7.1 Rating

● Three-phase 200V power supply

Model FR-D720-□-NA		008	014	025	042	070	100	165	238	318
Applicable motor capacity (kW (HP))*1		0.1 (1/8)	0.2 (1/4)	0.4 (1/2)	0.75 (1)	1.5 (2)	2.2 (3)	3.7 (5)	5.5 (7.5)	7.5 (10)
Output	Rated capacity (kVA)*2	0.3	0.6	1.0	1.7	2.8	4.0	6.6	9.5	12.7
	Rated current (A)	0.8	1.4	2.5	4.2	7.0	10.0	16.5	23.8	31.8
	Overload current rating*3	150% 60s, 200% 0.5s (inverse-time characteristics)								
	Voltage*4	Three-phase 200 to 240V								
Power supply	Rated input AC voltage/frequency	Three-phase 200 to 240V 50Hz/60Hz								
	Permissible AC voltage fluctuation	170 to 264V 50Hz/60Hz								
	Permissible frequency fluctuation	±5%								
	Power supply capacity (kVA)*5	0.4	0.7	1.2	2.1	4.0	5.5	9.0	12.0	17.0
Protective structure (JEM1030)		Enclosed type (IP20)								
Cooling system		Self-cooling				Forced air cooling				
Approximate mass (kg (lbs))		0.5 (1.1)	0.5 (1.1)	0.8 (1.76)	1.0 (2.2)	1.4 (3.09)	1.4 (3.09)	1.8 (3.97)	3.6 (7.94)	3.6 (7.94)

● Three-phase 400V power supply

Model FR-D740-□-NA		012	022	036	050	080	120	160
Applicable motor capacity (kW (HP))*1		0.4 (1/2)	0.75 (1)	1.5 (2)	2.2 (3)	3.7 (5)	5.5 (7.5)	7.5 (10)
Output	Rated capacity (kVA)*2	0.9	1.7	2.7	3.8	6.1	9.1	12.2
	Rated current (A)	1.2	2.2	3.6	5.0	8.0	12.0	16.0
	Overload current rating*3	150% 60s, 200% 0.5s (inverse-time characteristics)						
	Voltage*4	Three-phase 380 to 480V						
Power supply	Rated input AC voltage/frequency	Three-phase 380 to 480V 50Hz/60Hz						
	Permissible AC voltage fluctuation	325 to 528V 50Hz/60Hz						
	Permissible frequency fluctuation	±5%						
	Power supply capacity (kVA)*5	1.5	2.5	4.5	5.5	9.5	12.0	17.0
Protective structure (JEM1030)		Enclosed type (IP20)						
Cooling system		Self-cooling		Forced air cooling				
Approximate mass (kg (lbs))		1.3 (2.87)	1.3 (2.87)	1.4 (3.09)	1.5 (3.31)	1.5 (3.31)	3.3 (7.28)	3.3 (7.28)

*1 The applicable motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi 4-pole standard motor.

*2 The rated output capacity indicated assumes that the output voltage is 230V for three-phase 200V class and 440V for three-phase 400V class.

*3 The % value of the overload current rating indicated is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100% load.

*4 The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the pulse voltage value of the inverter output side voltage remains unchanged at about $\sqrt{2}$ that of the power supply.

*5 The power supply capacity varies with the value of the power supply side inverter impedance (including those of the input reactor and cables).

