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## New AC Drives Family Delivers Excellent Performance and Value



## AC Drives Reduce Motor Wear and Improve Energy Efficiency to Reduce Your Operating Costs

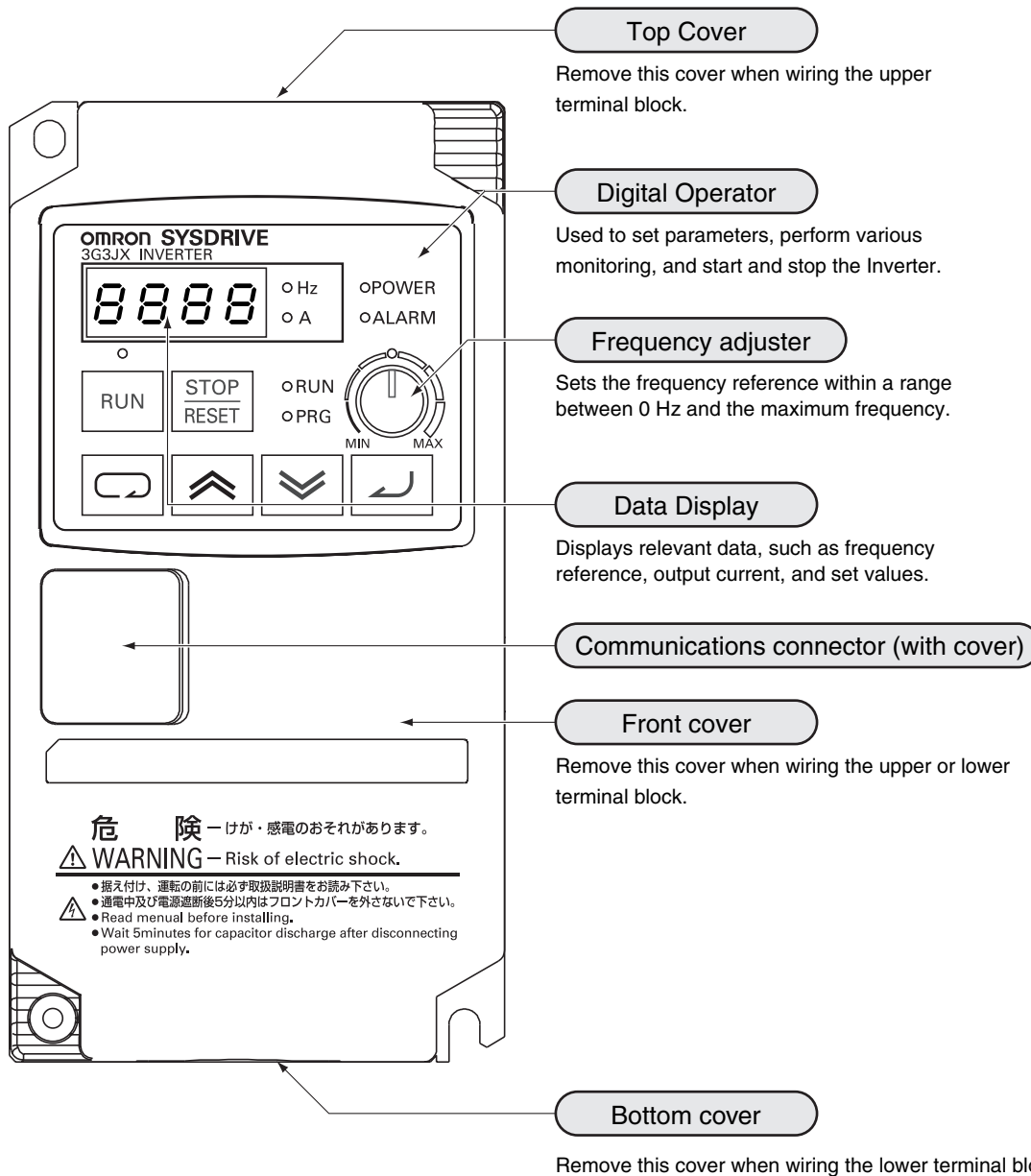
- » Three models address simple to complex needs
- » Space- and energy-saving features
- » Easy-to-apply advanced functions
- » High torque at low frequencies

Simple, Compact Inverters

# SYSDRIVE JX Series

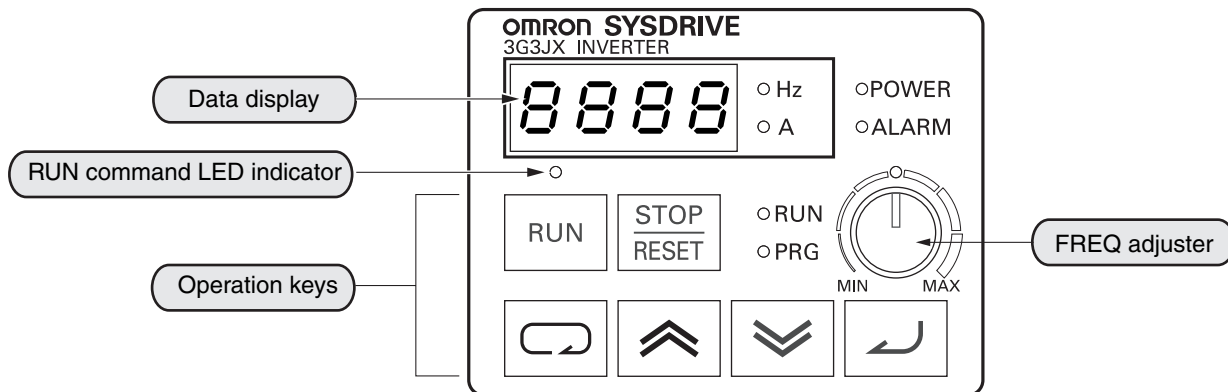
## Nomenclature and Functions

### ■ Inverter Nomenclature and Functions



- Note 1.** Connect the communications cable after opening the cover of the communications connector. Remove the front cover to switch communications.  
**2.** The cover of the communications connector is removable. Remove the front cover to attach it.

■ Part Names and Descriptions of the Digital Operator



	Name	Description
○POWER	POWER LED indicator	Lit when the power is supplied to the control circuit.
○ALARM	ALARM LED indicator	Lit when an Inverter error occurs.
○RUN	RUN (during RUN) LED indicator	Lit when the Inverter is running.
○PRG	PROGRAM LED indicator	Lit when the set value of each function is indicated on the data display. Blinks during warning (when the set value is incorrect).
	Data display	Displays relevant data, such as frequency reference, output current, and set values.
○ Hz ○ A	Data display LED indicator	Lit according to the indication on the data display. Hz: Frequency A: Current
	Volume LED indicator	Lit when the frequency reference source is set to the FREQ adjuster.
	FREQ adjuster	Sets a frequency. Available only when the frequency reference source is set to the FREQ adjuster. (Check that the Volume LED indicator is lit.)
○	RUN command LED indicator	Lit when the RUN command is set to the Digital Operator. (The RUN key on the Digital Operator is available for operation.)
	RUN key	Activates the Inverter. Available only when operation via the Digital Operator is selected. (Check that the RUN command LED indicator is lit.)
	STOP/RESET key	Decelerates and stops the Inverter. Functions as a reset key if an Inverter error occurs.
	Mode key	Switches between the monitor mode (d□□□), the basic function mode (F□□□), and the extended function mode (A□□□, b□□□, c□□□, H□□□).
	Enter key	Enters the set value. (To change the set value, be sure to press the Enter key.)
	Increment key	Changes the mode. Also, increases the set value of each function.
	Decrement key	Changes the mode. Also, decreases the set value of each function.

# Using Digital Operator

## 1. Setting the maximum output frequency

Power ON

(1) 0.0 or the value previously monitored is displayed.

(5) A004 appears.

Press key.

Press key.

(2) Function code appears.

(6) Preset value is displayed.

Press until A --- appears.

Press to set desired value.

(3) A --- appears.

(7) Newly set value is displayed.

Press key.

Press key to store the value.

(4) A001 or the code number set in the end of last setting is displayed.

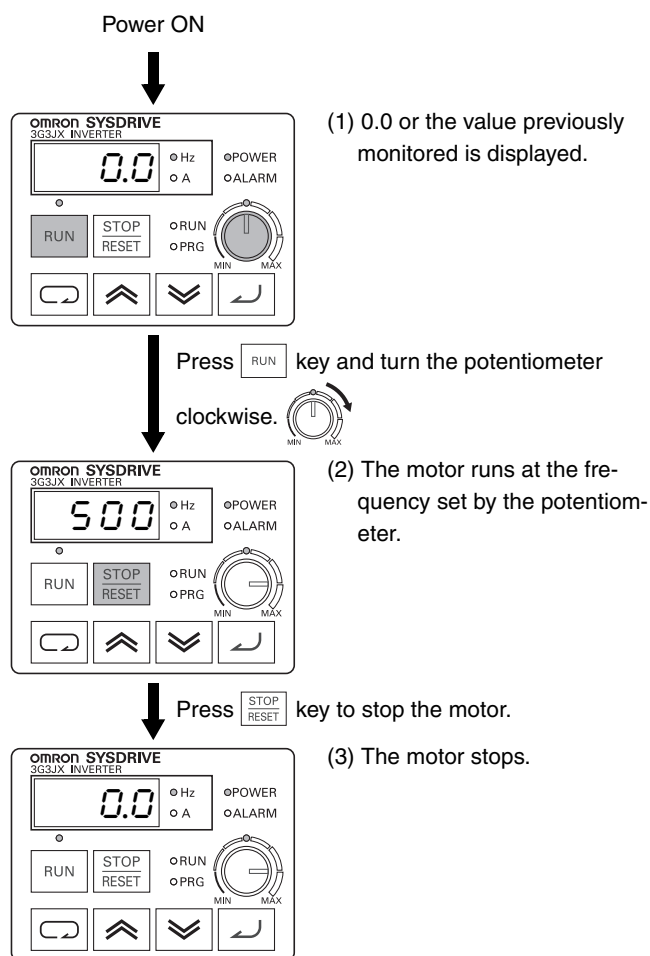
(8) Returns to A004 and the setting is complete.

Press until A --- appears.

