

# Simple, Compact Inverters

# JX Series

## Easy-to-use Inverters for simple applications

- Compact models with a wide range of capacity from 0.2 kW to 7.5 kW.
- Main circuit adopts upper/lower wiring as with contactor.
- Side-by-side mounting contributes to space saving. \*
- PID Control
- Built-in radio noise filter for three phase type.
- Built-in RS-485 Modbus

\* Some models have restrictions in the ambient temperature, carrier frequency, and output current.



## Performance Specifications

### Inverter 3G3JX

#### 3-phase 200-V Class

| Item<br>Model name (3G3JX-)             |   | 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)             | 200V  | 0.4   | 0.9   | 1.3   | 2.4                | 3.4                | 5.5   | 8.3         | 11.0  |
|   | 240V  | 0.5   | 1.0   | 1.6   | 2.9                | 4.1                | 6.6   | 9.9         | 13.3  |
| Rated input voltage                     |   | 3-phase (3-wire) 200 V –15% to 240 V +10%, 50/60 Hz ± 5%                              |       |       |                    |                    |       |             |       |
| Built-in filter                         |   | Radio noise filter  |       |       |                    |                    |       |             |       |
| Rated input current (A)                 |   | 1.8   | 3.4   | 5.2   | 9.3                | 13.0               | 20.0  | 30.0        | 40.0  |
| Rated output voltage <sup>*2</sup>      |   | 3-phase: 200 to 240 V (according to the input voltage)                                |       |       |                    |                    |       |             |       |
| Rated output current (A)                |   | 1.4   | 2.6   | 4.0   | 7.1                | 10.0               | 15.9  | 24.0        | 32.0  |
| Weight (kg)                             |   | 0.8   | 0.9   | 1.1   | 2.2                | 2.4                | 2.4   | 4.2         | 4.2   |
| Cooling method                          |   | Self-cooling  |       |       | Forced-air-cooling |                    |       |             |       |
| Braking torque                          | At short-time deceleration <sup>*3</sup><br>At capacitor feedback | Approx. 50%   |       |       |                    | Approx. 20% to 40% |       | Approx. 20% |       |
|   | DC injection braking  | Injection braking frequency/time, braking force variable, frequency control available |       |       |                    |                    |       |             |       |

#### 3-phase 400-V Class

| Item                                    |   | 3-phase 400-V class   |       |                    |                    |       |             |       |
|---|---|---|-------|--------------------|--------------------|-------|-------------|-------|
| Model name (3G3JX-)                     |   | 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)             | 380V  | 0.9   | 1.6   | 2.5                | 3.6                | 5.6   | 8.5         | 10.5  |
|   | 480V  | 1.2   | 2.0   | 3.1                | 4.5                | 7.1   | 10.8        | 13.3  |
| Rated input voltage                     |   | 3-phase (3-wire) 380 V –15% to 480 V +10%, 50/60 Hz ± 5%                              |       |                    |                    |       |             |       |
| Built-in filter                         |   | Radio noise filter  |       |                    |                    |       |             |       |
| Rated input current (A)                 |   | 2.0   | 3.3   | 5.0                | 7.0                | 11.0  | 16.5        | 20.0  |
| Rated output voltage <sup>*2</sup>      |   | 3-phase: 380 to 480 V (according to the input voltage)                                |       |                    |                    |       |             |       |
| Rated output current (A)                |   | 1.5   | 2.5   | 3.8                | 5.5                | 8.6   | 13.0        | 16.0  |
| Weight (kg)                             |   | 1.5   | 2.3   | 2.4                | 2.4                | 2.4   | 4.2         | 4.2   |
| Cooling method                          |   | Self-cooling  |       | Forced-air-cooling |                    |       |             |       |
| Braking torque                          | At short-time deceleration <sup>*3</sup><br>At capacitor feedback | Approx. 50%   |       |                    | Approx. 20% to 40% |       | Approx. 20% |       |
|   | DC injection braking  | Injection braking frequency/time, braking force variable, frequency control available |       |                    |                    |       |             |       |

\*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.

**1/3-phase 200-V Class**

| Item<br>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)             | 200V  | 0.4   | 0.9   | 1.3   | 2.4                | 3.4   |
|   | 240V  | 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-phase   | 3.1   | 5.8   | 9.0   | 16.0               | 22.5  |
|   | 3-phase   | 1.8   | 3.4   | 5.2   | 9.3                | 13.0  |
| Rated output voltage <sup>*2</sup>      |   | 3-phase: 200 to 240 V (according to the input voltage)                                |       |       |                    |       |
| Rated output current (A)                |   | 1.4   | 2.6   | 4.0   | 7.1                | 10.0  |
| Weight (kg)                             |   | 0.8   | 0.9   | 1.1   | 2.2                | 2.4   |
| Cooling method                          |   | Self-cooling  |       |       | Forced-air-cooling |       |
| Braking torque                          | At short-time deceleration <sup>*3</sup><br>At capacitor feedback | Approx. 50%   |       |       | Approx. 20% to 40% |       |
|   | DC injection braking  |   |       |       |                    |       |
|   |   | Injection braking frequency/time, braking force variable, frequency control available |       |       |                    |       |

<sup>\*1</sup> 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.

<sup>\*2</sup> Output voltage decreases according to the level of the power supply voltage.

<sup>\*3</sup> 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.

**Function Specifications****Inverter 3G3JX**

| Item                           |                                      | Specifications  |
|--------------------------------|--------------------------------------|---|
| Enclosure rating <sup>*1</sup> |                                      | Semi-closed (IP20)  |
| Control                        | Control method                       | Phase-to-phase sinusoidal modulation PWM  |
|                                | Output frequency range <sup>*2</sup> | 0.5 to 400 Hz   |
|                                | Frequency precision <sup>*3</sup>    | Digital command: ±0.01% of the max. frequency<br>Analog command: ±0.4% of the max. frequency (25°C ±10°C)   |
|                                | Frequency setting resolution         | Digital setting: 0.1 Hz<br>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 shutdown   |
| 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 shutdown) |
| 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), LOC (light load signal)  |
|                                | Frequency monitor                    | Analog output (0 to 10 V DC, 1 mA max.)<br>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.  |

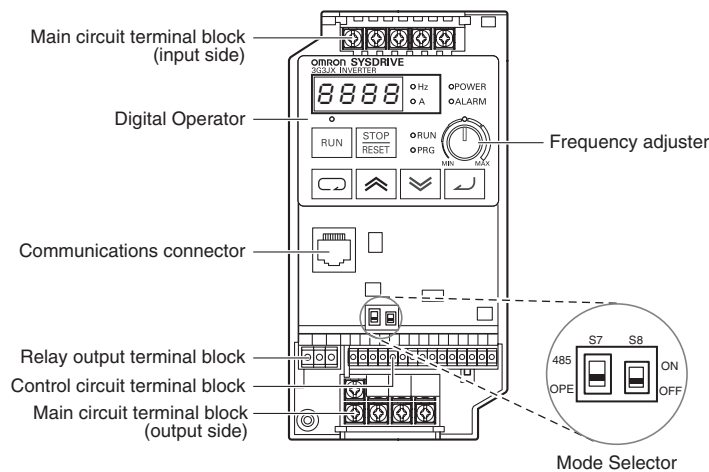
<sup>\*1</sup> Protection method complies with JEM 1030.

<sup>\*2</sup> To operate the motor at over 50/60 Hz, contact the motor manufacturer to find out the maximum allowable speed of revolution.

<sup>\*3</sup> For the stable control of the motor, the output frequency may exceed the maximum frequency set in A004 (A204) by 2 Hz max.