● Single-phase 200V power supply

Model FR-D720S-□-NA		008	014	025	042	070	100
Applicable motor capacity (kW (HP))*1		0.1 (1/8)	0.2 (1/4)	0.4 (1/2)	0.75 (1)	1.5 (2)	2.2 (3)
Output	Rated capacity (kVA)*2	0.3	0.6	1.0	1.7	2.8	4.0
	Rated current (A)	0.8	1.4	2.5	4.2	7.0	10.0
	Overload current rating*3	150% 60s, 200% 0.5s (inverse-time characteristics)					
	Voltage*4	Three-phase 200 to 240V					
Power supply	Rated input AC voltage/frequency	Single-phase 200 to 240V 50Hz/60Hz					
	Permissible AC voltage fluctuation	170 to 264V 50Hz/60Hz					
	Permissible frequency fluctuation	±5%					
	Power supply capacity (kVA)*5	0.5	0.9	1.5	2.3	4.0	5.2
Protective structure (JEM1030)		Enclosed type (IP20)					
Cooling system		Self-cooling				Forced air cooling	
Approximate mass (kg (lbs))		0.5 (1.1)	0.5 (1.1)	0.9 (1.98)	1.1 (2.43)	1.5 (3.31)	2.0 (4.41)

*1 The applicable motor capacity indicated is the maximum capacity applicable for use of the Mitsubishi 4-pole standard motor.

*2 The rated output capacity indicated assumes that the output voltage is 230V.

*3 The % value of the overload current rating indicated is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below the temperatures under 100% load.

*4 The maximum output voltage does not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. However, the pulse voltage value of the inverter output side voltage remains unchanged at about $\sqrt{2}$ that of the power supply.

*5 The power supply capacity varies with the value of the power supply side inverter impedance (including those of the input reactor and cables).