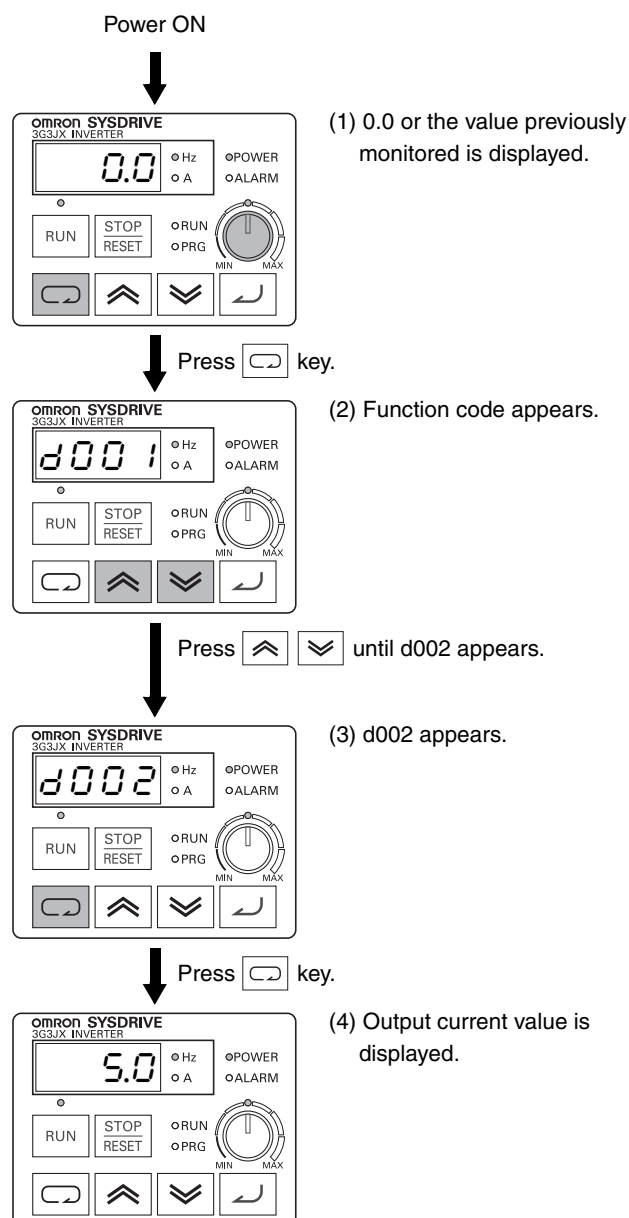
- To run the motor, go back to monitor mode or basic setting mode.
- Pressing key for a while and back to d001.

(It continues in upper right.)

## 2. Running the motor (by potentiometer)



## 3. Monitoring output current value



## Standard Specification List

### ●200-V Class

Item Model name (3G3JX-)		3-phase 200-V class					
		A2002	A2004	A2007	A2015	A2022	A2037
Applicable motor capacity <sup>*1</sup>	kW	0.2	0.4	0.75	1.5	2.2	3.7
	HP	1/4	1/2	1	2	3	5
Rated output capacity (kVA)	200 V	0.4	0.9	1.3	2.4	3.4	5.5
	240 V	0.5	1.0	1.6	2.9	4.1	6.6
Rated input voltage		3-phase (3-wire) 200 V -15% to 240 V +10%, 50/60 Hz ±5%					
Built-in filter		Zero-phase reactor					
Rated input current (A)		1.8	3.4	5.2	9.3	13.0	20.0
Rated output voltage <sup>*2</sup>		3-phase: 200 to 240 V (Cannot exceed that of incoming voltage.)					
Rated output current (A)		1.4	2.6	4.0	7.1	10.0	15.9
Weight (kg)		0.8	0.9	1.1	2.2	2.4	2.4
Cooling method		Self-cooling			Forced-air-cooling		
Braking torque	At short-time deceleration <sup>*3</sup> At capacitor feedback	Approx. 50%			Approx. 20% to 40%		
	DC injection braking	Injection braking frequency/time, braking force variable, frequency control available					

### ●400-V Class

Item Model name (3G3JX-)		3-phase 400-V class				
		A4004	A4007	A4015	A4022	A4037
Applicable motor capacity <sup>*1</sup>	kW	0.4	0.75	1.5	2.2	3.7
	HP	1/2	1	2	3	5
Rated output capacity (kVA)	380 V	0.9	1.6	2.5	3.6	5.6
	480 V	1.2	2.0	3.1	4.5	7.1
Rated input voltage		3-phase (3-wire) 380 V -15% to 480 V +10%, 50/60 Hz ±5%				
Built-in filter		Zero-phase reactor				
Rated input current (A)		2.0	3.3	5.0	7.0	11.0
Rated output voltage <sup>*2</sup>		3-phase: 380 to 480 V (Cannot exceed that of incoming voltage.)				
Rated output current (A)		1.5	2.5	3.8	5.5	8.6
Weight (kg)		1.5	2.3	2.4	2.4	2.4
Cooling method		Self-cooling		Forced-air-cooling		
Braking torque	At short-time deceleration <sup>*3</sup> At capacitor feedback	Approx. 50%		Approx. 20% to 40%		
	DC injection braking	Injection braking frequency/time, braking force variable, frequency control available				

### ●1/3-phase 200-V Class

Item Model name (3G3JX-)		1/3-phase 200-V Class				
		AE002	AE004	AE007	AE015	AE022
Applicable motor capacity <sup>*1</sup>	kW	0.2	0.4	0.75	1.5	2.2
	HP	1/4	1/2	1	2	3
Rated output capacity (kVA)	200 V	0.4	0.9	1.3	2.4	3.4
	240 V	0.5	1.0	1.6	2.9	4.1
Rated input voltage		1/3-phase 200 V -15% to 240 V +10%, 50/60 Hz ±5%				
Built-in filter		None				
Rated input current (A)		1.8	3.4	5.2	9.3	13.0
Rated output voltage <sup>*2</sup>		3-phase: 200 to 240 V (Cannot exceed that of incoming voltage.)				
Rated output current (A)		1.4	2.6	4.0	7.1	10.0
Weight (kg)		0.8	0.9	1.5	2.3	2.4
Cooling method		Self-cooling			Forced-air-cooling	
Braking torque	At short-time deceleration <sup>*3</sup> At capacitor feedback	Approx. 50%			Approx. 20% to 40%	
	DC injection braking	Injection braking frequency/time, braking force variable, frequency control available				

■ Common Specifications

Item		Specifications
Enclosure rating *4		Semi-closed (IP20)
Control	Control method	Phase-to-phase sinusoidal modulation PWM
	Output frequency range *5	0.5 to 400 Hz
	Frequency precision *6	Digital command: ±0.01% of the max. frequency Analog command: ±0.4% of the max. frequency (25°C ±10°C)
	Frequency setting resolution	Digital setting: 0.1 Hz Analog setting: Max. frequency/1000
	Voltage/Frequency characteristics	V/f characteristics (constant/reduced torque)
	Overload current rating	150% for 1 min
	Acceleration/Deceleration time	0.01 to 3000 s (line/curve selection), 2nd acceleration/deceleration setting available
	Carrier frequency modification range	2 to 12 kHz
	DC injection braking	Starts at a frequency lower than that in deceleration via the STOP command, at a value set lower than that during operation, or via an external input. (Level and time settable.)
Protective functions		Overcurrent, overvoltage, undervoltage, electronic thermal, temperature error, ground-fault overcurrent at power-on state, overload limit, incoming overvoltage, external trip, memory error, CPU error, USP trip, communication error, overvoltage protection during deceleration, momentary power interruption protection, emergency shutoff
Input signal	Multi-function input	FW (forward), RV (reverse), CF1 to CF4 (multi-step speed), JG (jogging), DB (external DC injection braking), SET (2nd function), 2CH (2-step acceleration/deceleration), FRS (free run), EXT (external trip), USP (USP function), SFT (soft lock), AT (analog current input function selection), RS (reset), PTC (thermistor input), STA (3-wire startup), STP (3-wire stop), F/R (3-wire forward/reverse), PID (PID selection), PIDC (PID integral reset), UP (UP of UP/DWN function), DWN (DWN of UP/DWN function), UDC (data clear of UP/DWN function), OPE (forced OPE mode), ADD (frequency addition), F-TM (forced terminal block), RDY (operation ready), SP-SET (special setting), EMR (emergency shutoff)
Output signal	Multi-function output	RUN (signal during operation), FA1 (frequency arrival signal 1), FA2 (frequency arrival signal 2), OL (overload warning signal), OD (PID excess deviation signal), AL (alarm signal), DC (analog input disconnection detection signal), FBV (PID FB status output), NDc (network error), LOG (logical operation result), ODc (communication option disconnected), LOC (light load signal)
	Frequency monitor	Analog output (0 to 10 V DC, 1 mA max.) Frequency/Current signals are selectable via the AM output terminal.
	Relay output	The relay (SPDT contact) outputs signals corresponding to the multi-function output.
Other functions		AVR function, V/f characteristic selection, upper/lower limit, 16-step speeds, starting frequency adjustment, jogging operation, carrier frequency adjustment, PID control, frequency jump, analog gain/bias adjustment, S-shape acceleration/deceleration, electronic thermal characteristics/level adjustment, retry function, simplified torque boost, trip monitor, soft lock function, frequency conversion display, USP function, 2nd control function, motor rotation speed UP/DOWN, overcurrent suppression function
General specifications	Ambient temperature	-10°C to 50°C (Both the carrier frequency and output current need to be reduced at over 40°C.)
	Ambient storage temperature	-20°C to 65°C (short-time temperature during transport)
	Humidity	20% to 90% RH
	Vibration	5.9 m/s <sup>2</sup> (0.6G), 10 to 55 Hz (Complies with the test method specified in JIS C0040 (1999).)
	Location	At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
	Applicable standard	Complies with UL, cUL, CE standards. (Insulation distance)
Options		Noise filter, AC/DC reactors, regenerative braking unit and resistor, etc.

- \*1. The applicable motor is a 3-phase standard motor. For using any other type, be sure that the rated current does not exceed that of the Inverter.
- \*2. Output voltage decreases according to the level of the power supply voltage.
- \*3. The braking torque at the time of capacitor feedback is an average deceleration torque at the shortest deceleration (when it stops from 50 Hz), not a continuous regeneration torque. Also, the average deceleration torque varies depending on the motor loss. The value is reduced in operation over 50 Hz. Note that no regenerative braking circuit is built into the Inverter. If you need a larger regenerative torque, use the optionally available regenerative braking unit and resistor. The regenerative braking unit should be used only for short-time regeneration.
- \*4. Protection method complies with JEM 1030.
- \*5. To operate the motor at over 50/60 Hz, contact the motor manufacturer to find out the maximum allowable speed of revolution.
- \*6. For the stable control of the motor, the output frequency may exceed the maximum frequency set in A004 (A204) by 2 Hz max.