Components and Functions

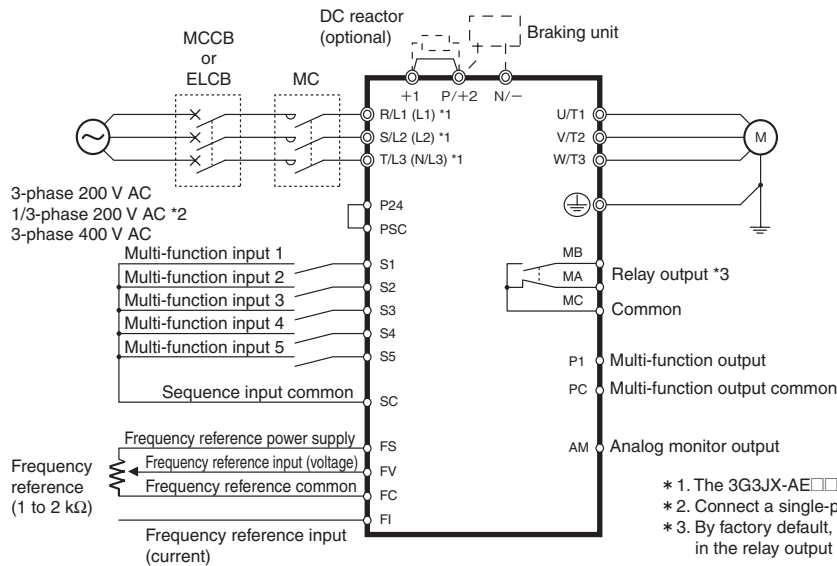
Inverter 3G3JX



| Name                                      | Function   |
|---|--|
| Main circuit terminal block (input side)  | Use this terminal block to connect the inverter to the main power supply.  |
| Digital Operator                          | Used to set parameters, perform various monitoring, and start and stop the Inverter.   |
| Frequency adjuster                        | Sets the frequency reference within a range between 0 Hz and the maximum frequency.  |
| Communications connector                  | Use this connector to connect the Digital Operator or to connect the cable for RS-485 communication.   |
| Relay output terminal block               | Use this SPDT contact terminal block for relay outputs.  |
| Control circuit terminal block            | These terminal blocks are used to connect various digital/analog input and output signals for inverter control, etc.   |
| Main circuit terminal block (output side) | Use this terminal block to connect an output to the motor.   |
| Mode Selector                             | RS-485 Communication/Operator Selector (S7): Select the mode according to the option connected to the communications connector. Emergency shutoff selector (S8): Use this selector to enable the emergency shutoff input function. |

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

Connection Diagram

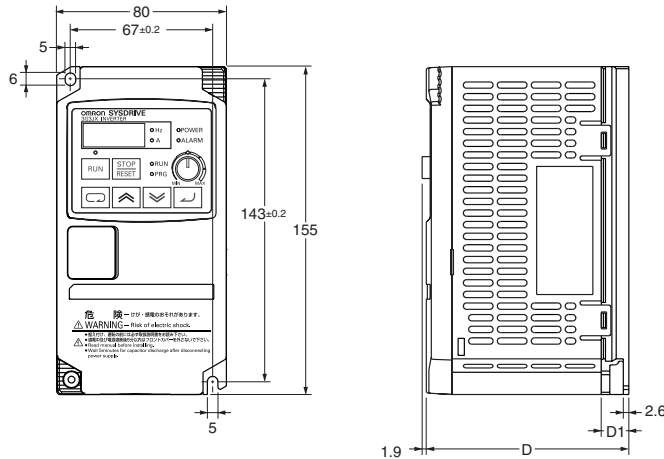


- \* 1. The 3G3JX-AE□□□ terminal symbols are shown in brackets.
- \* 2. Connect a single-phase 200-V AC input to terminals L1 and N/L3.
- \* 3. By factory default, MA is set to MC contact, and MB to NO contact in the relay output (MA, MB) selection (C036).

Dimensions

(Unit: mm)

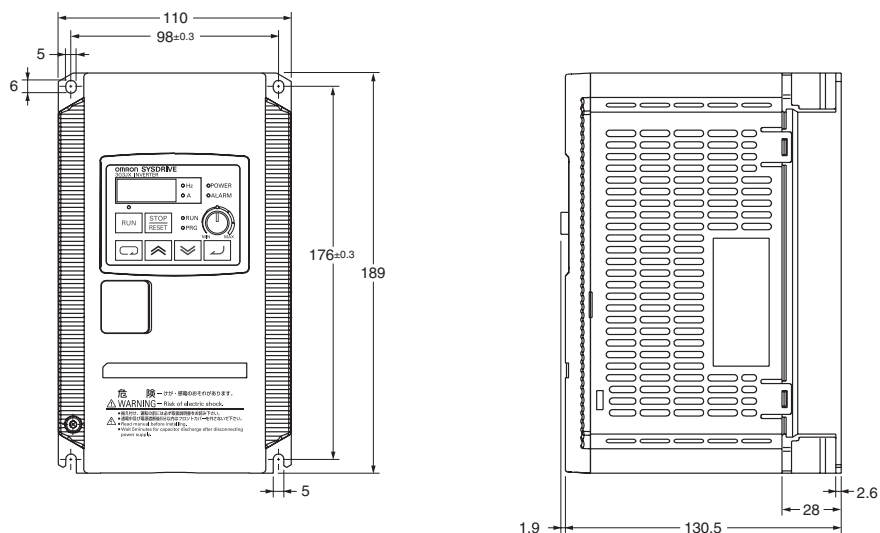
- 3G3JX-A2002
- 3G3JX-A2004
- 3G3JX-A2007
- 3G3JX-AE002
- 3G3JX-AE004



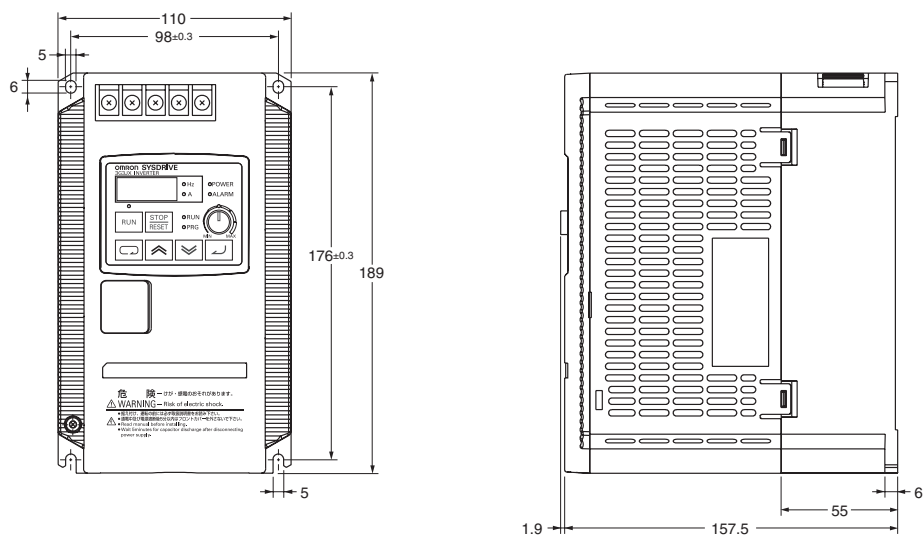
| Rated voltage     | Model 3G3JX | Dimensions (mm) |    |
|-------------------|-------------|-----------------|----|
|                   |             | D               | D1 |
| 3phase 200 V AC   | A2002       | 95.5            | 13 |
|                   | A2004       | 109.5           | 27 |
|    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

