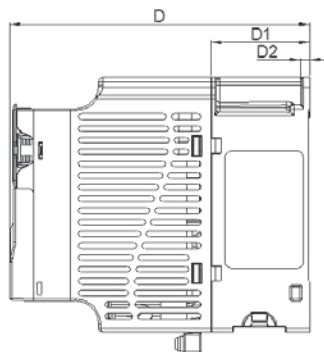
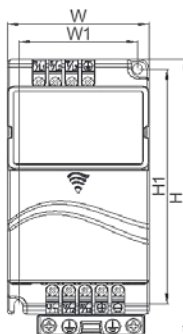
VFD002E11A/11C/11T  
VFD002E21A/21C/21T  
VFD002E23A/23C/23T  
VFD004E11A/11C/11T  
VFD004E21A/21C/21T  
VFD004E23A/23C/23T  
VFD004E43A/43C/43T  
VFD007E23A/23C/23T  
VFD007E43A/43C/43T



Unit: mm[inch]

| Frame |      | W    | W1   | H     | H1    | D     | D1   | D2   | S1   | S2   |
|-------|------|------|------|-------|-------|-------|------|------|------|------|
| A1    | mm   | 72.0 | 60.0 | 142.0 | 120.0 | 152.0 | 50.0 | 4.5  | 5.2  | 5.2  |
|       | inch | 2.83 | 2.36 | 5.59  | 4.72  | 5.98  | 1.97 | 0.18 | 0.20 | 0.20 |

## Frame A2



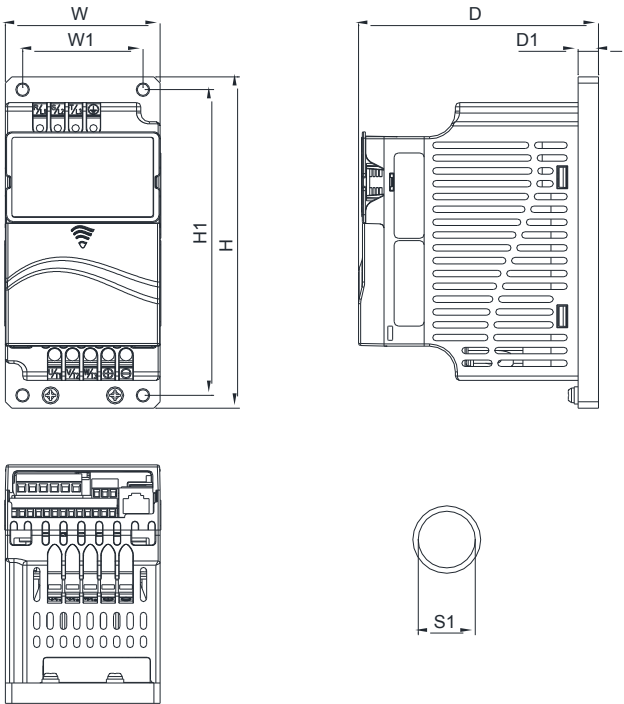
### MODEL

VFD015E23A/23C/23T  
VFD015E43A/43C/43T

Unit: mm[inch]

| Frame |      | W    | W1   | H     | H1    | D     | D1   | D2   | S1   | S2   |
|-------|------|------|------|-------|-------|-------|------|------|------|------|
| A2    | mm   | 72.0 | 60.0 | 142.0 | 120.0 | 152.0 | 50.0 | 4.5  | 5.2  | 5.2  |
|       | inch | 2.83 | 2.36 | 5.59  | 4.72  | 5.98  | 1.97 | 0.18 | 0.20 | 0.20 |

Frame A3



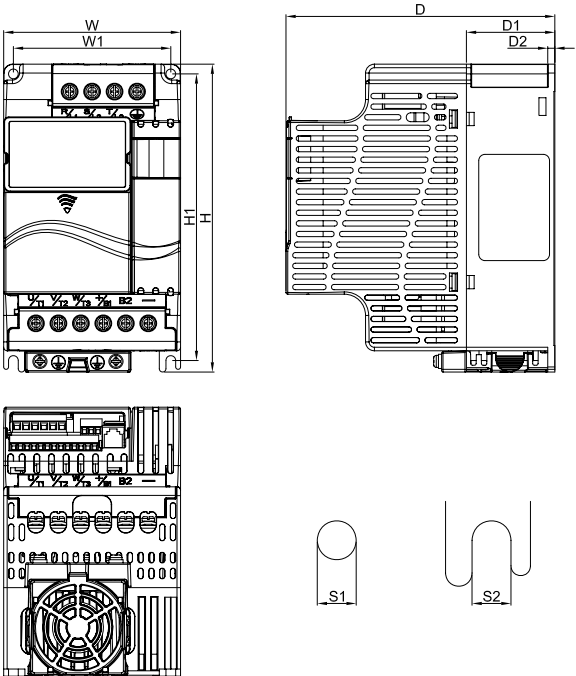
MODEL

VFD002E11P/21P/23P  
VFD004E11P/21P/23P/43P  
VFD007E21P/23P/43P  
VFD015E23P/43P

Unit: mm[inch]