Selection

Features

SYSDRIVE  
JX Series

SYSDRIVE  
MX Series

SYSDRIVE  
RX Series

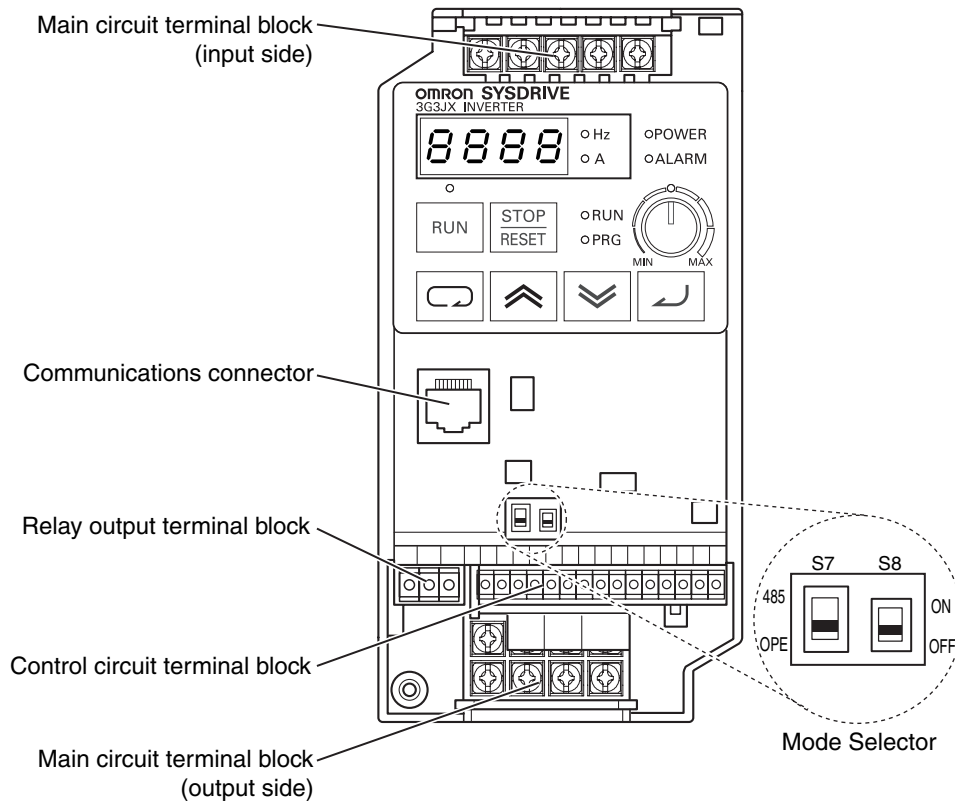
SYSDRIVE  
Option

Overview of  
Inverter Selection



■ Terminal Block Specifications

● Terminal Block Position



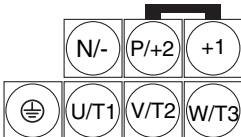
Note: This illustration shows the terminal block with the front cover removed.

● Specifications of Main Circuit Terminals

Upper side of the body

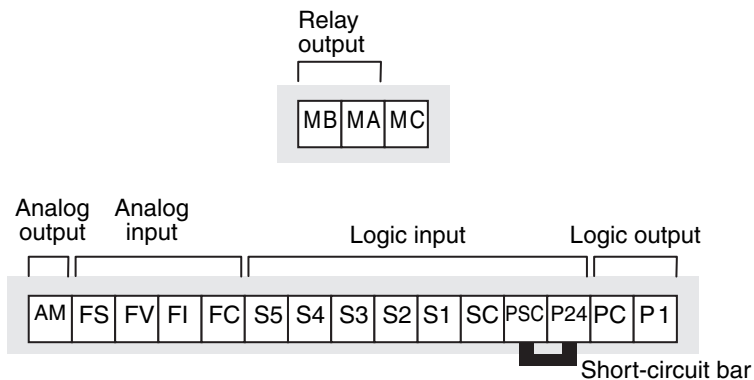


Lower side of the body



Terminal symbol	Terminal name	Function	Connection example
R/L1, S/L2, T/L3	Main power supply input terminal	Connect the input power supply.	<p>Do not remove the short-circuit bar between +1 and P/+2 when a DC reactor is not connected.</p>
U/T1, V/T2, W/T3	Inverter output terminal	Connect to the motor.	
+1, P/+2	External DC reactor terminal	Normally connected by the short-circuit bar. Remove the short-circuit bar between +1 and P/+2 when a DC reactor is connected.	
P/+2, N/-	Regenerative braking unit connection terminal	Connect optional regenerative braking units. (If a braking torque is required)	
⊕	Ground terminal	Ground (Connect to ground to prevent electric shock and reduce noise.)	

● Control Circuit Terminals Specifications



	Terminal symbol	Terminal name and function	Default setting	Note
Input signal	PSC	External power supply terminal for input signal (input) ...At sink logic Internal power supply output terminal for input signal (output) ...At source logic	---	24 V DC ±10% 30 mA max. 24 V DC ±10% 100 mA max.
	S1	Multi-function input terminals S1 to S5 Select 5 functions among the 31 functions and allocate them to from terminals S1 to S5. The terminal allocation is changed automatically when the emergency shutoff function is used.	Forward/Stop	Contact input Close: ON (Start) Open: OFF (Stop) Minimum ON time: 12 ms min.
	S2		Reverse/Stop	
	S3		Fault reset	
	S4		Emergency stop fault	
	S5		Multi-step speed reference 1	
	SC	Input signal common	---	
Monitor signal	AM	Analog frequency monitor/Analog output current monitor	Analog frequency monitor	
Frequency reference input	FS	Frequency reference power supply	---	10 V DC 10 mA max.
	FV	Voltage frequency reference signal	---	0 to 10 V DC Input impedance 10 kΩ When installing variable resistors at FS, FV, and FC (1 to 2 kΩ)
	FI	Current frequency reference signal	---	4 to 20 mA DC Input impedance 250 Ω
	FC	Frequency reference common	---	
Output signal	P1	Multi-function output terminal Select the status of the Inverter and allocate it to terminal P1.	Frequency arrival signal at a constant speed	27 V DC 50 mA max.
	PC	Output signal common	---	
Relay output signal	MA		Factory default relay settings Under normal operation: MA-MC Closed Under abnormal operation or power shutdown: MA-MC Open	
	MB			
	MC			

● Mode Selector

RS-485 Communication/Operator Selector (S7)

Select the mode according to the option connected to the communications connector.

When using the 3G3AX-OP01 supplied with the Inverter, it is available regardless of the switch condition.

Symbol	Name	Status	Description
S7	RS-485 communication/ operator selector	485	RS485 Modbus communication
		OPE [Default]	Digital Operator (Option: 3G3AX-OP1)

Emergency shutoff selector (S8)

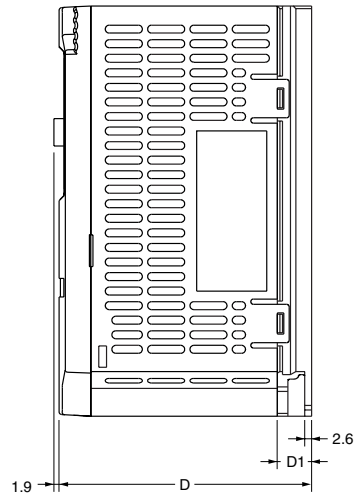
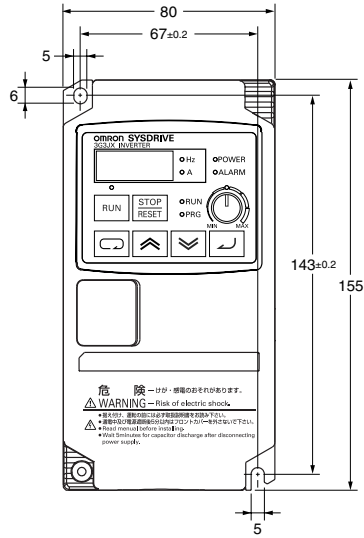
Use this selector to enable the emergency shutoff input function.

Symbol	Name	Status	Description
S8	Emergency shutoff selector	ON	Emergency shutoff input enabled *
		OFF [Default]	Normal

\* The multi-function input terminal 3 is switched to a terminal for emergency shutoff input, and the allocation of other multi-function input terminals is also changed automatically. Do not set to ON immoderately. For details, refer to "Emergency Shutoff Input Function".

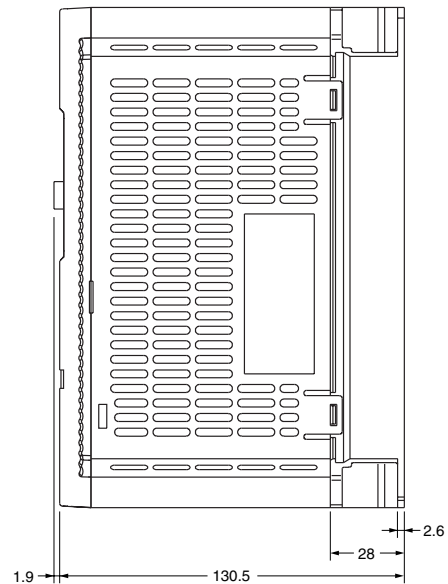
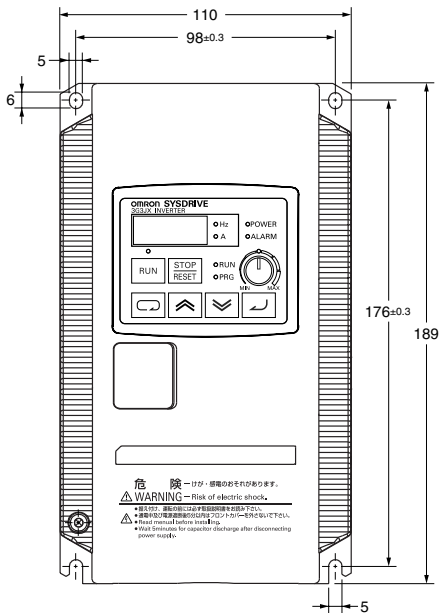
Dimensions