# Simple, Compact Inverters JX-Series

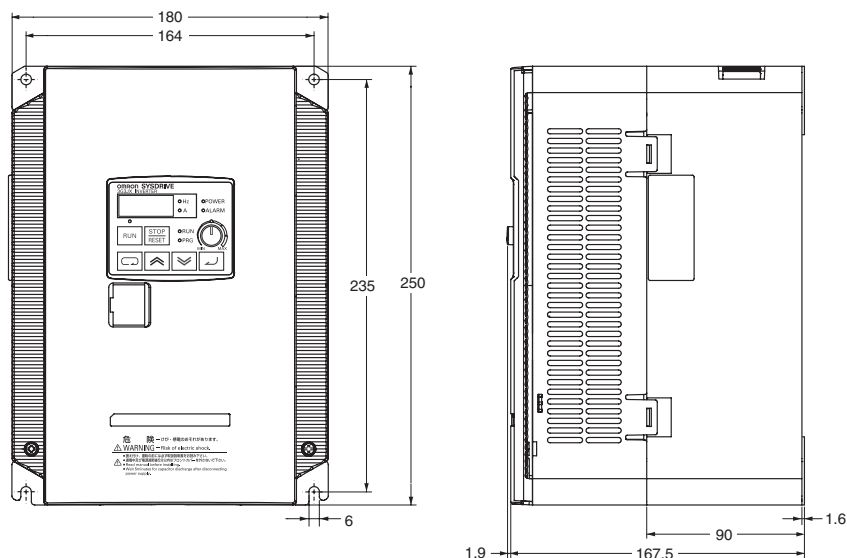
3G3JX-A4004  
3G3JX-AE007



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



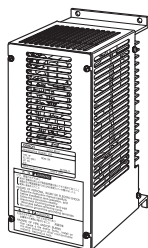
3G3JX-A2055  
3G3JX-A2075  
3G3JX-A4055  
3G3JX-A4075



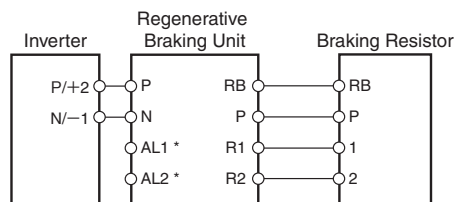
## Options

### Regenerative Braking Unit 3G3AX-RBU□□

Used with a Braking Resistor when regenerative energy is produced in the 3G3JX.



#### ●Connection Example



\* The alarm output terminals for the Regenerative Braking Unit. Provide a circuit to turn off the primary power supply for the Inverter when the temperature relay of the built-in resistor or optional Braking Resistor is activated.

**Note:** When mounting an external Braking Resistor, remove the built-in resistor.

#### ●Specifications

##### Built-in Resistance Type (3G3AX-RBU21/-RBU22/-RBU41)

| Class   |                                       | 3-phase 200 V class  |   | 3-phase 400 V class  |
|---|---------------------------------------|--|---|--|
| Model name (3G3AX-)   |                                       | RBU21  | RBU22   | RBU41 <sup>*1</sup>  |
| Connection resistance   |                                       | 17 Ω min.  | 17 Ω min.   | 34 Ω min.  |
| Operating voltage ON/OFF  |                                       | ON: 362.5±5 V, OFF: 355±5 V<br>(-5% or -10% setting available)   |   | ON: 725±5 V, OFF: 710±5 V<br>(-5% or -10% setting available) |
| Operation indication  |                                       | LED ON (Lit)   |   |  |
| Maximum number of units for parallel interlocking operation <sup>*2</sup> |                                       | 5 units  |   |  |
| Built-in resistor   | Built-in resistance                   | 120 W 180  | 120 W 20  | 120 W 180 × 2 main elements                                  |
|   | Allowable consecutive ON time         | 10s max.   | 0.5s max.   | 10s max.   |
|   | Allowable operation cycle             | Cycle 1/10 (10 s ON/90 s OFF)  | Cycle 1/80 (0.5 s ON/40 s OFF)                    | Cycle 1/10 (10 s ON/90 s OFF)                                |
|   | Power consumption                     | Instantaneous: 0.73 kW<br>Short-time rating: 120 W   | Instantaneous: 6.6 kW<br>Short-time rating: 120 W | Instantaneous: 1.46 kW<br>Short-time rating: 240 W           |
| Protective functions  | Built-in Resistor Overheat protection | Built-in relay specifications  |   |  |
|   |                                       | <ul style="list-style-type: none"> <li>The temperature relay operates if the built-in resistor reaches approx. 200 °C and recovers at approx. 170 °C max.</li> <li>Built-in temperature fuse (recovery impossible)<sup>*3</sup></li> <li>Contact rating 250 VAC 200 mA (R load)<br/>12 VDC 500 mA (R load)<br/>42 VDC 200 mA (R load)</li> <li>Minimum load 1mA</li> </ul> |   |  |
| Operating environment   | Ambient temperature                   | -10 to 50 °C   |   |  |
|   | Ambient storage temperature           | -20 °C to 65 °C (short-time temperature during transport)  |   |  |
|   | Humidity                              | 20% to 90% (with no condensation)  |   |  |
|   | Vibration                             | 5.9 m/s <sup>2</sup> (0.6 G) 10 to 55 Hz   |   |  |
|   | Location                              | At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)  |   |  |
| Paint color   |                                       | Munselle 5Y7/1 (cooling fan: aluminum color)   |   |  |

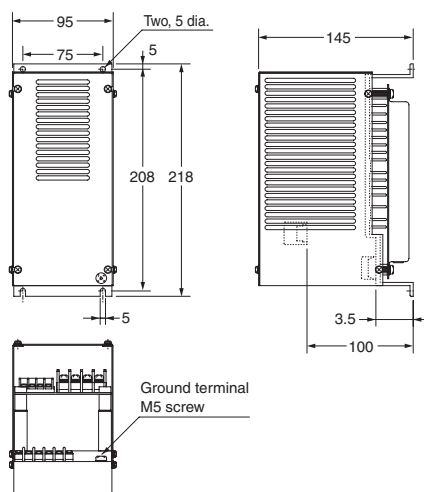
\*1 To use the Regenerative Braking Unit for 1.5 kW or more 200 V class or the 2.2 kW or more 400 V class, be sure to remove the built-in resistor.

\*2 Set the DIP switches.

\*3 The built-in resistor incorporates a temperature fuse. If the alarm terminal is not connected, the fuse may blow out in order to prevent the resistor burning due to overheating. If the fuse blows out, the built-in resistor must be replaced.

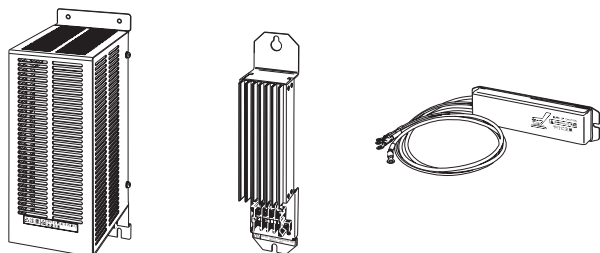
#### ●Dimensions (Unit: mm)

##### 3G3AX-RBU21/-RBU22/-RBU41

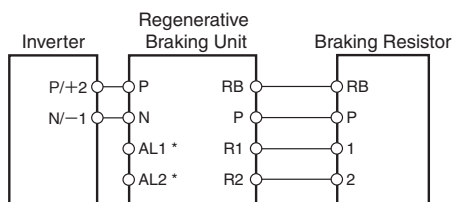


## Braking Resistor 3G3AX-RB□□□□

Consumes the regenerative motor energy with a resistor to reduce deceleration time.



### ●Connection Example



\* The alarm output terminals for the Regenerative Braking Unit. Provide a circuit to turn off the primary power supply for the Inverter when the temperature relay of the built-in resistor or optional Braking Resistor is activated.

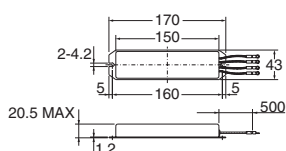
**Note:** When mounting an external Braking Resistor, remove the built-in resistor.