| Frame |      | W    | W1   | H     | H1    | D     | D1   | S1   |
|-------|------|------|------|-------|-------|-------|------|------|
| A3    | mm   | 72.0 | 56.0 | 155.0 | 143.0 | 111.5 | 9.5  | 5.3  |
|       | inch | 2.83 | 2.20 | 6.10  | 5.63  | 4.39  | 0.37 | 0.21 |

Frame B



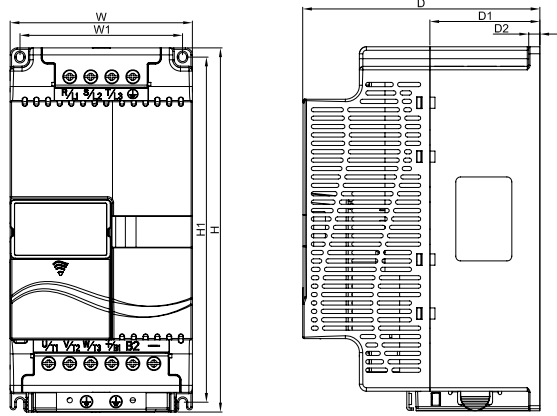
MODEL

VFD007E11A/11C  
VFD015E21A/21C  
VFD022E21A/21C  
VFD022E23A/23C  
VFD022E43A/43C  
VFD037E23A/23C  
VFD037E43A/43C

Unit: mm[inch]

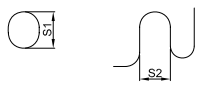
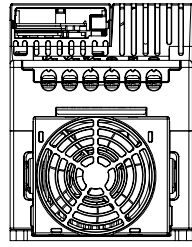
| Frame |      | W     | H     | D     | W1   | H1    | D1   | D2   | S1   | S2   |
|-------|------|-------|-------|-------|------|-------|------|------|------|------|
| B     | mm   | 100.0 | 174.0 | 152.0 | 89.0 | 162.0 | 50.0 | 4.0  | 5.5  | 5.5  |
|       | inch | 3.94  | 6.86  | 5.98  | 3.50 | 6.86  | 1.97 | 0.16 | 0.22 | 0.22 |

Frame C



MODEL

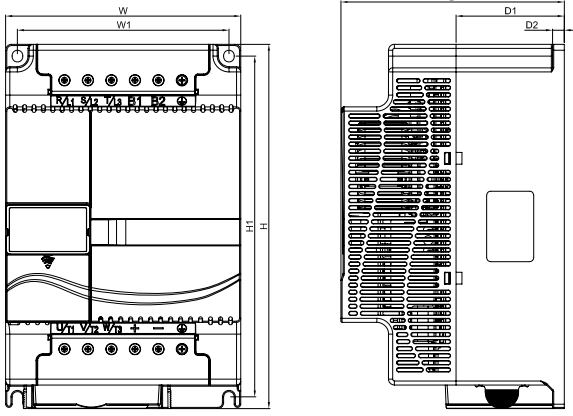
- VFD055E23A/23C
- VFD055E43A/43C
- VDF075E23A/23C
- VDF075E43A/43C
- VFD110E23A/23C
- VFD110E43A/43C



Unit: mm[inch]

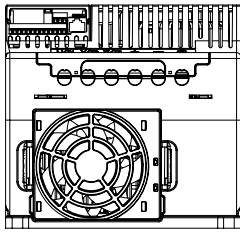
| Frame |      | W     | H     | D     | W1    | H1    | D1   | D2   | S1   | S2   |
|-------|------|-------|-------|-------|-------|-------|------|------|------|------|
| C     | mm   | 130.0 | 260.0 | 169.2 | 116.0 | 246.5 | 78.5 | 8.0  | 6.5  | 5.5  |
|       | inch | 5.12  | 10.24 | 6.66  | 4.57  | 9.70  | 3.09 | 0.31 | 0.26 | 0.22 |