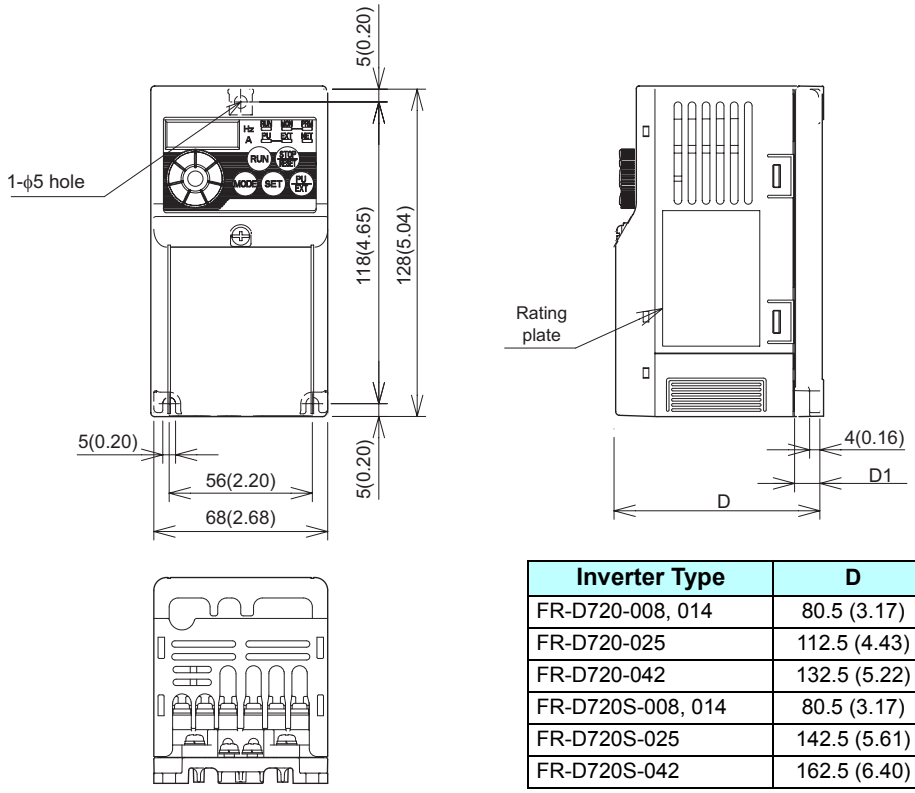
7.2 Common specifications

Control specifications	Control method		Soft-PWM control/high carrier frequency PWM control (V/F control, General-purpose magnetic flux vector control, Optimum excitation control can be selected)
	Output frequency range		0.2 to 400Hz
	Frequency setting resolution	Analog input	0.06Hz/60Hz (terminal2, 4: 0 to 10V/10bit) 0.12Hz/60Hz (terminal2, 4: 0 to 5V/9bit) 0.06Hz/60Hz (terminal4: 0 to 20mA/10bit)
		Digital input	0.01Hz
	Frequency accuracy	Analog input	Within ±1% of the max. output frequency (25°C ±10°C)
		Digital input	Within 0.01% of the set output frequency
	Voltage/frequency characteristics		Base frequency can be set from 0 to 400Hz. Constant torque/variable torque pattern can be selected
	Starting torque		150% or more (at 1Hz)...when General-purpose magnetic flux vector control and slip compensation is set
	Torque boost		Manual torque boost
	Acceleration/deceleration time setting		0.1 to 3600s (acceleration and deceleration can be set individually), linear or S-pattern acceleration/deceleration mode can be selected.
	Braking torque	Regenerative∗1	FR-D720-008 and 014, FR-D720S-008 and 014 ... 150%, FR-D720-025 and 042, FR-D740-012 and 022, FR-D720S-025 and 042 ... 100%, FR-D720-070, FR-D740-036, FR-D720S-070 ... 50%, FR-D720-100 or more, FR-D740-050 or more, FR-D720S-100 ... 20%
		DC injection brake	Operation frequency (0 to 120Hz), operation time (0 to 10s), operation voltage (0 to 30%) variable
	Stall prevention operation level		Operation current level can be set (0 to 200% adjustable), whether to use the function or not can be selected
Operation specifications	Frequency setting signal	Analog input	Two points Terminal 2: 0 to 10V, 0 to 5V can be selected Terminal 4: 0 to 10V, 0 to 5V, 4 to 20mA can be selected
		Digital input	Entered from operation panel and parameter unit. Frequency setting increments is selectable
	Start signal		Forward and reverse rotation or start signal automatic self-holding input (3-wire input) can be selected.
	Input signal		Five points You can select from among multi-speed selection, remote setting, second function selection, terminal 4 input selection, JOG operation selection, PID control valid terminal, external thermal input, PU-external operation switchover, V/F switchover, output stop, start self-holding selection, forward rotation, reverse rotation command, inverter reset, PU-NET operation switchover, external-NET operation switchover, command source switchover, inverter operation enable signal, and PU operation external interlock
	Operational functions		Maximum/minimum frequency setting, frequency jump operation, external thermal relay input selection, automatic restart after instantaneous power failure operation, forward/reverse rotation prevention, remote setting, second function, multi-speed operation, regeneration avoidance, slip compensation, operation mode selection, offline auto tuning function, PID control, computer link operation (RS-485), Optimum excitation control, power failure stop, speed smoothing control, Modbus-RTU
	Output signal	Output signal points	Open collector output	One point
			Relay output	One point
		Operating status		You can select from among inverter operation, up-to-frequency, overload alarm, output frequency detection, regenerative brake prealarm, electronic thermal relay function prealarm, inverter operation ready, output current detection, zero current detection, PID lower limit, PID upper limit, PID forward/reverse rotation output, fan alarm∗3, heatsink overheat pre-alarm, deceleration at an instantaneous power failure, PID control activated, PID output interruption, during retry, life alarm, current average value monitor, remote output, alarm output, fault output, fault output 3, and maintenance timer alarm
		For meter Output points	Analog output	0 to 10VDC: one point
		For meter		You can select from among output frequency, output current (steady), output voltage, frequency setting, converter output voltage, regenerative brake duty, electronic thermal relay function load factor, output current peak value, converter output voltage peak value, reference voltage output, motor load factor, PID set point, PID measured value, output power, PID deviation, motor thermal load factor, inverter thermal load factor 0 to 10VDC
Indication	Operation panel Parameter unit (FR-PU07)		Operating status	You can select from among output frequency, output current (steady), output voltage, frequency setting, cumulative energization time, actual operation time, converter output voltage, regenerative brake duty, electronic thermal relay function load factor, output current peak value, converter output voltage peak value, motor load factor, PID set point, PID measured value, PID deviation, inverter I/O terminal monitor, output power, cumulative power, motor thermal load factor, inverter thermal load factor, PTC thermistor resistance.
			Fault definition	Fault definition is displayed when the fault occurs and the past 8 fault definitions (output voltage/current/frequency/cumulative energization time right before the fault occurs) are stored
	Additional display by the parameter unit (FR-PU04/FR-PU07) only		Operating status	Not used
			Fault definition	Output voltage/current/frequency/cumulative energization time immediately before the fault occurs
			Interactive guidance	Function (help) for operation guide
Protective/warning function			Protective functions	Overcurrent during acceleration, overcurrent during constant speed, overcurrent during deceleration, overvoltage during acceleration, overvoltage during constant speed, overvoltage during deceleration, inverter protection thermal operation, motor protection thermal operation, heatsink overheat, input phase loss∗5 ∗6, output side earth (ground) fault overcurrent at start∗5, output phase loss, external thermal relay operation ∗5, PTC thermistor operation∗5, parameter error, PU disconnection, retry count excess ∗5, CPU fault, brake transistor alarm, inrush resistance overheat, analog input error, stall prevention operation, output current detection value exceeded ∗5, safety circuit fault
			Warning functions	Fan alarm∗3, overcurrent stall prevention, overvoltage stall prevention, PU stop, parameter write error, regenerative brake prealarm ∗5, electronic thermal relay function prealarm, maintenance output ∗5, undervoltage, operation panel lock, password locked, inverter reset, safety stop
Environment	Surrounding air temperature			-10°C to +50°C (14°F to 122°F) (non-freezing) ∗4
	Ambient humidity			90%RH maximum (non-condensing)
	Storage temperature∗2			-20°C to +65°C (-4°F to 149°F)
	Atmosphere			Indoors (without corrosive gas, flammable gas, oil mist, dust and dirt etc.)
	Altitude/vibration			Maximum 1000m (3280.80 feet) above sea level, 5.9m/s ^{2} or less