### ●Specifications

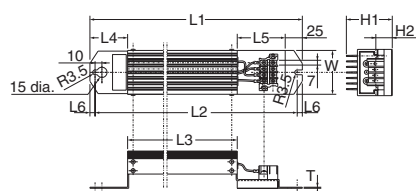
| Model                                 |                     | Compact type<br>(3G3AX-RBA□□□□)   |      |      |      | Standard type<br>(3G3AX-RBB□□□□) |      |      |      | Medium capacity type<br>(3G3AX-RBC□□□□)   |      |       |
|---------------------------------------|---------------------|---|------|------|------|----------------------------------|------|------|------|---|------|-------|
|                                       |                     | 1201  | 1202 | 1203 | 1204 | 2001                             | 2002 | 3001 | 4001 | 4001  | 6001 | 12001 |
| Resistance                            | Capacity            | 120W  | 120W | 120W | 120W | 200W                             | 200W | 300W | 400W | 400W  | 600W | 1200W |
|                                       | Resistance (Ω)      | 180   | 100  | 50   | 35   | 180                              | 100  | 50   | 35   | 50  | 35   | 17    |
| Allowable braking frequency (%)       |                     | 5   | 2.5  | 1.5  | 1.0  | 10                               | 7.5  | 7.5  | 7.5  | 10  | 10   | 10    |
| Allowable continuous braking time (s) |                     | 20  | 12   | 5    | 3    | 30                               | 30   | 30   | 20   | 10  | 10   | 10    |
| Weight (kg)                           |                     | 0.27  | 0.27 | 0.27 | 0.27 | 0.97                             | 0.97 | 1.68 | 2.85 | 2.5   | 3.6  | 6.5   |
| Fault detection function              |                     | Built-in thermal (contact capacity 240 VAC, 2 A max., minimum current 5 mA), Normally ON (NC contact)<br>Built-in temperature fuse (non-recovery) |      |      |      |                                  |      |      |      | Built-in temperature relay, Normally ON (NC)<br>Contact capacity: 240 VAC 3 A (R load), 0.2 A (L load), 36 VDC 2 A (R load) |      |       |
| General specification                 | Ambient temperature | −10 to 50 °C  |      |      |      |                                  |      |      |      |   |      |       |
|                                       | Humidity            | 20% to 90% (RH) with no condensation  |      |      |      |                                  |      |      |      |   |      |       |
|                                       | Vibration           | 5.9 m/s (0.6 G) 10 to 55 Hz Complies with JISC0911  |      |      |      |                                  |      |      |      |   |      |       |
|                                       | Location            | At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)   |      |      |      |                                  |      |      |      |   |      |       |
|                                       | Cooling method      | Self-cooling  |      |      |      |                                  |      |      |      |   |      |       |

### ●Dimensions (Unit: mm)

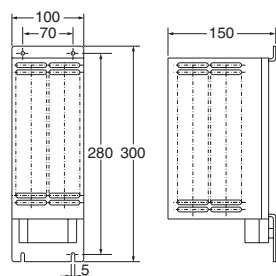
#### 3G3AX-RBA



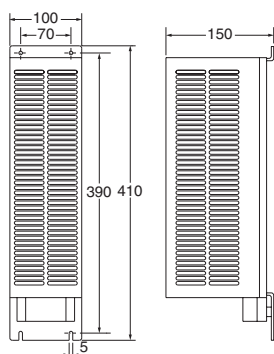
#### 3G3AX-RBB



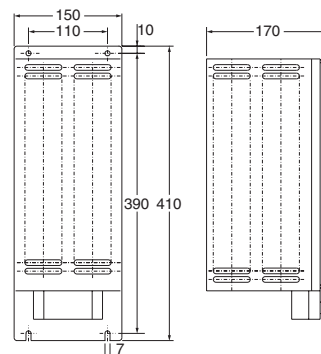
#### 3G3AX-RBC4001



#### 3G3AX-RBC6001



#### 3G3AX-RBC12001

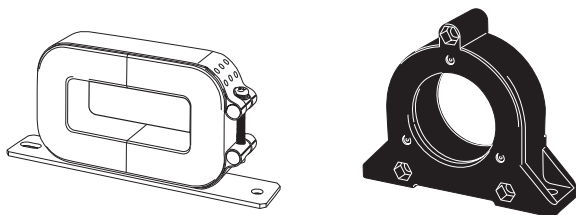
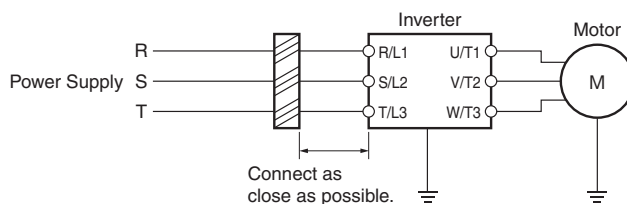


| Model         | Dimensions (mm) |     |     |    |    |     |
|---------------|-----------------|-----|-----|----|----|-----|
|               | L1              | L2  | L3  | L4 | L5 | L6  |
| 3G3AX-RBB2001 | 310             | 295 | 160 | 55 | 70 | 7.5 |
| 3G3AX-RBB2002 | 310             | 295 | 160 | 55 | 70 | 7.5 |
| 3G3AX-RBB3001 | 470             | 455 | 320 | 55 | 70 | 7.5 |
| 3G3AX-RBB4001 | 435             | 422 | 300 | 50 | 60 | 6.5 |

| Model         | Dimensions (mm) |    |    |     | Weight (kg) | Screw size |
|---------------|-----------------|----|----|-----|-------------|------------|
|               | H1              | H2 | W  | T   |             |            |
| 3G3AX-RBB2001 | 67              | 12 | 64 | 1.6 | 0.97        | M3.5       |
| 3G3AX-RBB2002 | 67              | 12 | 64 | 1.6 | 0.97        |            |
| 3G3AX-RBB3001 | 67              | 12 | 64 | 1.6 | 1.68        |            |
| 3G3AX-RBB4001 | 94              | 15 | 76 | 2   | 2.85        |            |

**Radio Noise Filter 3G3AX-ZCL□**

Connected to the inverter input/output cables to reduce noise coming into the inverter from the power supply line and noise flowing from the inverter into the power supply line.

**●Connection Example**

Note 1: Wind each of three phase wires in the same direction.

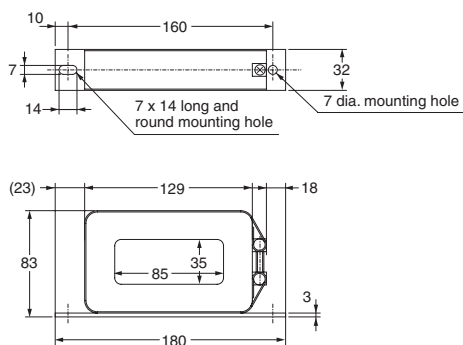
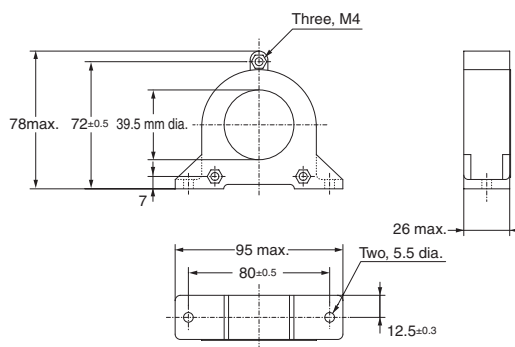
Note 2: Can be used on both the input and output sides of the Inverter.