- 3G3JX-A2002
- 3G3JX-A2004
- 3G3JX-A2007
- 3G3JX-AE002
- 3G3JX-AE004

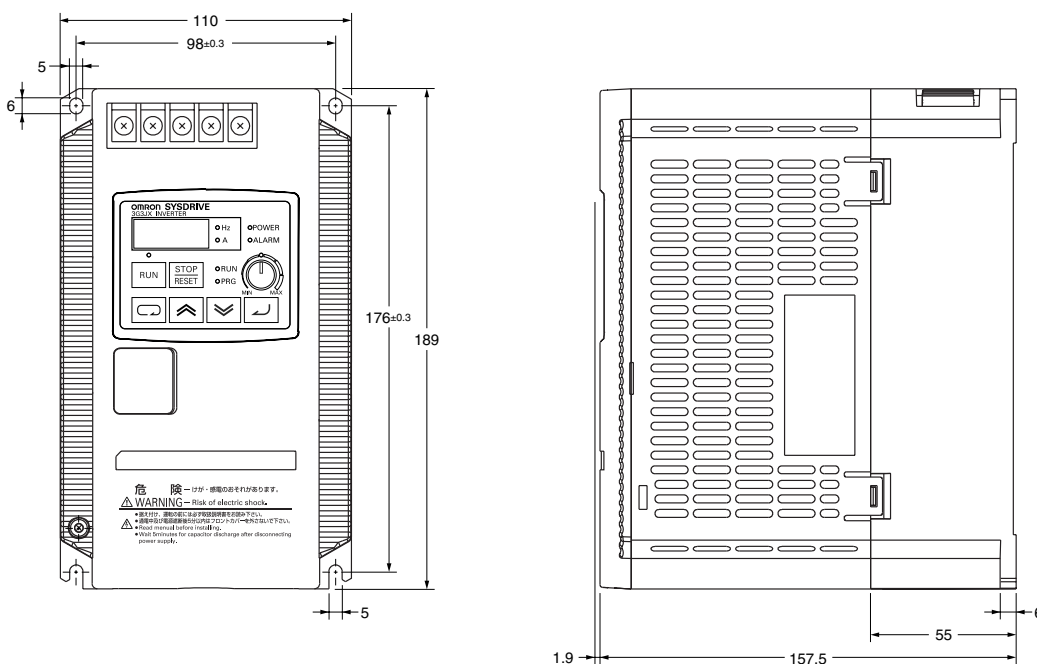


Rated voltage	Model 3G3JX-	Dimensions (mm)	
		D	D1
3phase 200 V AC	A2002	95.5	13
	A2004	109.5	27
	A2007	132.5	50
1/3phase 200 V AC	AE002	95.5	13
	AE004	109.5	27

- 3G3JX-A4004
- 3G3JX-AE007



- 3G3JX-A2015
- 3G3JX-A2022
- 3G3JX-A2037
- 3G3JX-A4007
- 3G3JX-A4015
- 3G3JX-A4022
- 3G3JX-A4037
- 3G3JX-AE015
- 3G3JX-AE022



Selection

Features

SYSDRIVE  
JX Series

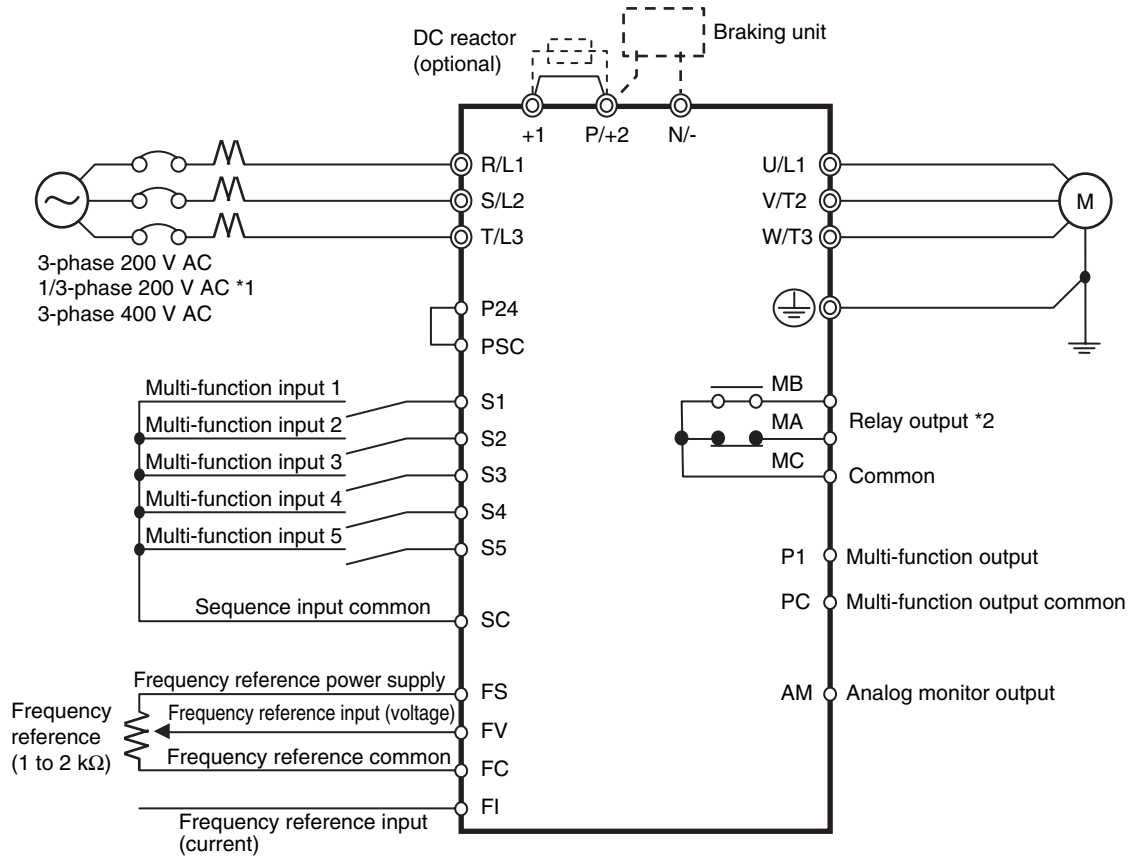
SYSDRIVE  
MX Series

SYSDRIVE  
RX Series

SYSDRIVE  
Option

Overview of  
Inverter Selection

Standard Connection Diagram



- \*1. Connect a single-phase 200-V AC input to terminals R/L1 and S/L2.
- \*2. By factory default, MA is set to NC contact, and MB to NO contact in the relay output (MA, MB) selection (C036).

## Protective and Diagnostic Functions

### ●Error Code List

Display on Digital Operator	Name	Description	
<u>E_01</u>	Overcurrent trip	Constant speed	If the motor is restrained, or rapidly accelerated or decelerated, a large current will flow through the Inverter, which will result in breakage. To avoid this, an overcurrent protection circuit works to shut off the Inverter output.
<u>E_02</u>		Deceleration	
<u>E_03</u>		Acceleration	
<u>E_04</u>		Others	
<u>E_05</u>	Overload trip	If an Inverter output current is detected and the motor is overloaded, an electronic thermal inside the Inverter operates to shut off the Inverter output. After a trip occurs, normal operation is restored in 10 seconds by resetting the Inverter.	
<u>E_07</u>	Overvoltage trip	If the incoming voltage and regenerative energy from the motor are too high, a protection circuit works to shut off the Inverter output when the voltage on the converter exceeds the specified level.	
<u>E_08</u>	EEPROM error	Shuts off the output if an error occurs in the EEPROM built into the Inverter due to external noise and abnormal temperature rise. Check the set data again if the <u>E_08</u> error occurs. If the power is shut off during data initialization, an EEPROM error <u>E_08</u> may occur when the power is next turned on. Shut off the power after completing data initialization.	
<u>E_09</u>	Undervoltage trip	Shuts off the output if the incoming voltage drops below the specified level, causing the control circuit not to work properly during a momentary power interruption.	
<u>E_11</u>	CPU error	Shuts off the output if the internal CPU has malfunctioned. If the multi-function output terminal (relay terminal) is set to 05 (alarm), the signal may not be output during the CPU error <u>E_11</u> . In this case, no data is stored in the trip monitor. The same thing could happen if AL (05) is allocated to the relay output terminal. Again, no data is stored.	
<u>E_12</u>	External trip	If an error occurs in the external equipment or devices, the Inverter receives the signal, and the output is shut off. (Available with the external trip function selected)	
<u>E_13</u>	USP trip	Appears if the Inverter is turned on with the RUN command being input. (Available with the USP function selected) If an undervoltage trip <u>E_09</u> occurs with the USP terminal set to ON, the trip, after released by resetting, becomes a USP trip <u>E_13</u> . Reset again to release the trip.	
<u>E_14</u>	Ground fault trip	Shuts off the output if a ground fault between the Inverter output unit and the motor is detected when turning on the power. The ground fault trip <u>E_14</u> cannot be released with the reset input. Shut off the power and check the wiring.	
<u>E_15</u>	Incoming overvoltage trip	Appears if the incoming voltage has remained high for 100 seconds while the Inverter output is stopped.	
<u>E_21</u>	Temperature error	Shuts off the output if the temperature has risen in the main circuit due to malfunction of the cooling fan or other reason.	
<u>E_30</u>	Driver error	Shuts off the output if overcurrent is detected in the main circuit.	
<u>E_35</u>	Thermistor error	While the thermistor input function is used, this detects the resistance of the external thermistor and shuts off the Inverter output.	
<u>E_37</u>	Emergency shutoff	With the emergency shutoff selected (DIP switch on the control board SW8 = ON), this error appears when an emergency shutoff signal is input from input terminal 3.	
<u>E_60</u>	Communications error	Occurs when the communication watchdog timer times out.	

## Model Number Explanation

3G3JX-A□□□□

JX-series  
Inverter

Maximum Motor Capacity

002	0.2 kW	022	2.2 kW
004	0.4 kW	037	3.7 kW
007	0.75 kW	055	5.5 kW
015	1.5 kW	075	7.5 kW

