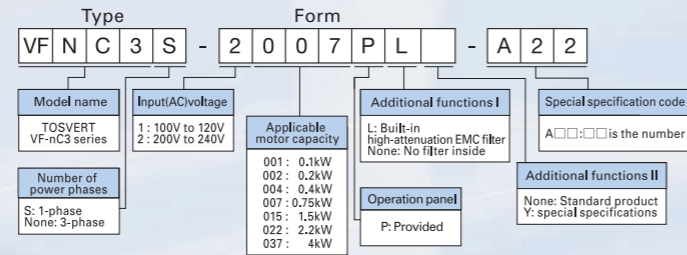


Specifications and dimensions

Explanation of the name plate label



3-phase 240V class

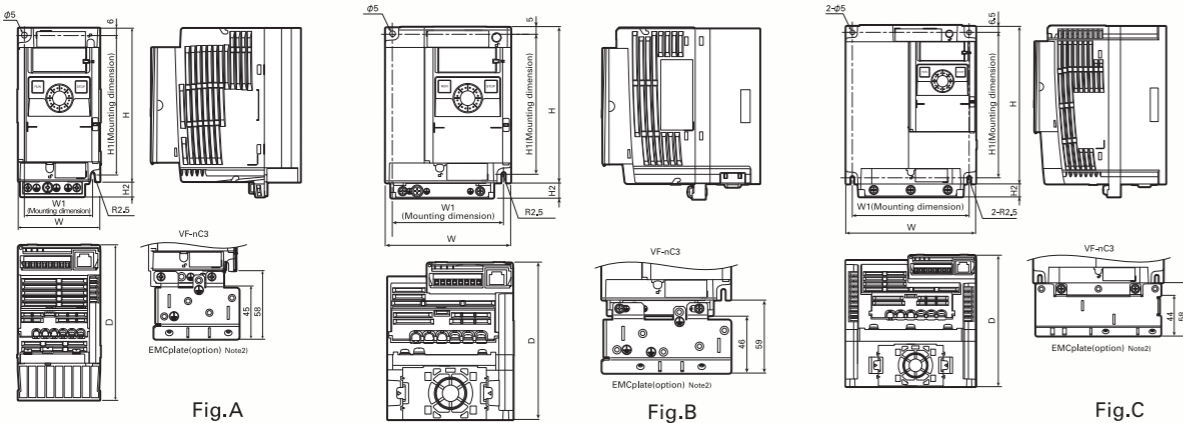
Item	Specification							
Input voltage class	3-phase 240V class							
Applicable motor (kW)	0.1	0.2	0.4	0.75	1.5	2.2	4.0	
Rating	Type	VFNC3						
	Form	2001P	2002P	2004P	2007P	2015P	2022P	2037P
Power supply	Output Capacity (kVA) Note 1)	0.3	0.6	1.0	1.6	2.9	3.9	6.4
	Output current(A) Note 2)	0.7(0.7)	1.4(1.4)	2.4(2.4)	4.2(3.6)	7.5(7.5)	10.0(8.5)	16.7(14.0)
Power supply	Output voltage Note 3)	3-phase 200V to 240V						
	Overload current rating	150%-60 seconds, 200%-0.5 second						
	Voltage-frequency	3-phase 200V to 240V - 50/60Hz						
	Allowable fluctuation	Voltage 170 to 264V Note 4), frequency ±5%						
	Required Power supply capacity (kVA) Note 5)	0.5	0.8	1.4	2.5	4.3	5.7	9.2
Protective method (IEC60529)	Self-cooling			IP20				
Cooling method	Self-cooling			Forced air-cooled				
Color	RAL 3002 / 7016							
Built-in filter	—							