**●Specifications****3G3AX-ZCL1**

| Applicable Inverter capacity (kW) | 200 V class    |                     |                |                     | 400 V class    |                     |                |                     |
|-----------------------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|
|                                   | Input          |                     | Output         |                     | Input          |                     | Output         |                     |
|                                   | No. of filters | No. of penetrations | No. of filters | No. of penetrations | No. of filters | No. of penetrations | No. of filters | No. of penetrations |
| 0.2                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 0.4                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 0.75                              | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 1.5                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 2.2                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 3.7                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 5.5                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 7.5                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |

**3G3AX-ZCL2**

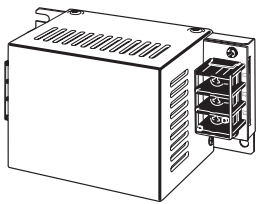
| Applicable Inverter capacity (kW) | 200 V class    |                     |                |                     | 400 V class    |                     |                |                     |
|-----------------------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|----------------|---------------------|
|                                   | Input          |                     | Output         |                     | Input          |                     | Output         |                     |
|                                   | No. of filters | No. of penetrations | No. of filters | No. of penetrations | No. of filters | No. of penetrations | No. of filters | No. of penetrations |
| 0.2                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 0.4                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 0.75                              | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 1.5                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 2.2                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 3.7                               | 1              | 4                   | 1              | 4                   | 1              | 4                   | 1              | 4                   |
| 5.5                               | N/A            |                     | N/A            |                     | 1              | 4                   | 1              | 4                   |
| 7.5                               |                |                     |                |                     | 1              | 4                   | 1              | 4                   |

**●Dimensions (Unit: mm)****3G3AX-ZCL1****3G3AZ-ZCL2**

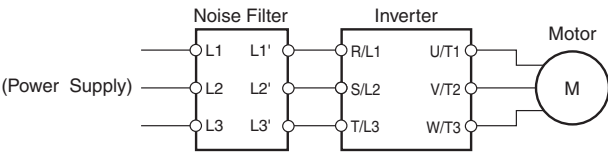


Input Noise Filter **3G3AX-NFI□□**

Reduces noise coming into the inverter from the power supply line and noise flowing from the inverter into the power supply line. Connect as close to the Inverter as possible.



●Connection Example

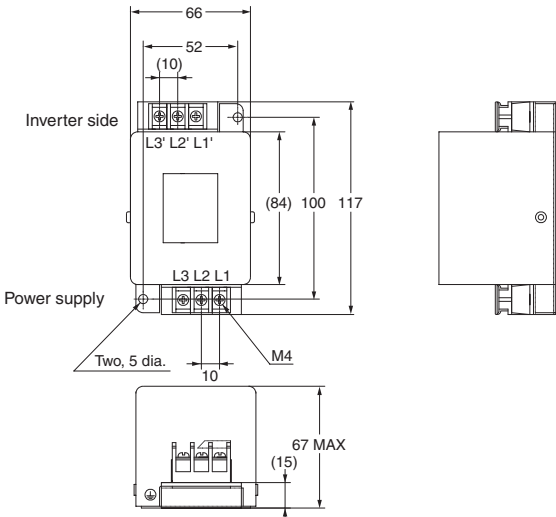


●Specifications

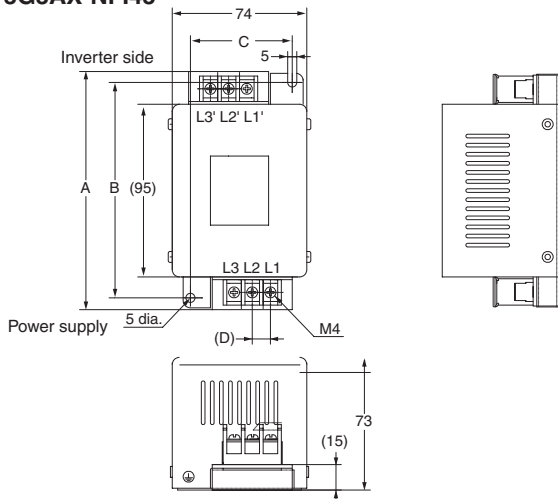
| Power supply    | Model       | Applicable Inverter capacity (kW) | Rated input current In (A) at an ambient temperature of 50 °C | Power loss (W) | Leakage current (mA/phase) at 60 Hz | Case enclosure rating | Terminal size | Wire dia.                              | Weight (kg) |
|-----------------|-------------|-----------------------------------|---|----------------|-------------------------------------|-----------------------|---------------|--|-------------|
| 3-phase 200 VAC | 3G3AX-NFI21 | 0.2 to 0.75                       | 3 × 6A  | 3              | <1.5 (250V)                         | Plastic, IP00         | M4            | 1.25mm <sup>2</sup>                    | 0.5         |
|                 | 3G3AX-NFI22 | 1.5                               | 3 × 10A   | 4              | <1.5 (250V)                         | Plastic, IP00         | M4            | 2mm <sup>2</sup>                       | 0.6         |
|                 | 3G3AX-NFI23 | 2.2, 3.7                          | 3 × 20A   | 6              | <1.5 (250V)                         | Plastic, IP00         | M4            | 2mm <sup>2</sup> , 3.5mm <sup>2</sup>  | 0.7         |
|                 | 3G3AX-NFI24 | 5.5                               | 3 × 30A   | 9              | <1.5 (250V)                         | Plastic, IP00         | M4            | 5.5mm <sup>2</sup>                     | 0.8         |
|                 | 3G3AX-NFI25 | 7.5                               | 3 × 40A   | 12             | <1.5 (250V)                         | Plastic, IP00         | M5            | 8mm <sup>2</sup>                       | 1.4         |
| 3-phase 400 VAC | 3G3AX-NFI41 | 0.4 to 2.2                        | 3 × 7A  | 2              | <7.5 (480V)                         | Plastic, IP00         | M4            | 1.25mm <sup>2</sup> , 2mm <sup>2</sup> | 0.7         |
|                 | 3G3AX-NFI42 | 3.7                               | 3 × 10A   | 4              | <7.5 (480V)                         | Plastic, IP00         | M4            | 2mm <sup>2</sup>                       | 0.7         |
|                 | 3G3AX-NFI43 | 5.5, 7.5                          | 3 × 20A   | 6              | <7.5 (480V)                         | Plastic, IP00         | M4            | 2mm <sup>2</sup> , 3.5mm <sup>2</sup>  | 0.7         |

●Dimensions (Unit: mm)

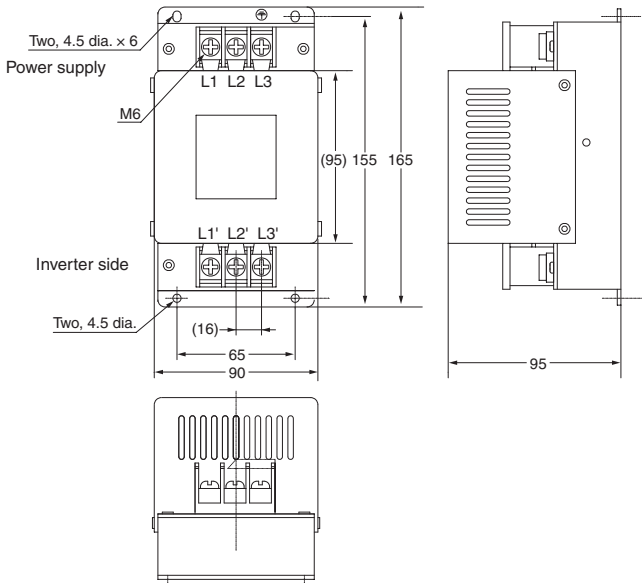
3G3AX-NFI21  
3G3AX-NFI22



3G3AX-NFI23/3G3AX-NFI24  
3G3AX-NFI41/3G3AX-NFI42  
3G3AX-NFI43



3G3AX-NFI25

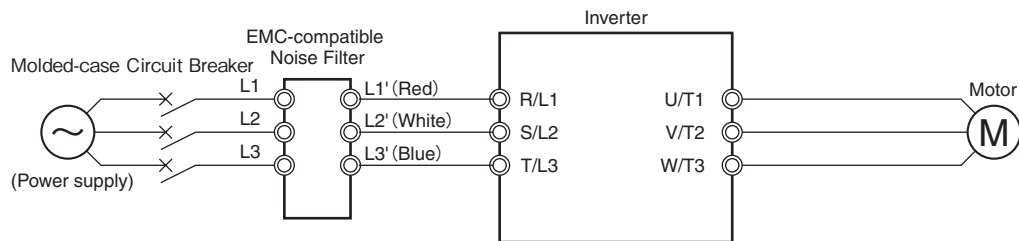
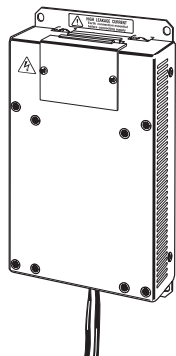