Voltage Class

2	3-phase 200 V AC
4	3-phase 400 V AC
E	1-/3-phase 200 V AC

## Standard Models

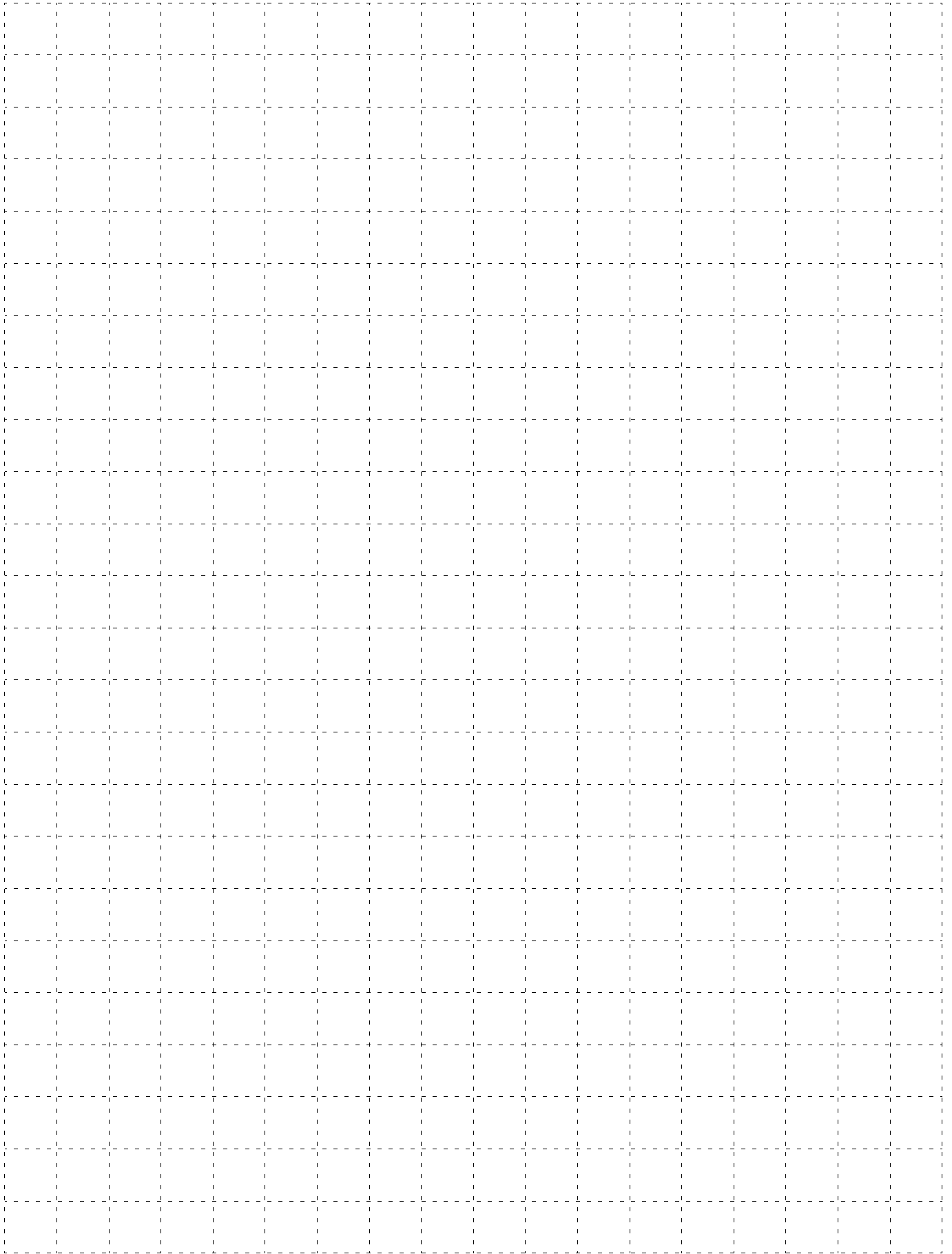
Rated voltage	Enclosure rating	Max. applicable motor capacity	Model
3-phase 200 V AC	IP20	0.2 kW	3G3JX-A2002
		0.4 kW	3G3JX-A2004
		0.75 kW	3G3JX-A2007
		1.5 kW	3G3JX-A2015
		2.2 kW	3G3JX-A2022
		3.7 kW	3G3JX-A2037
1/3-phase 200 V AC		0.2 kW	3G3JX-AE002
		0.4 kW	3G3JX-AE004
		0.75 kW	3G3JX-AE007
		1.5 kW	3G3JX-AE015
		2.2 kW	3G3JX-AE022
		3.7 kW	3G3JX-AE037
3-phase 400 V AC	0.4 kW	3G3JX-A4004	
	0.75 kW	3G3JX-A4007	
	1.5 kW	3G3JX-A4015	
	2.2 kW	3G3JX-A4022	
	3.7 kW	3G3JX-A4037	

### International Standards (EC Directives and UL/cUL Standards)

The 3G3JX Inverter meets the EC Directives and UL/cUL standard requirements for worldwide use.

Classification		Applicable standard
EC Directives	EMC Directive	EN61800-3: 2004
	Low-voltage Directive	EN61800-5-1: 2003
UL/cUL Standards		UL508C

MEMO



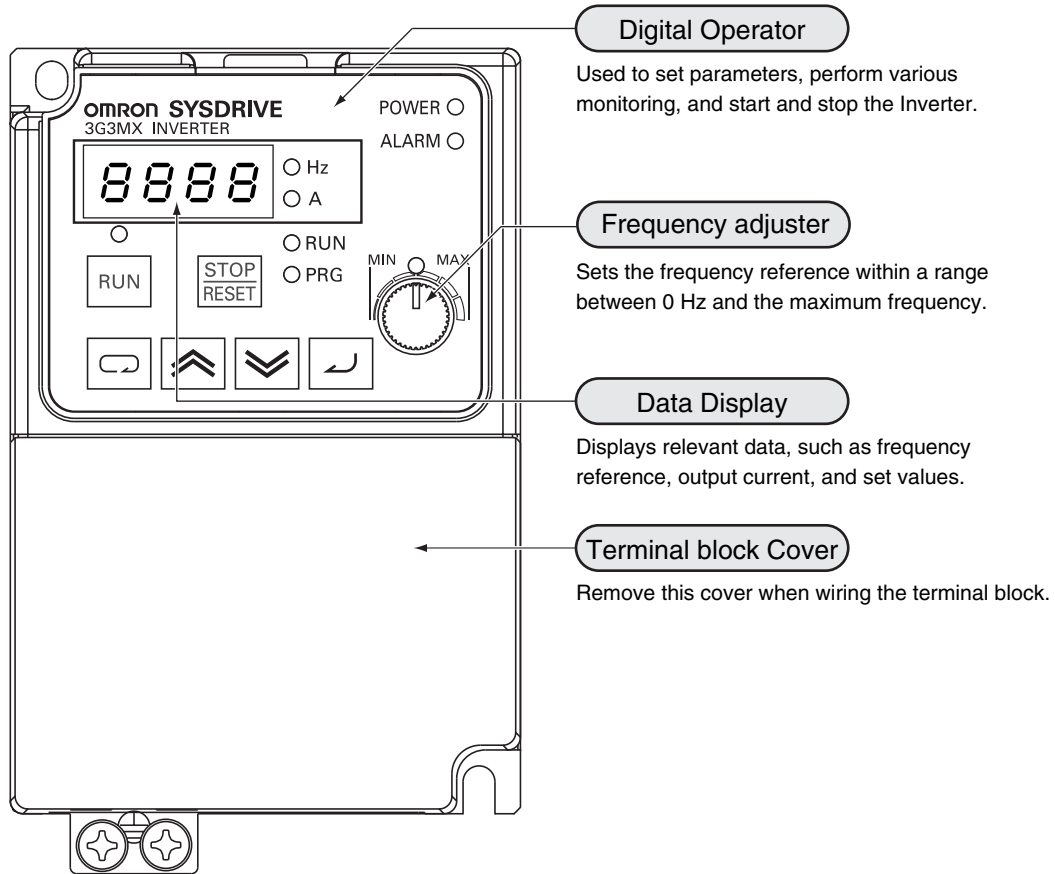


Multi-functional Compact Inverters

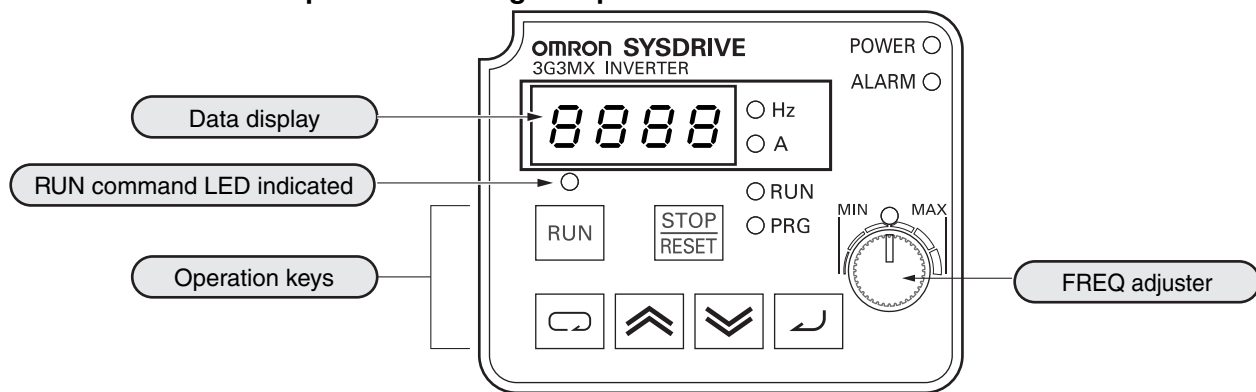
# SYSDRIVE MX Series

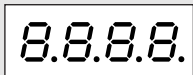
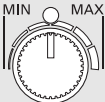






## Nomenclature and Functions

### ■ Inverter Nomenclature and Functions



■ Part Names and Descriptions of the Digital Operator

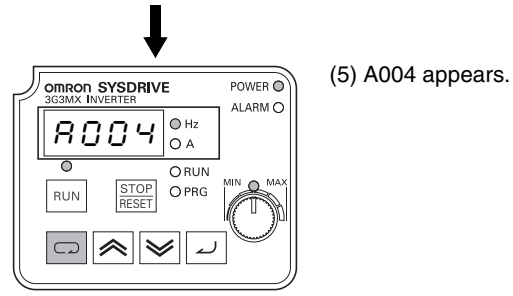
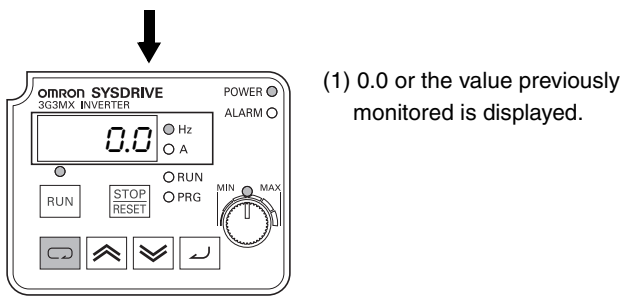


	Name	Description
POWER ○	POWER LED indicator	Lit when the power is supplied to the control circuit.
ALARM ○	ALARM LED indicator	Lit when an Inverter error occurs.
○ RUN	RUN (during RUN) LED indicator	Lit when the Inverter is running.
○ PRG	PROGRAM LED indicator	Lit when the set value of each function is indicated on the data display. Blinks during warning (when the set value is incorrect).
	Data display	Displays relevant data, such as frequency reference, output current, and set values.
○ Hz ○ A	Data display LED indicator	Lit according to the indication on the data display. Hz: Frequency A: Current
	Volume LED indicator	Lit when the frequency reference source is set to the FREQ adjuster.
	FREQ adjuster	Sets a frequency. Available only when the frequency reference source is set to the FREQ adjuster. (Check that the Volume LED indicator is lit.)
○	RUN command LED indicator	Lit when the RUN command is set to the Digital Operator. (The RUN key on the Digital Operator is available for operation.)
	RUN key	Activates the Inverter. Available only when operation via the Digital Operator is selected. (Check that the RUN command LED indicator is lit.)
	STOP/RESET key	Decelerates and stops the Inverter. Functions as a reset key if an Inverter error occurs.
	Mode key	Switches between the monitor mode (d□□□), the basic function mode (F□□□), and the extended function mode (A□□□, b□□□, c□□□, H□□□).
	Enter key	Enters the set value. (To change the set value, be sure to press the Enter key.)
	Increment key	Changes the mode. Also, increases the set value of each function.
	Decrement key	Changes the mode. Also, decreases the set value of each function.