∗1 The braking torque indicated is a short-duration average torque (which varies with motor loss) when the motor alone is decelerated from 60Hz in the shortest time and is not a continuous regenerative torque. When the motor is decelerated from the frequency higher than the base frequency, the average deceleration torque will reduce. Since the inverter does not contain a brake resistor, use the optional brake resistor when regenerative energy is large. A brake unit (FR-BU2) may also be used.
∗2 Temperatures applicable for a short time, e.g. in transit.
∗3 As the FR-D720-042 or less, FR-D740-022 or less, FR-D720S-042 or less is not provided with the cooling fan, this alarm does not function.
∗4 When using the inverters at the surrounding air temperature of 40°C (104°F) or less, the inverters can be installed closely attached (0cm clearance).
∗5 This protective function does not function in the initial status.
∗6 This protective function is available with the three-phase power input specification model only.

7.3 Outline dimension drawings

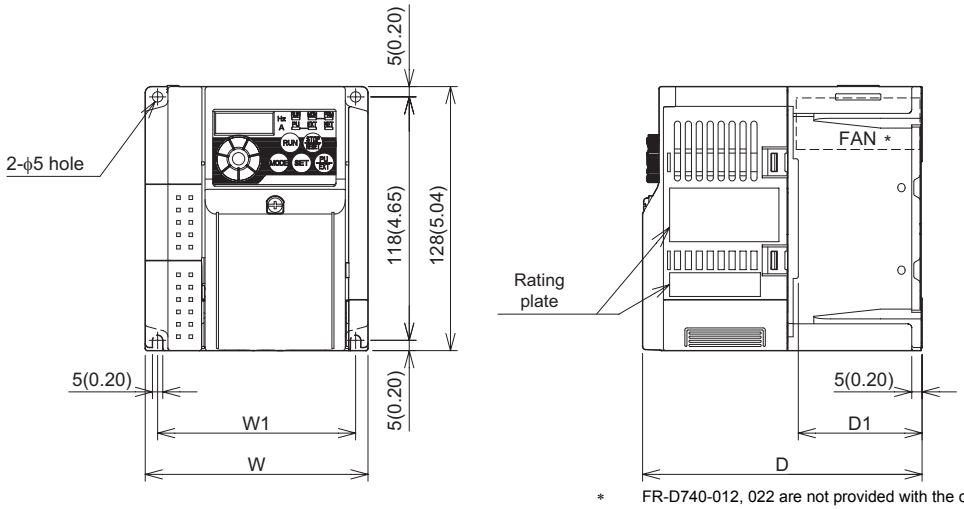
●FR-D720-008 to 042
●FR-D720S-008 to 042