| Model       | Dimensions (Unit: mm) |     |    |    |
|-------------|-----------------------|-----|----|----|
|             | A                     | B   | C  | D  |
| 3G3AX-NFI23 | 128                   | 118 | 56 | 10 |
| 3G3AX-NFI24 | 144                   | 130 | 56 | 11 |
| 3G3AX-NFI41 | 144                   | 130 | 56 | 11 |
| 3G3AX-NFI42 | 144                   | 130 | 56 | 11 |
| 3G3AX-NFI43 | 144                   | 130 | 56 | 11 |



**EMC-compatible Noise Filter 3G3AX-EFI□□**

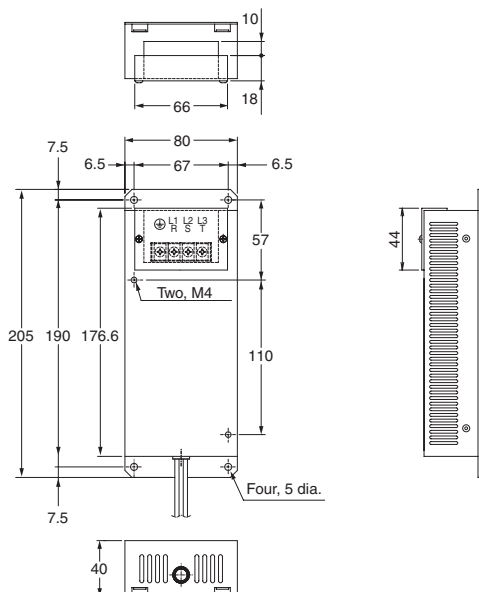
Separately installed option used to comply with the EC's EMC Directives. Select a filter appropriate for the Inverter model.

**●Connection Example****●Specifications**

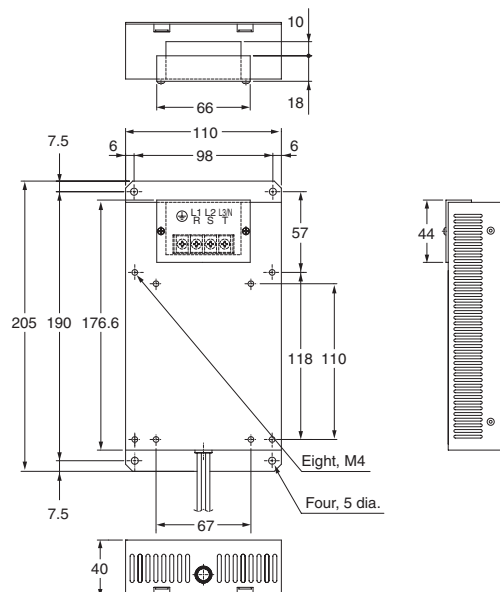
| Power supply        | Model       | Applicable Inverter capacity (kW) |               |               | Input current In (A) | Leakage current (mA/phase at 60 Hz) | Case, Enclosure rating | Screw size | Wire size                              | Weight (kg) |
|---------------------|-------------|-----------------------------------|---------------|---------------|----------------------|-------------------------------------|------------------------|------------|--|-------------|
|                     |             | 1-phase 200 V                     | 3-phase 200 V | 3-phase 400 V |                      |                                     |                        |            |  |             |
| 1-phase 200 VAC     | 3G3AX-EFIB1 | 0.2, 0.4                          | ---           | ---           | 2 × 6A               | 15                                  | Aluminum, IP20         | M4         | 1.3mm <sup>2</sup>                     | 0.43        |
|                     | 3G3AX-EFIB2 | 0.75                              | ---           | ---           | 2 × 10A              | 15                                  |                        |            | 2.1mm <sup>2</sup>                     | 0.6         |
|                     | 3G3AX-EFIB3 | 1.5, 2.2                          | ---           | ---           | 2 × 21A              | 15                                  |                        |            | 3.3 to 5.3mm <sup>2</sup>              | 0.88        |
| 3-phase 200 VAC     | 3G3AX-EFI21 | ---                               | 0.2, 0.4      | ---           | 3 × 4A               | 15                                  | Aluminum, IP20         | M4         | 1.3mm <sup>2</sup>                     | 0.56        |
|                     | 3G3AX-EFI22 | ---                               | 0.75          | 0.4 to 1.5    | 3 × 5.2A             | 16                                  |                        |            | 1.3mm <sup>2</sup>                     | 0.72        |
|                     | 3G3AX-EFI23 | ---                               | 1.5, 2.2      | 2.2, 3.7      | 3 × 14A              | 16                                  |                        |            | 2.1mm <sup>2</sup>                     | 1.2         |
|                     | 3G3AX-EFI24 | ---                               | 3.7           | ---           | 3 × 22A              | 16                                  |                        |            | 3.3mm <sup>2</sup>                     | 1.3         |
|                     | 3G3AX-EFI25 | ---                               | 5.5, 7.5      | 5.5, 7.5      | 3 × 40A              | 90                                  |                        | M5         | 3.3 to 8.4mm <sup>2</sup>              | 2.4         |
| 3-phase 200/400 VAC | 3G3AX-EFI41 | ---                               | 0.4, 0.75     | 0.4 to 2.2    | 3 × 7A               | 150                                 | Plastic, IP00          | M4         | 1.25mm <sup>2</sup> , 2mm <sup>2</sup> | 0.7         |
|                     | 3G3AX-EFI42 | ---                               | 1.5           | 3.7           | 3 × 10A              | 150                                 |                        |            | 2mm <sup>2</sup>                       | 0.7         |
|                     | 3G3AX-EFI43 | ---                               | 2.2, 3.7      | 5.5, 7.5      | 3 × 20A              | 170                                 |                        | M5         | 2mm <sup>2</sup> , 3.5mm <sup>2</sup>  | 1.0         |
|                     | 3G3AX-EFI44 | ---                               | 5.5           | ---           | 3 × 30A              | 170                                 |                        |            | 5.5mm <sup>2</sup>                     | 1.3         |
|                     | 3G3AX-EFI45 | ---                               | 7.5           | ---           | 3 × 40A              | 170                                 |                        |            | 8mm <sup>2</sup>                       | 1.4         |