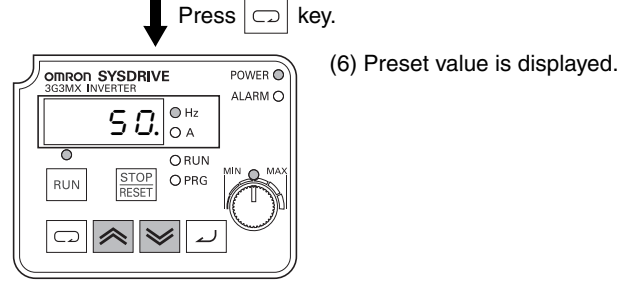
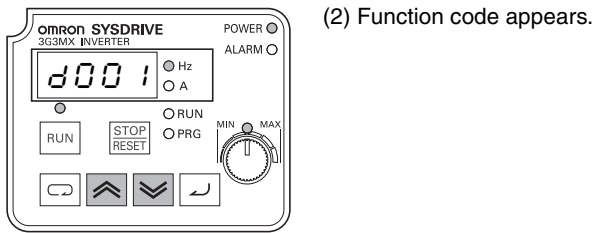
# Using Digital Operator

## 1. Setting the Maximum output frequency

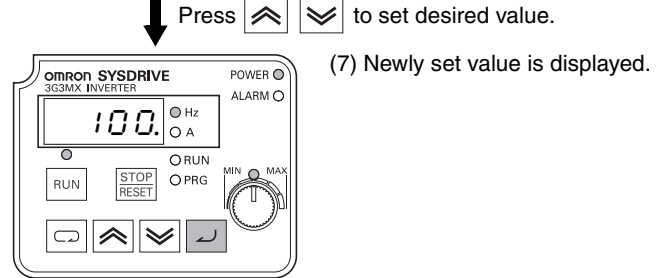
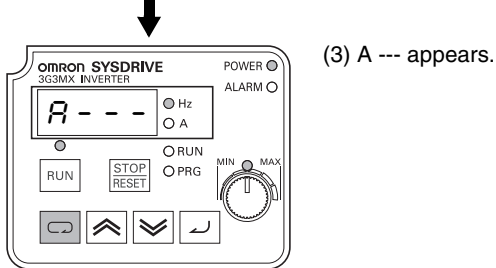
Power ON



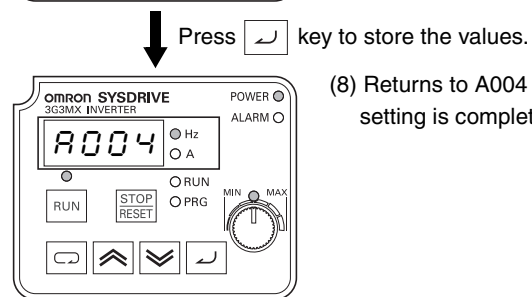
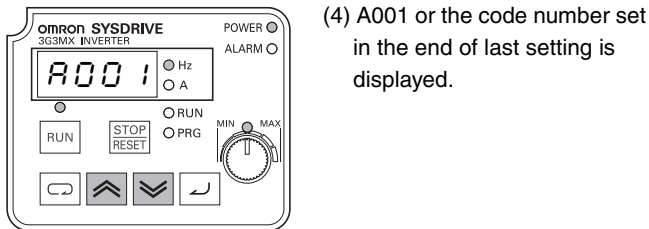
Press key.



Press until A --- appears.



Press key.

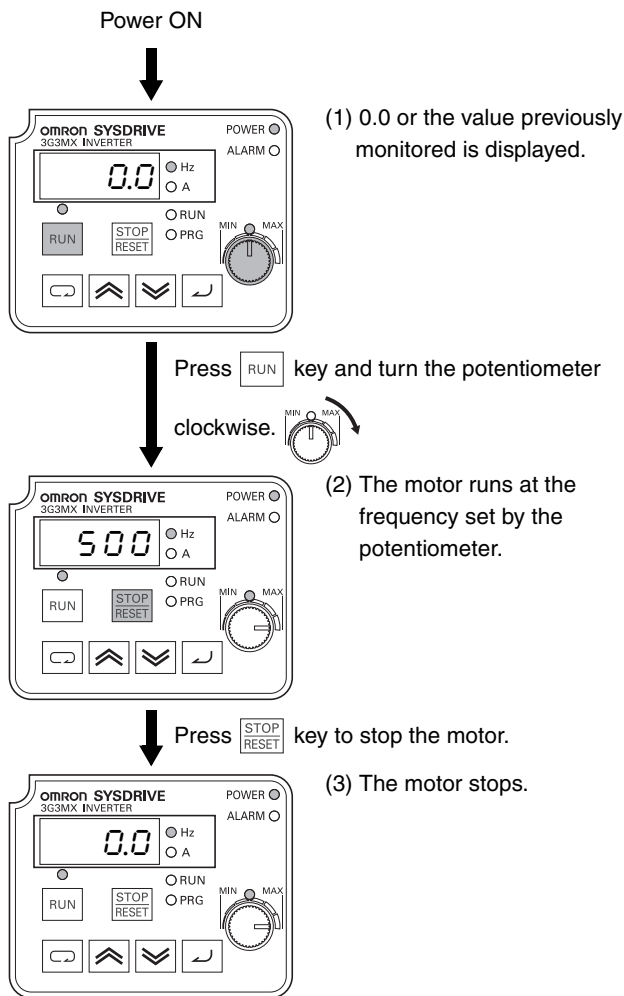


Press until A --- appears.

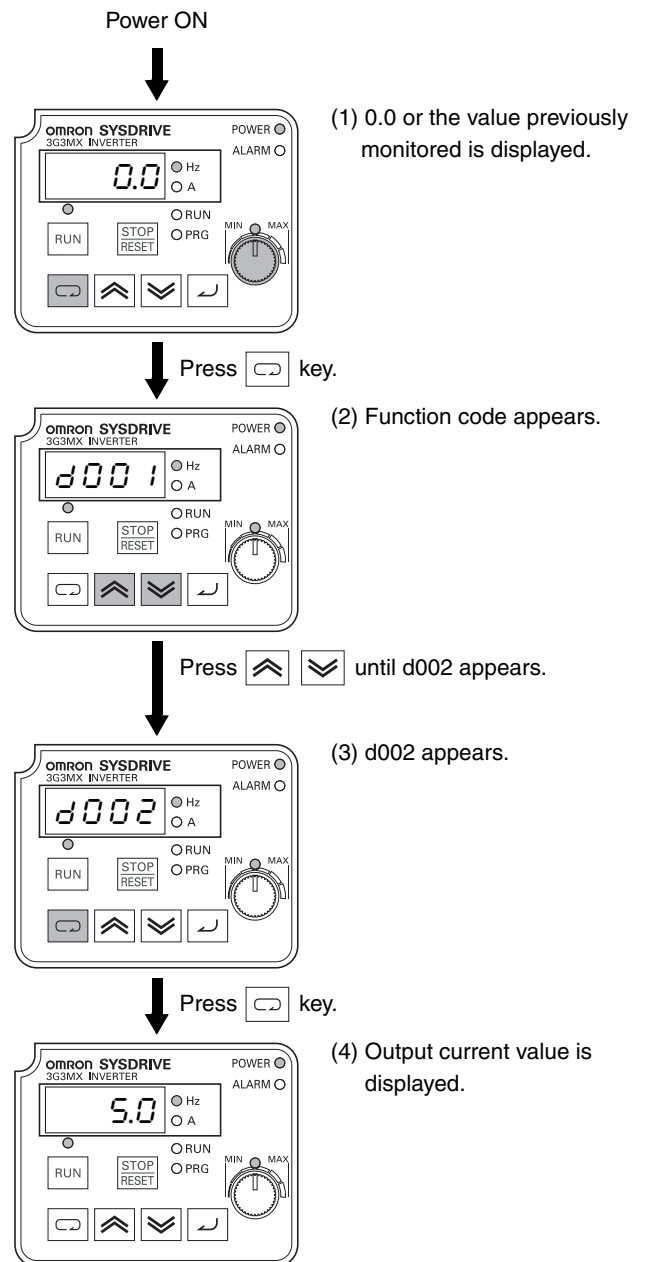
(It continues in upper right.)

- To run the motor, go back to monitor mode or basic setting mode.
- Pressing key for a while and back to d001.

2. Running the motor (by potentiometer)



3. Monitoring output current value



## Standard Specification List

### ●200-V Class

Item Model name (3G3MX-)		3-phase 200-V class							
		A2002	A2004	A2007	A2015	A2022	A2037	A2055	A2075
Applicable motor capacity <sup>1</sup>	kW	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5
	HP	1/4	1/2	1	2	3	5	7.5	10
Rated output capacity (kVA)	200 V	0.6	1.0	1.7	2.8	3.8	6.1	8.3	11.1
	220 V	0.6	1.1	1.9	3.0	4.2	6.6	9.1	12.2
Rated input voltage		3-phase (3-wire) 200 to 240 V ±10%, 50/60 Hz ±5%							
Rated output voltage <sup>2</sup>		3-phase 200 to 240 V AC (according to the incoming voltage)							
Rated output current (A)		1.6	3.0	5.0	8.0	11.0	17.5	24.0	32.0
Weight (kg)		0.7	0.85	0.9	1.8	1.8	1.8	3.5	3.5
Cooling method		Self-cooling			Forced-air-cooling				
Braking torque	At short-time deceleration <sup>3</sup> At capacitor feedback	Approx. 50%			Approx. 20% to 40%			Approx. 20%	
	For mounting discharge resistance	Approx. 150%		Approx. 100%		Approx. 80%			
	Minimum connection resistance (Ω)	100		50		35		17	

### ●400-V Class

Item Model name (3G3MX-)		3-phase 400-V class							
		A4004	A4007	A4015	A4022	A4037	A4055	A4075	
Applicable motor capacity <sup>1</sup>	kW	0.4	0.75	1.5	2.2	3.7	5.5	7.5	
	HP	1/2	1	2	3	5	7.5	10	
Rated output capacity (kVA)	400 V	1.0	1.7	2.6	3.8	6.0	9.0	11.1	
	440 V	1.1	1.9	2.8	4.1	6.5	9.9	12.1	
Rated input voltage		3-phase (3-wire) 380 to 480 V ±10%, 50/60 Hz ±5%							
Rated output voltage <sup>2</sup>		3-phase 380 to 480 V AC (according to the incoming voltage)							
Rated output current (A)		1.5	2.5	3.8	5.5	8.6	13.0	16.0	
Weight (kg)		1.3	1.7	1.8	1.8	1.8	3.5		
Cooling method		Self-cooling			Forced-air-cooling				
Braking torque	At short-time deceleration <sup>3</sup> At capacitor feedback	Approx. 50%			Approx. 20% to 40%			Approx. 20%	
	For mounting discharge resistance	Approx. 150%	Approx. 100%		Approx. 80%				
	Minimum connection resistance (Ω)	180			100		70		