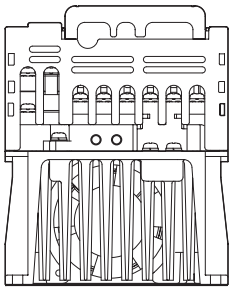
Inverter Type	D	D1
FR-D720-008, 014	80.5 (3.17)	10 (0.39)
FR-D720-025	112.5 (4.43)	42 (1.65)
FR-D720-042	132.5 (5.22)	62 (2.44)
FR-D720S-008, 014	80.5 (3.17)	10 (0.39)
FR-D720S-025	142.5 (5.61)	42 (1.65)
FR-D720S-042	162.5 (6.40)	62 (2.44)

(Unit: mm (inches))

●FR-D720-070 to 165
●FR-D740-012 to 080
●FR-D720S-070



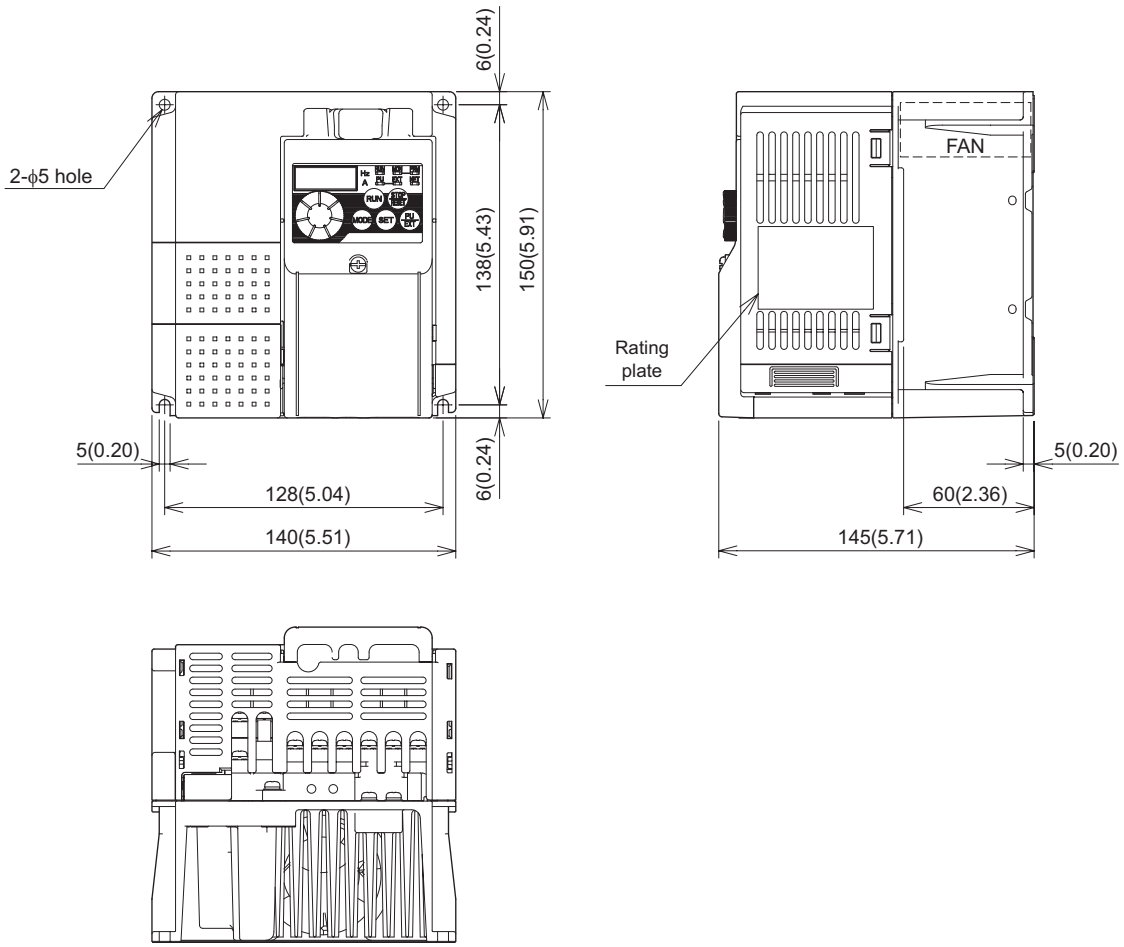
* FR-D740-012, 022 are not provided with the cooling fan.