**●Dimensions (Unit: mm)**

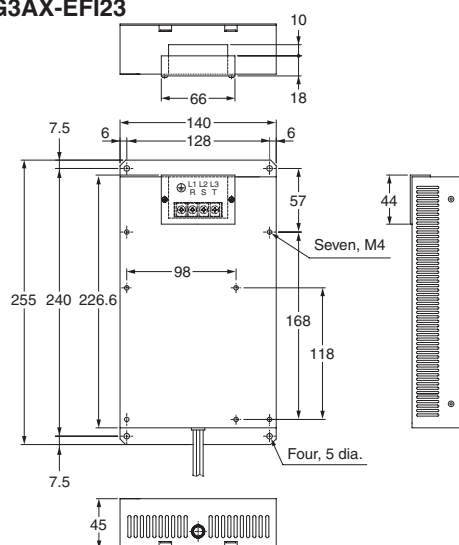
**3G3AX-EFIB1**  
**3G3AX-EFI21**



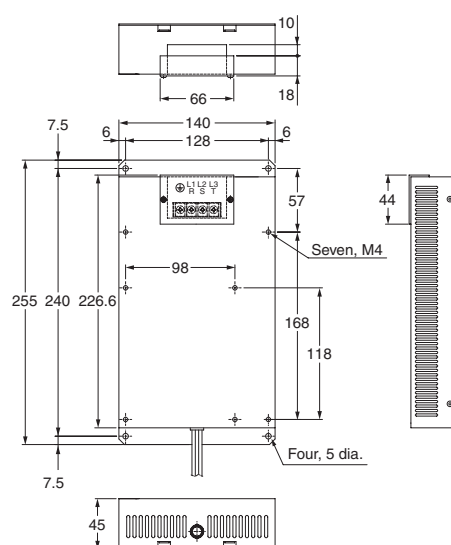
**3G3AX-EFIB2**  
**3G3AX-EFI22**



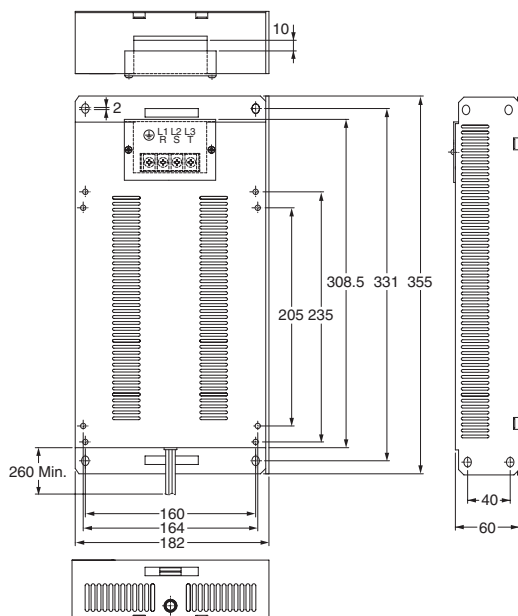
**3G3AX-EFIB3  
3G3AX-EFI23**



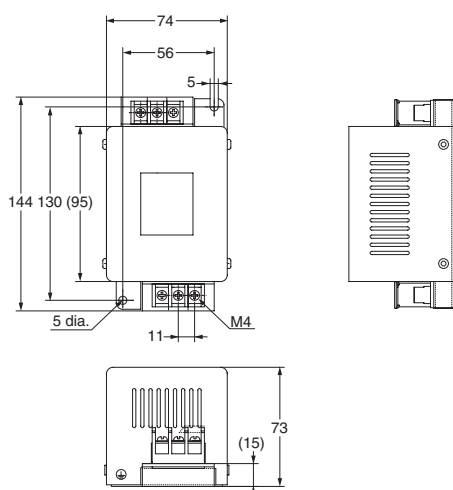
**3G3AX-EFI24**



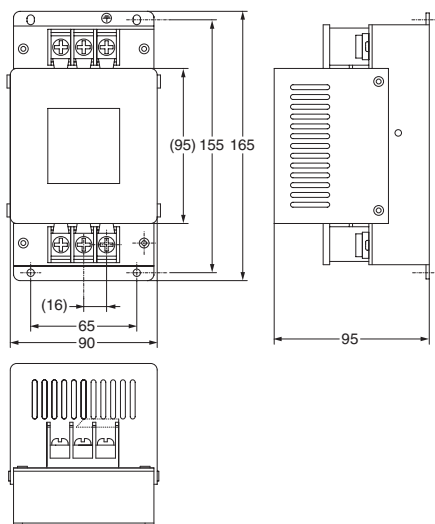
**3G3AX-EFI25**



**3G3AX-EFI41  
3G3AX-EFI42**

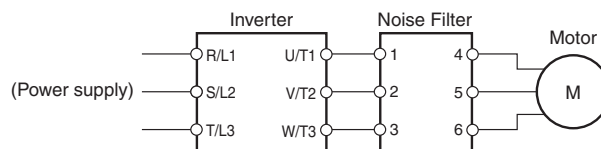
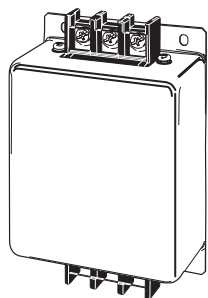


**3G3AX-EFI43/3G3AX-EFI44  
3G3AX-EFI45**

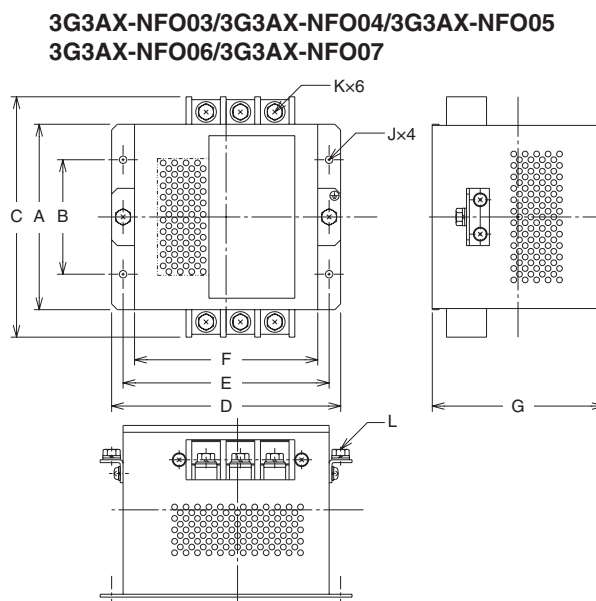
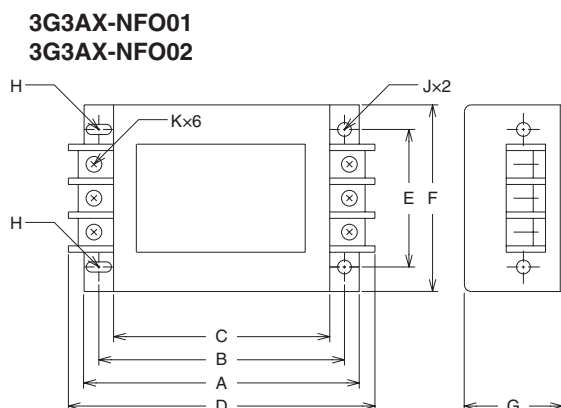


**Output Noise Filter 3G3AX-NFO□□**

Reduces noise generated by the Inverter. Connect as close to the Inverter as possible.