Frame D



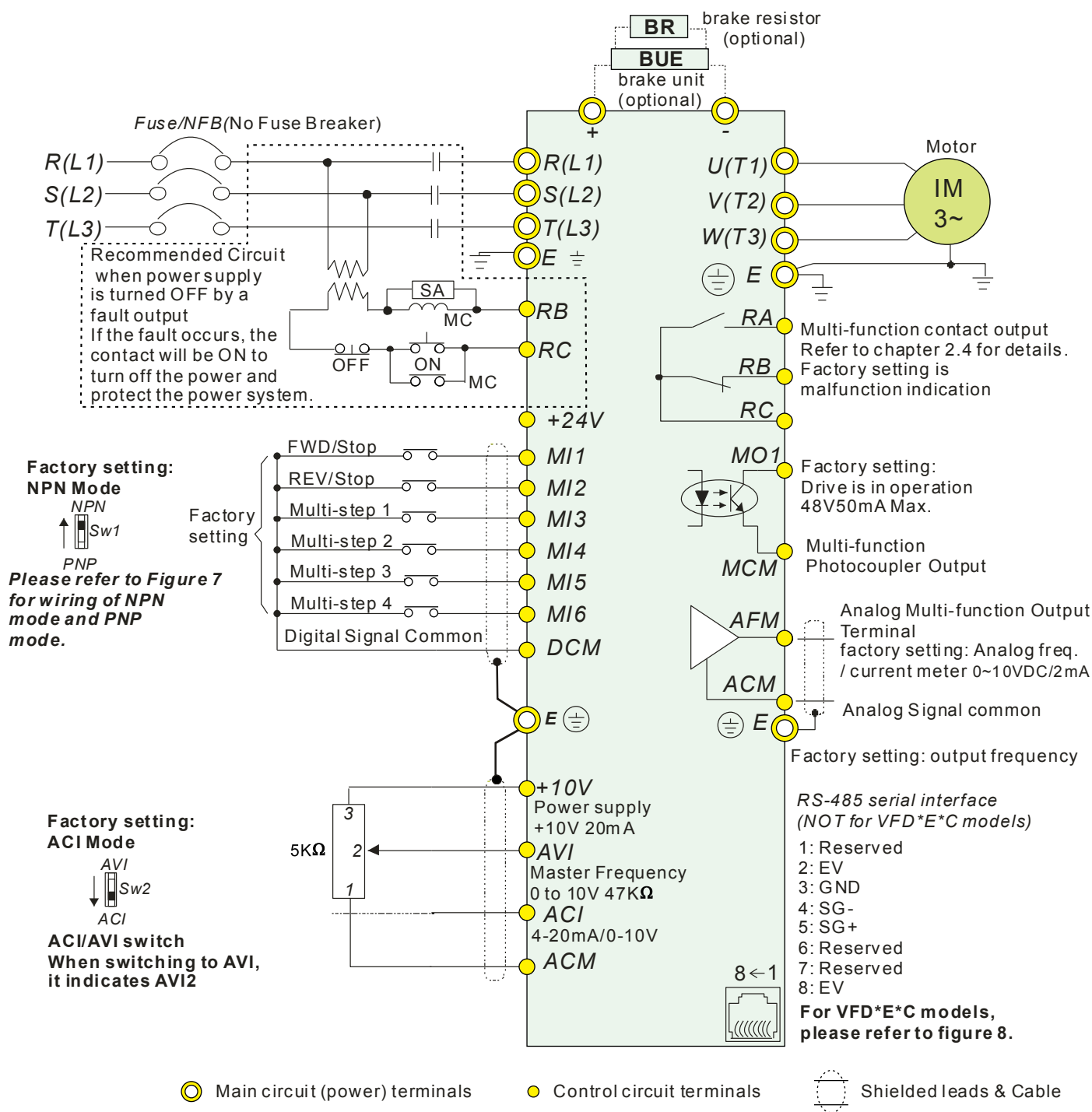
MODEL

- VFD150E23A/23C
- VFD150E43A/43C
- VFD185E43A/43C
- VFD220E43A/43C



Unit: mm[inch]

| Frame |      | W     | H     | D     | W1    | H1    | D1   | D2   | S1   | S2   |
|-------|------|-------|-------|-------|-------|-------|------|------|------|------|
| D     | mm   | 200.0 | 310.0 | 190.0 | 180.0 | 290.0 | 92.0 | 10.0 | 10.0 | 9.0  |
|       | inch | 7.87  | 12.20 | 7.48  | 7.09  | 11.42 | 3.62 | 0.39 | 0.39 | 0.35 |



## NOTE

It is recommended to install a circuit breaker at the control terminal to protect the circuit from an operation abnormality or sudden power outage.

The protection circuit uses the multi-function output terminal of the AC motor drive for connection. When an abnormal condition (closed contact) occurs, the external power supply is disconnected to protect the power system of the AC motor drive.