Inverter Type	W	W1	D	D1
FR-D720-070, 100	108 (4.25)	96 (3.78)	135.5 (5.34)	60 (2.36)
FR-D720-165	170 (6.69)	158 (6.22)	142.5 (5.61)	66.5 (2.62)
FR-D740-012, 022	108 (4.25)	96 (3.78)	129.5 (5.10)	54 (2.13)
FR-D740-036			135.5 (5.34)	60 (2.36)
FR-D740-050			155.5 (6.12)	
FR-D740-080			165.5 (6.52)	
FR-D720S-070			155.5 (6.12)	

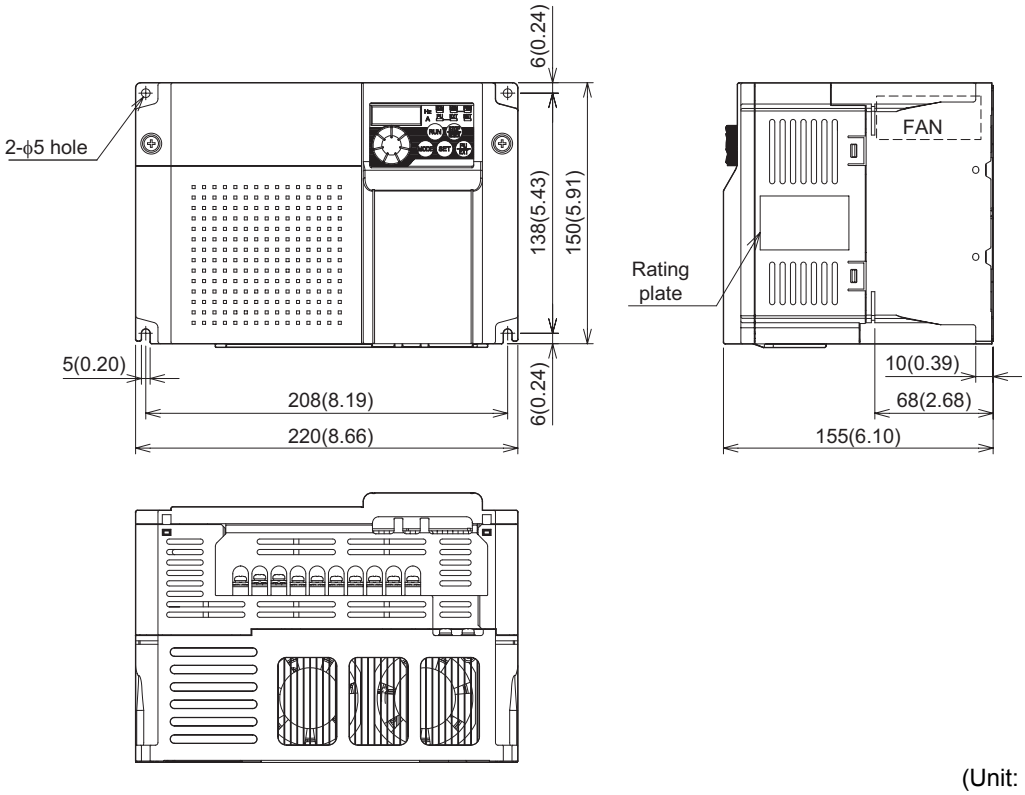
(Unit: mm (inches))