1-phase 240V class / 1-phase 120V class

Item	Specification										
Input voltage class	1-phase 240V class					1-phase 120V class					
Applicable motor (kW)	0.1	0.2	0.4	0.75	1.5	2.2	0.1	0.2	0.4	0.75	
Rating	Type	VFNC3S									
	Form	2001PL	2002PL	2004PL	2007PL	2015PL	2022PL	1001P	1002P	1004P	1007P
Power supply	Output Capacity (kVA) Note 1)	0.3	0.6	1.0	1.6	2.9	3.9	0.3	0.6	1.0	1.6
	Output current(A) Note 2)	0.7(0.7)	1.4(1.4)	2.4(2.4)	4.2(3.2)	7.5(7.5)	10.0(9.1)	0.7(0.7)	1.4(1.4)	2.4(2.4)	4.2(4.0)
Power supply	Output voltage Note 3)	3-phase 200V to 240V					3-phase 200V to 240V				
	Overload current rating	150%-60 seconds, 200% -0.5 second					150%-60 seconds, 200% -0.5 second				
	Voltage-frequency	1-phase 200V to 240V - 50/60Hz					1-phase 100V to 120V - 50/60Hz				
	Allowable fluctuation	Voltage 170 to 264V Note 4), frequency ±5%					Voltage 85 to 132V Note 4), frequency ±5%				
	Required Power supply capacity (kVA) Note 5)	0.5	0.8	1.3	2.3	4.0	5.4	0.4	0.7	1.3	2.1
Protective method (IEC60529)	IP20					IP20					
Cooling method	Self-cooling					Forced air-cooled					
Color	RAL 3002 / 7016					RAL 3002 / 7016					
Built-in filter	EMC filter					—					

- Note 1.** Capacity is calculated at 220V for output voltage.
Note 2. Indicates rated output current setting when the PWM carrier frequency (parameter F302) is 4kHz or less. Between 5 kHz and 12 kHz, the rated output current is indicated in the (). Above 13 kHz, the output current must be reduced. The default setting of the PWM carrier frequency is 12kHz.
Note 3. Maximum output voltage is the same as the input voltage. In case of 1-phase 120V class, maximum output voltage is same as twice the input voltage. With regard to 120V models, the output voltage may decrease about 10 to 20 % if motor load is applied. When operating VF-nC3 in conjunction with general-purpose motor (200V), it is necessary to reduce the motor load.
Note 4. 180V-264V (240V class), 90V-132V (120V class) when the inverter is used continuously (load of 100%).
Note 5. Required power supply capacity varies with the value of the power supply side inverter impedance (including those of the input reactor and cables).

External dimensions



Voltage class	Applicable motor (kW)	Inverter type	Dimensions (mm)						Drawing	Approx. weight(kg)
			W	H	D	W1	H1	H2		
3-phase 240V	0.1	VFNC3-2001P	72	130	102	60	131	13	A	1.0
	0.2	VFNC3-2002P			121					
	0.4	VFNC3-2004P			121					
	0.75	VFNC3-2007P	105	130	131	93	118	B		
	1.5	VFNC3-2015P			156					
	2.2	VFNC3-2022P			156					
1-phase 240V	0.1	VFNC3S-2001PL	72	130	102	60	131	13	A	1.0
	0.2	VFNC3S-2002PL			121					
	0.4	VFNC3S-2004PL			121					
	0.75	VFNC3S-2007PL	105	130	131	93	118	B		
	1.5	VFNC3S-2015PL			156					
	2.2	VFNC3S-2022PL			156					
1-phase 120V	0.1	VFNC3S-1001P	72	130	102	60	131	13	A	1.0
	0.2	VFNC3S-1002P			121					
	0.4	VFNC3S-1004P			121					
	0.75	VFNC3S-1007P	105	130	156	93	118	12	B	1.5

- Note 1.** H2 : Height of EMC plate mounting area
Note 2. Here are the available EMC plate
 Fig.A : EMP007Z (Approx. weight : 0.3kg)
 Fig.B : EMP008Z (Approx. weight : 0.4kg)
 Fig.C : EMP009Z (Approx. weight : 0.5kg)
Note 3. The models shown in Fig. A to Fig. B are fixed at two points: in the upper left and lower right corners.
Note 4. The model shown in Fig. A is not equipped with a cooling fan. The models of 1-phase 240V and 1-phase 120V shown in Fig.B are equipped with a cooling fan on the top of the unit.
Note 5. Height measurements do not include the protrusions for installation.