### ●Single/Three-phase 200-V Class

Item Model name (3G3MX-)		1/3-phase 200-V class				
		AE002	AE004	AE007	AE015	AE022
Applicable motor capacity <sup>1</sup>	kW	0.2	0.4	0.75	1.5	2.2
	HP	1/4	1/2	1	2	3
Rated output capacity (kVA)	200 V	0.5	0.8	1.3	2.7	3.8
	240 V	0.6	1.2	2.0	3.3	4.5
Rated input voltage		1/3-phase 200 V -10% to 240 V +10%, 50/60 Hz ±5%				
Rated output voltage <sup>2</sup>		3-phase 200 to 240 V (Cannot output the voltage with abnormal incoming voltage.)				
Rated output current (A)		1.6	2.6	4.0	8.0	11.0
Weight (kg)		0.7	0.85	0.9	1.8	1.8
Cooling method		Self-cooling			Forced-air-cooling	
Braking torque	At short-time deceleration <sup>3</sup> At capacitor feedback	Approx. 50%			Approx. 20% to 40%	
	For mounting discharge resistance	Approx. 150%		Approx. 100%		Approx. 80%
	Minimum connection resistance (Ω)	100		50		35

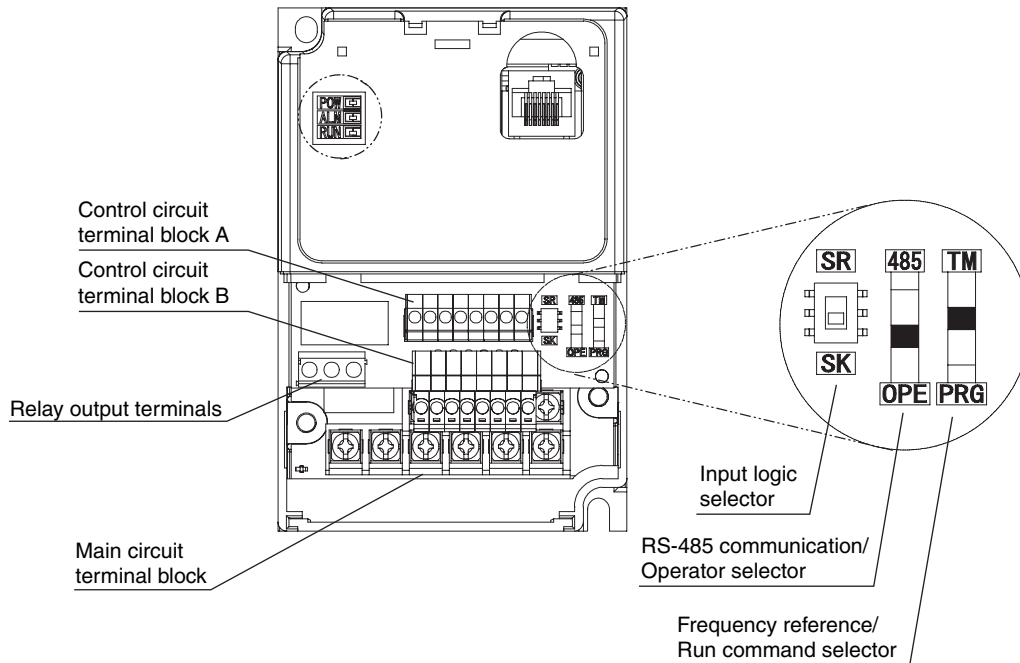
Common Specifications

Item		Specifications
Enclosure rating *4		Semi-closed (IP20)
Control	Control Method	Phase-to-phase sinusoidal modulation PWM
	Output frequency range *5	0.5 to 400 Hz
	Frequency precision *6	Digital command: ±0.01% of the max. frequency Analog command: ±0.2% of the max. frequency (25°C ±10°C)
	Frequency setting resolution	Digital setting: 0.1 Hz Analog setting: Max. frequency/1000
	Voltage/Frequency characteristics	V/f characteristics (constant/reduced torque)
	Overload current rating	150% for 1 min
	Acceleration/Deceleration time	0.01 to 3000 s (line, S-shape curve), 2nd acceleration/deceleration setting available
	Start torque	200% min./1 Hz
	Carrier frequency modification range	2.0 to 14.0 kHz
	DC injection braking	Starts at a frequency lower than that in deceleration via the STOP command, or via an external input. (Level and time settable.)
Protective Functions		Overcurrent, overvoltage, undervoltage, electronic thermal, temperature error, ground-fault overcurrent at power-on state, overload limit, incoming overvoltage, external trip, memory error, CPU error, USP error, internal communication error, BRD error, overvoltage protection during deceleration, overcurrent suppression
Input signal	Multi-function input	FW (forward), RV (reverse), CF1 to CF4 (multi-step speed), RS (reset), AT (current input selection), USP (USP function), EXT (external trip), OPE (forced OPE mode), STA (3-wire startup), STP (3-wire stop), F/R (3-wire forward/reverse), FRS (free run stop), JG (jogging), 2CH (2-step acceleration/deceleration), DB (external DC injection braking), SET (2nd function), UP (remote operation/accelerate), DWN (remote operation/decelerate), PID (PID selection), PIDC (PID deviation reset), PTC (thermistor input), UDC (data clear of UP/DWN function), SFT (soft lock), ADD (frequency addition), F-TM (forced terminal block), RDY (operation ready), SP-SET (special setting)
Output signal	Multi-function output	RUN (signal during operation), FA1 (frequency arrival signal), FA2 (frequency arrival signal), OL (overload warning signal), OD (PID excess deviation signal), AL (alarm signal), ODC (communication option disconnected), FBV (PID FB status output), NDc (Network error), LOG (Logic operation output)
	Frequency monitor	Analog meter (0 to 10 V DC, 1 mA max.), Frequency/Current signals are selectable via the analog output terminal.
	Relay output	The relay (SPDT contact) outputs signals corresponding to the multi-function output.
Other functions		AVR function, V/f characteristic selection, line acceleration/deceleration, upper/lower limit, 16-step speeds, starting frequency adjustment, jogging operation, carrier frequency adjustment, PID control, frequency jump, analog gain/bias adjustment, S-shape acceleration/deceleration, electronic thermal characteristics/level adjustment, retry function, automatic torque boost, trip monitor, soft lock function, frequency conversion display, USP function, 2nd control function, motor rotation speed UP/DOWN, fan ON/OFF function
General specifications	Ambient temperature	–10°C to 40°C (Carrier frequency: 5 kHz max.) –10°C to 50°C (Both the carrier frequency and output current need to be reduced)
	Ambient storage temperature	–20°C to 65°C (short-time temperature during transport)
	Humidity	20% to 90% RH
	Vibration	5.9 m/s <sup>2</sup> (0.6G), 10 to 55 Hz (Complies with the test method specified in JIS C0040 (1999).)
	Location	At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
	Applicable standard	Complies with UL, cUL, CE standards. (Insulation distance)
Options		Noise filter, AC/DC reactors, regenerative braking unit and resistor, etc.

- \*1. The applicable motor is a 3-phase standard motor. For using any other type, be sure that the rated current does not exceed that of the Inverter.
- \*2. Output voltage decreases according to the level of the power supply voltage.
- \*3. The braking torque at the time of capacitor feedback is an average deceleration torque at the shortest deceleration (when it stops from 50 Hz), not a continuous regeneration torque. Also, the average deceleration torque varies depending on the motor loss. The value is reduced in operation over 50 Hz. Note that no regenerative braking circuit is built into the Inverter. If you need a larger regenerative torque, use the optionally available regenerative braking unit and resistor. The regenerative braking unit should be used only for short-time regeneration.
- \*4. Protection method complies with JEM 1030.
- \*5. To operate the motor at over 50/60 Hz, contact the motor manufacturer to find out the maximum allowable revolution.
- \*6. For motor stabilization, the output frequency may exceed the maximum frequency set in A004 (A204) by 2 Hz max.

■ Terminal Block Specifications

● Terminal Block Position



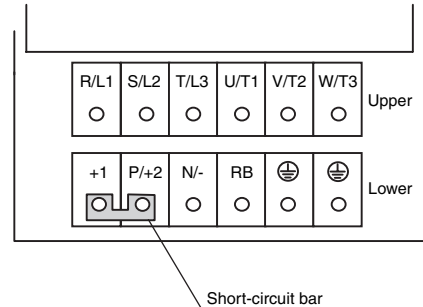
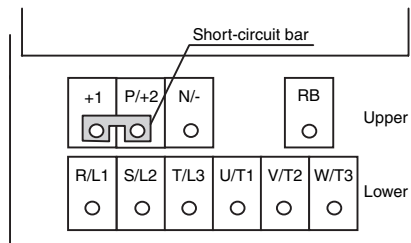
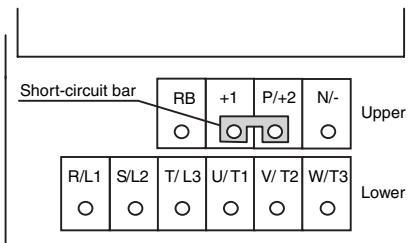
Note. This illustration shows the terminal block with the front cover removed

● Specifications of Main Circuit Terminals

**Terminal Arrangement**  
3G3MX-A2002 to A2007  
3G3MX-AE002 to AE004

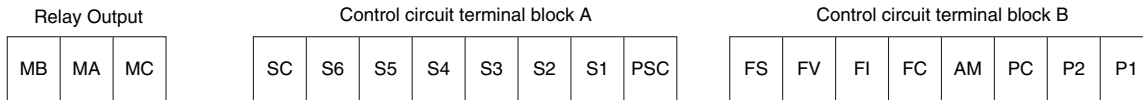
**Terminal Arrangement**  
3G3MX-A2015 to A2037  
3G3MX-A4004 to A4037  
3G3MX-AE007 to AE022

**Terminal Arrangement**  
3G3MX-A2055 to A2075  
3G3MX-A4055 to A4075



Terminal symbol	Terminal name	Function	Connection example
R/L1, S/L2, T/L3	Main power supply input terminal	Connect the input power supply.	<p>Do not remove the short-circuit bar between +1 and P/+2 when a DC reactor is not connected.</p>
U/T1, V/T2, W/T3	Inverter output terminal	Connect to the motor.	
+1, P/+2	External DC reactor terminal	Normally connected by the short-circuit bar. Remove the short-circuit bar between +1 and P/+2 when a DC reactor is connected.	
P/+2, RB	External braking resistor connection terminal	Connect the optional braking resistor. (If a braking torque is required)	
P/+2, N/-	Regenerative braking unit connection terminal	Connect optional regenerative braking units. (If a braking torque is required) (if insufficient with only the built-in braking circuit)	
⊥	Ground terminal	Ground (Connect to ground to prevent electric shock and reduce noise.)	