●FR-D720S-100



(Unit: mm (inches))

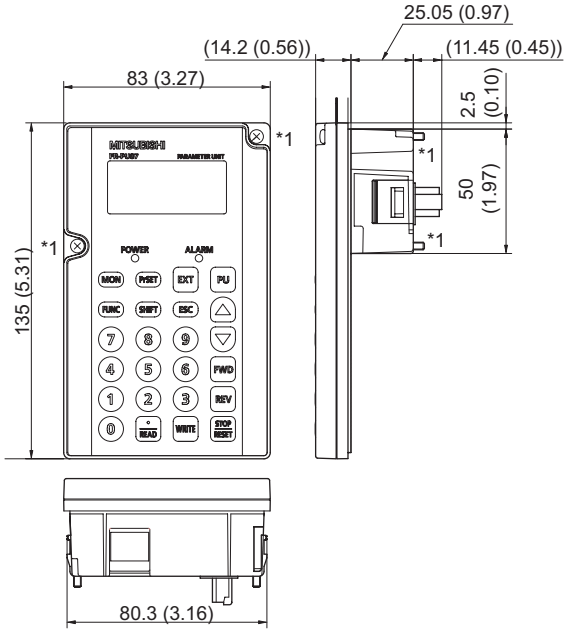
●FR-D720-238, 318
●FR-D740-120, 160



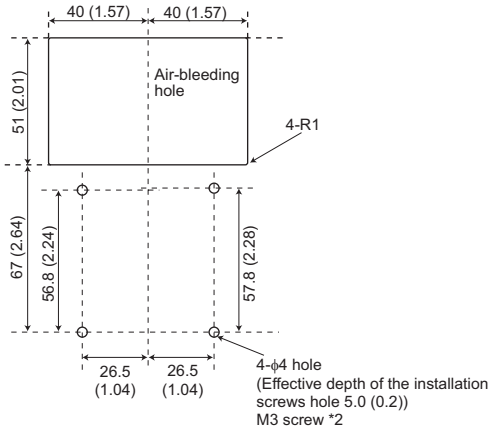
(Unit: mm (inches))

●Parameter unit (option) (FR-PU07)

<Outline drawing>



<Panel cut dimension drawing>



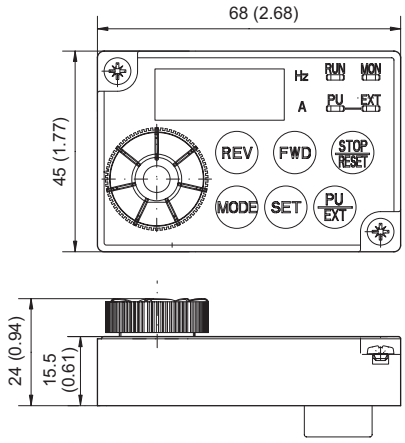
∗1 When installing the FR-PU07 on the enclosure, etc., remove screws or fix the screws to the FR-PU07 with M3 nuts.

∗2 Select the installation screw whose length will not exceed the effective depth of the installation screw hole.

(Unit: mm (inches))

●Enclosure surface operation panel (option) (FR-PA07)

<Outline drawing>



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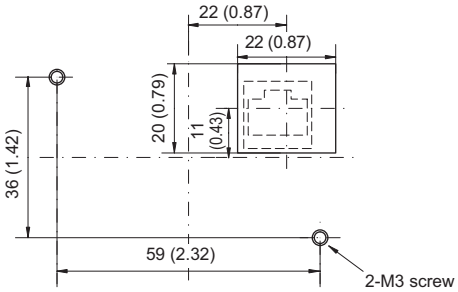

(Unit: mm (inches))