Common specification

Item	Specification
Control system	Sinusoidal PWM control
Output voltage range	Adjustable within the range of 50 to 330V by correcting the supply voltage (However, cannot output voltage exceeding the input voltage.)
Output frequency range	0.1 to 400.0Hz, default setting: 0.5 to 80Hz, maximum frequency: 30 to 400Hz
Minimum setting steps of frequency	0.1Hz: analog input (when the max. frequency is 100Hz), 0.01Hz: Operation panel setting and communication setting.
Frequency accuracy	Digital setting: within ±0.1% of the max. frequency (-10 to +60°C) Analog setting: within ±1.0% of the max. frequency (25°C ±10°C)
Voltage/frequency characteristics	V/f constant, variable torque, automatic torque boost, vector control, automatic energy-saving, Auto-tuning, Base frequency (20 - 400Hz) adjusting to 1 & 2, torque boost (0 - 30%) adjusting to 1 & 2, adjusting frequency at start (0.1 - 10Hz)
Frequency setting signal	Setting dial on the front panel, external frequency potentiometer (connectable to a potentiometer with a rated impedance of 1k - 10kΩ), 0 - 10Vdc / 0 - 5Vdc (input impedance: VI=40kΩ, 4 - 20mAdc (input impedance: 250Ω), Note 1)
Terminal board base frequency	The characteristic can be set arbitrarily by two-point setting. Possible to set: analog input (VI).
Frequency jump	Setting of the jump frequency and the range.
Upper and lower-limit frequencies	Upper-limit frequency: 0 to max. frequency, lower-limit frequency: 0 to upper-limit frequency
PWM carrier frequency	Adjustable within a range of 2k to 16kHz (default: 12kHz).
PID control	Setting of proportional gain, integral gain, differential gain and control waiting time.
Acceleration/deceleration time	Selectable from among acceleration/deceleration times 1 and 2 (0.0 to 3000 sec.), Automatic acceleration/deceleration function, S-pattern acceleration/deceleration 1 and 2. Control of forced rapid deceleration
DC braking	Braking start-up frequency: 0 to maximum frequency, braking rate: 0 to 100%, braking time: 0 to 25.5 seconds, emergency DC braking.
Dynamic Braking Drive Circuit	None (braking module is optional)
Input terminal function (programmable)	Possible to select from among about 60 functions, such as forward/reverse run signal input, jog run signal input, preset-speed signal input and reset signal input, to assign to 5 input terminals. Logic selectable between sink and source.
Output terminal functions (programmable)	Possible to select from among about 40 functions, such as upper/lower limit frequency signal output, low speed detection signal output, specified speed reach signal output and failure signal output, to assign to FL relay output, open collector output terminals.
Forward/reverse run	The RUN and STOP keys on the operation panel are used to start and stop operation, respectively. Forward/reverse run possible through communication and logic inputs from the terminal block.
Jog run	Jog mode, if selected, allows jog operation from the terminal board.
Preset speed operation	Frequency reference +15-speed operation possible by changing the combination of 4 contacts on the terminal board.
Retry operation	Capable of restarting automatically after a check of the main circuit elements in case the protective function is activated. 10 times (Max.) (selectable with a parameter)
Various prohibition settings / Password setting	Possible to write-protect parameters and to prohibit the change of panel frequency settings and the use of operation panel for operation, emergency stop or resetting. Possible to write-protect parameters by setting 4 digits password.
Regenerative power ride-through control	Possible to keep the motor running using its regenerative energy in case of a momentary power failure (default: OFF).
Auto-restart operation	In the event of a momentary power failure, the inverter reads the rotational speed of the coasting motor and outputs a frequency appropriate to the rotational speed in order to restart the motor smoothly. This function can also be used when switching to commercial power.
Failure detection signal	1c-contact output: (250 V ac - 2 A (cosφ=1): At resistive load, 30 V dc - 1 A, 250 V ac - 1 A (cosφ=0.4))