● Control Circuit Terminal Specifications



	Terminal symbol	Terminal name and function	Default setting	Specifications
Input signal	PSC	External power supply terminal for input signal (input) ...At sink logic Internal power supply output terminal for input signal (output) ...At source logic	---	24 V DC ±10% 30 mA max.  24 V DC ±10% 100 mA max.
	S1	Multi-function input S1 to S6  Select 6 functions among the 27 functions and allocate them to from terminals S1 to S6.	Forward/Stop	Contact input Close: ON (Start) Open: OFF (Stop)  Minimum ON time: 12 ms min.
	S2		Reverse/Stop	
	S3		Fault reset	
	S4		External trip	
	S5		Multi-step speed reference 1	
	S6		Multi-step speed reference 2	
	SC	Input signal common	---	
Monitor signal	AM	Analog frequency monitor/Analog output current monitor	Analog frequency monitor	
	SC	Monitor common	---	
Frequency reference input	FS	Frequency reference power supply	---	10 V DC 10 mA max.
	FV	Voltage frequency reference signal	---	0-10 V DC Input impedance 10 Ω
	FI	Current frequency reference signal	---	DC 4-20 mA Input impedance 250 Ω
	FC	Frequency reference common	---	
Output signal	P1	Multi-function Output Terminal Select 2 functions of the Inverter status and allocate them to terminals P1 and P2.	Frequency arrival signal at a constant speed	27 V DC 50 mA max.
	P2		Signal during RUN	
	PC	Output signal common	---	
Relay output signal	MA		Factory default relay settings Under normal operation: MA-MC Close Under abnormal operation or power shutdown: MA-MC Open	
	MB			
	MC			

● Mode Selector

For the mounting position of each selector, refer to page 30.

<Input Logic Selector>

Available to switch the input logic (source or sink) in the multi-function input terminal circuit.

Symbol	Name	Status	Description
SR/SK	Input logic selector	SR	Source logic
		SK [Default]	Sink logic

<RS-485 Communication/Operator Selector>

Select the mode according to the option connected to the communications connector.

When using the 3G3AX-OP01 supplied with the Inverter, it is available regardless of the switch condition

Symbol	Name	Status	Description
485/OPE	RS-485 communication/ operator selector	485	ModBus communication
		OPE [Default]	Digital Operator (Option: 3G3AX-OP01)

<Frequency Reference/RUN Command Source Selector>

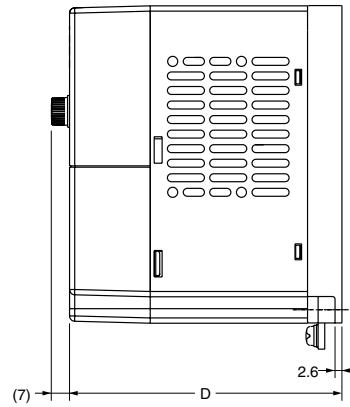
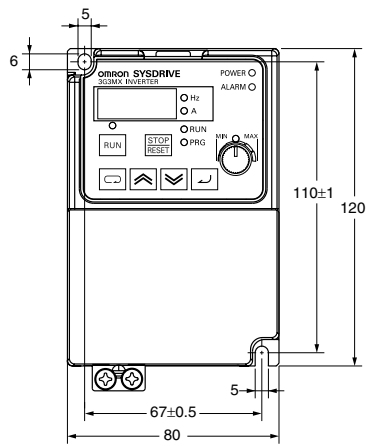
Switches the source for frequency reference and RUN command of the Inverter.

Symbol	Name	Status	Description
TM/PRG	Frequency reference/ RUN command source selector	TM	Control terminal block (terminals): The set values in A001 and A002 are invalid. Frequency reference: Analog external input (FV, FI) RUN command: Operation using the FW or RV terminal 00 (FW) or 01 (RV) must be allocated to the multi-function input terminals.
		PRG [Default]	Digital Operator setting (depends on the set values in A001 and A002.) Frequency reference: Adjuster (factory default) Available to change with the frequency reference selection (A001). RUN command: Digital Operator Available to change with the RUN command selection (A002).



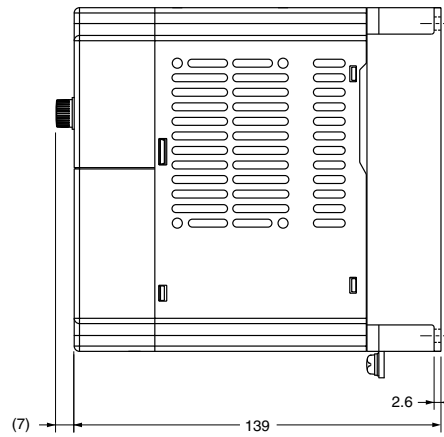
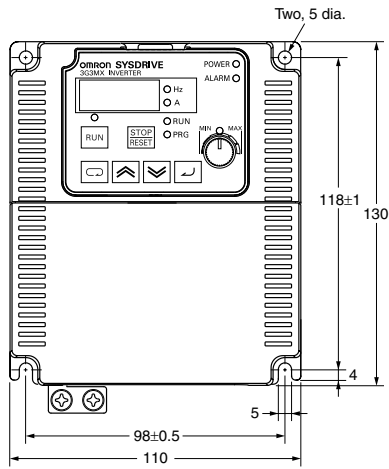
Dimensions

- 3G3MX-A2002
- 3G3MX-A2004
- 3G3MX-A2007
- 3G3MX-AE002
- 3G3MX-AE004

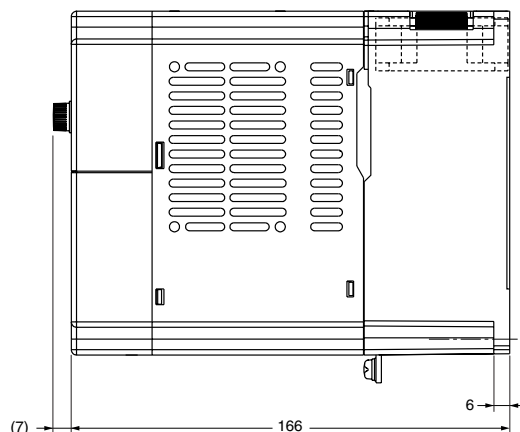
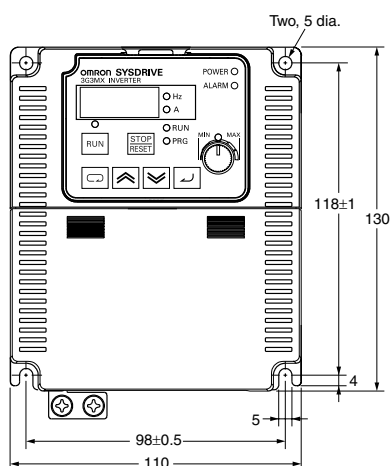


Rated voltage	Model 3G3MX-	Dimensions (mm)
		D
3phase 200 V AC	A2002	103
	A2004	117
	A2007	140
1/3phase 200 V AC	AE002	103
	AE004	117

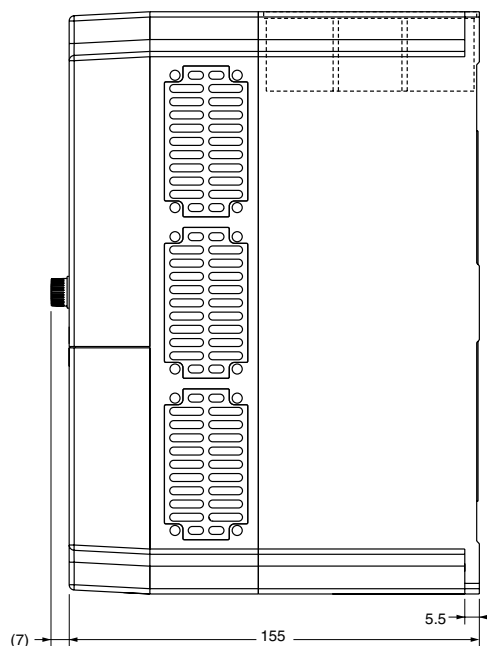
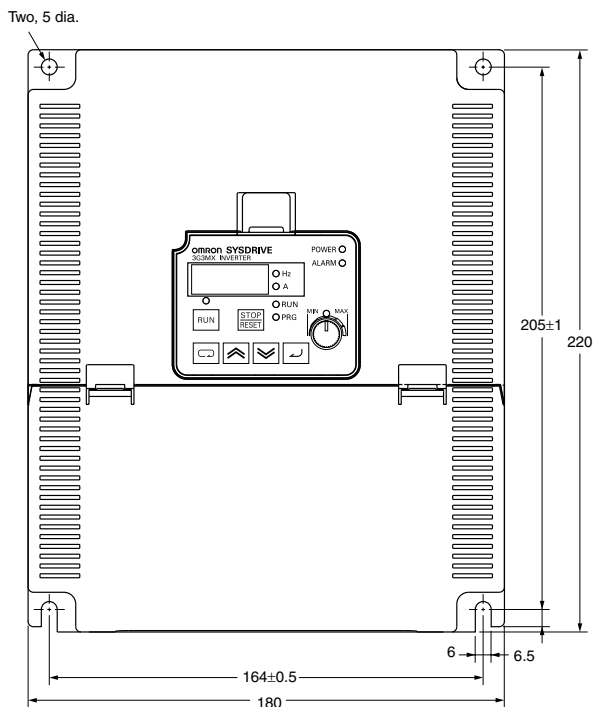
- 3G3MX-A4004
- 3G3MX-AE007



- 3G3MX-A2015
- 3G3MX-A2022
- 3G3MX-A2037
- 3G3MX-A4007
- 3G3MX-A4015
- 3G3MX-A4022
- 3G3MX-A4037
- 3G3MX-AE015
- 3G3MX-AE022



- 3G3MX-A2055
- 3G3MX-A2075
- 3G3MX-A4055
- 3G3MX-A4075



Selection

Features

SYSDRIVE  
JX Series

SYSDRIVE  
MX Series

SYSDRIVE  
RX Series

SYSDRIVE  
Option

Overview of  
Inverter Selection