Protective function	Stall prevention, current limitation, over-current, output short circuit, over-voltage, over-voltage limitation, undervoltage, ground fault, detection, input phase failure, output phase failure, overload protection by electronic thermal function, armature over-current at start-up, load side over-current at start-up, over-torque, undercurrent, overheating, cumulative operation time, life alarm, emergency stop, various pre-alarms
Electronic thermal characteristic	Switching between standard motor and constant-torque VF motor, switching between motors 1 and 2, setting of overload trip time, adjustment of stall prevention levels 1 and 2, selection of overload stall
Reset function	Function of resetting by closing contact 1a or by turning off power or the operation panel. This function is also used to save and clear trip records.
Alarms	Stall prevention, overvoltage, overload, under-voltage, setting error, retry in process, upper/lower limits
Causes of failures	Over-current, overvoltage, overheat, output short-circuit, ground fault, inverter overload, over-current through arm at start-up, over-current through load at start-up, CPU fault, EEPROM fault, RAM fault, ROM fault, communication error. (Selectable: emergency stop, under-voltage, small current, over-torque, motor overload, input phase failure, output phase failure)
Monitoring function	Operation frequency, operation frequency command, forward/reverse run, output current, input voltage (DC detection), output voltage, torque, torque current, load factor of inverter, input power, output power, information on input terminals, information on output terminals, version of CPU1, version of CPU2, PID feedback value, frequency command (after compensation), logic input terminals setting, causes of past trips 1 to 4, parts replacement alarm, cumulative operation time
Past trip monitoring function	Stores data on the past four trips: number of trips that occurred in succession, operation frequency, direction of rotation, load current, input voltage (DC detection), output voltage, information on input terminals, information on output terminals, and cumulative operation time when each trip occurred.
Output for frequency meter	Analog output for meter: 1 mA dc full-scale dc ammeter 0 - 20 mA (4 to 20 mA) output: DC ammeter (allowable load resistance: Less than 750 Ω) 0 - 10 V output: DC voltmeter (allowable load resistance: Over 1kΩ)
4-digit 7-segments LED	Frequency: inverter output frequency. Alarm: stall alarm "C", overvoltage alarm "P", overload alarm "L", overheat alarm "H". Status: inverter status (frequency, cause of activation of protective function, input/output voltage, output current, etc.) and parameter settings. Free-unit display: arbitrary unit (e.g. rotating speed) corresponding to output frequency.
Indicator	Lamps indicating the inverter status by lighting, such as RUN lamp, MON lamp, PRG lamp, % lamp, Hz lamp. The charge lamp indicates that the main circuit capacitors are electrically charged.
Location of use	Indoors; not exposed to direct sunlight, corrosive gas, explosive gas, flammable gas, oil mist, or dust; and vibration of less than 5.9 m/s ² (10 to 55 Hz).
Elevation	3000 m or less (current reduction required over 1000 m) Note 2)
Ambient temperature	-10 to +60°C Note 3)
Storage temperature	-25 to +70°C
Relative humidity	5 to 95% (free from condensation and vapor).

- Note 1.** Be careful, if 4-20mA is selected, when the inverter's power is ON, the internal impedance is 250Ω, but when the power is OFF, the internal impedance increases very much to approximately 40kΩ.
Note 2. Current must be reduced by 1% for each 100 m over 1000 m. For example, 90% at 2000 m and 80% at 3000 m.
Note 3. Above 40°C : Remove the protective seal from the top of VF-nC3.
 Above 50°C : Remove the seal from the top of the inverter and use the inverter with the output current reduced. Side by side installation (with no space between inverters): Remove the seal from the top of each inverter. When installing the inverter where the ambient temperature will rise above 40°C, remove the seal from the top of the inverter and use the inverter with the output current reduced.