**●Connection Example****●Specifications**

| Power supply                                | Model       | Rated current (A) | Applicable motor (kW) |             | External Dimensions (H X W X D) (mm) | Weight (kg) |
|---|-------------|-------------------|-----------------------|-------------|--------------------------------------|-------------|
|   |             |                   | 200 V class           | 400 V class |                                      |             |
| 3-phase, 3-wire<br>Rated voltage<br>500 VAC | 3G3AX-NFO01 | 6                 | to 0.75               | to 2.2      | 156 × 95 × 50                        | 0.7         |
|   | 3G3AX-NFO02 | 12                | 1.5, 2.2              | 3.7         | 176 × 110 × 70                       | 0.9         |
|   | 3G3AX-NFO03 | 25                | 3.7, 5.5              | 5.5, 7.5    | 154 × 160 × 120                      | 2.1         |
|   | 3G3AX-NFO04 | 50                | 7.5                   | ---         | 210 × 200 × 150                      | 3.7         |

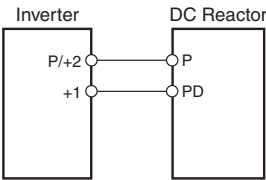
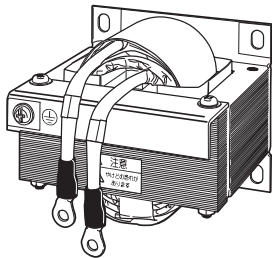
**●Dimensions (Unit: mm)**

| Model       | A   | B   | C   | D   | E   | F   | G   | H                        | J           | K  | L   |
|-------------|-----|-----|-----|-----|-----|-----|-----|--------------------------|-------------|----|-----|
| 3G3AX-NFO01 | 140 | 125 | 110 | 156 | 70  | 95  | 50  | R: 2.25mm<br>Length: 6mm | 4.5 dia. mm | M4 | --- |
| 3G3AX-NFO02 | 160 | 145 | 130 | 176 | 80  | 110 | 70  | R: 2.75mm<br>Length: 7mm | 5.5 dia. mm | M4 | --- |
| 3G3AX-NFO03 | 112 | 80  | 154 | 160 | 145 | 130 | 120 | ---                      | 6.5 dia. mm | M4 | --- |
| 3G3AX-NFO04 | 162 | 100 | 210 | 200 | 180 | 160 | 150 | ---                      | 6.5 dia. mm | M5 | M5  |

**DC Reactor 3G3AX-DL□□□□**

Used to suppress harmonic current generated from the Inverter.  
Suppresses harmonic current better than the AC Reactor and can be used with the AC Reactor.

●**Connection Example**



●**Specifications**

| Inverter Input power supply | Model        | Figure No. | Applicable Inverter | Dimensions (mm) Bmax: coil dimensions |     |     |     |     |    |    |         |    | Weight (kg) | Standard applicable wire  |
|-----------------------------|--------------|------------|---------------------|---------------------------------------|-----|-----|-----|-----|----|----|---------|----|-------------|---------------------------|
|                             |              |            |                     | W                                     | D   | H   | A   | B   | X  | Y  | C       | K  |             |                           |
| 3/1-phase<br>200 VAC        | 3G3AX-DL2002 | 1          | 0.2                 | 66                                    | 90  | 98  | --- | 85  | 56 | 72 | 5.2 × 8 | M4 | 0.8         | 1.25 mm <sup>2</sup> min. |
|                             | 3G3AX-DL2004 |            | 0.4                 | 66                                    | 90  | 98  | --- | 95  | 56 | 72 | 5.2 × 8 | M4 | 1.0         | 1.25 mm <sup>2</sup> min. |
|                             | 3G3AX-DL2007 |            | 0.75                | 66                                    | 90  | 98  | --- | 105 | 56 | 72 | 5.2 × 8 | M4 | 1.3         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL2015 |            | 1.5                 | 66                                    | 90  | 98  | --- | 115 | 56 | 72 | 5.2 × 8 | M4 | 1.6         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL2022 |            | 2.2                 | 86                                    | 100 | 116 | --- | 105 | 71 | 80 | 6 × 9   | M4 | 2.1         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL2037 |            | 3.7                 | 86                                    | 100 | 118 | --- | 120 | 71 | 80 | 6 × 9   | M4 | 2.6         | 3.5 mm <sup>2</sup> min.  |
|                             | 3G3AX-DL2055 | 2          | 5.5                 | 111                                   | 100 | 210 | --- | 110 | 95 | 80 | 7 × 11  | M5 | 3.6         | 8 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL2075 |            | 7.5                 | 111                                   | 100 | 212 | --- | 120 | 95 | 80 | 7 × 11  | M6 | 3.9         | 14 mm <sup>2</sup> min.   |
| 3-phase<br>400 VAC          | 3G3AX-DL4004 | 1          | 0.4                 | 66                                    | 90  | 98  | --- | 85  | 56 | 72 | 5.2 × 8 | M4 | 0.8         | 1.25 mm <sup>2</sup> min. |
|                             | 3G3AX-DL4007 |            | 0.75                | 66                                    | 90  | 98  | --- | 95  | 56 | 72 | 5.2 × 8 | M4 | 1.1         | 1.25 mm <sup>2</sup> min. |
|                             | 3G3AX-DL4015 |            | 1.5                 | 66                                    | 90  | 98  | --- | 115 | 56 | 72 | 5.2 × 8 | M4 | 1.6         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL4022 |            | 2.2                 | 86                                    | 100 | 116 | --- | 105 | 71 | 80 | 6 × 9   | M4 | 2.1         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL4037 |            | 3.7                 | 86                                    | 100 | 116 | --- | 120 | 71 | 80 | 6 × 9   | M4 | 2.6         | 2 mm <sup>2</sup> min.    |
|                             | 3G3AX-DL4055 |            | 5.5                 | 111                                   | 100 | 138 | --- | 110 | 95 | 80 | 7 × 11  | M4 | 3.6         | 3.5 mm <sup>2</sup> min.  |
|                             | 3G3AX-DL4075 |            | 7.5                 | 111                                   | 100 | 138 | --- | 115 | 95 | 80 | 7 × 11  | M4 | 3.9         | 3.5 mm <sup>2</sup> min.  |

●**Dimensions (Unit: mm)**

Fig. 1

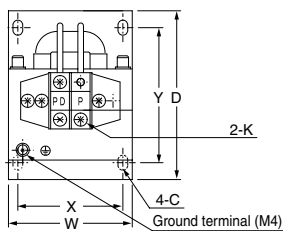
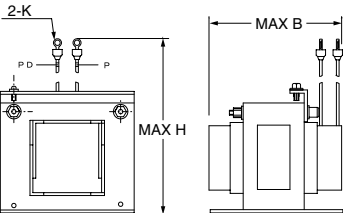
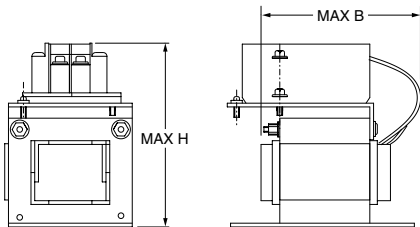
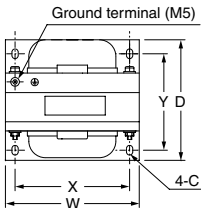
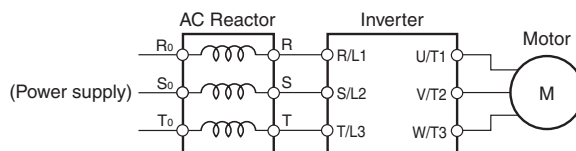
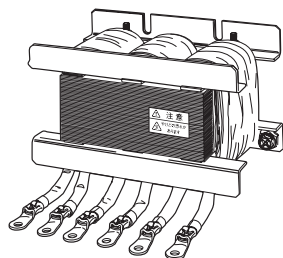


Fig. 2



**AC Reactor 3G3AX-AL□□□□**

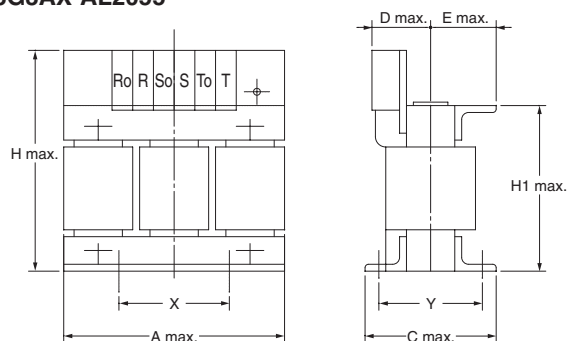
Connect the AC Reactor if the capacity of the power supply is much larger than that of the Inverter or the power factor is required to be improved.

**●Connection Example****●Specifications**

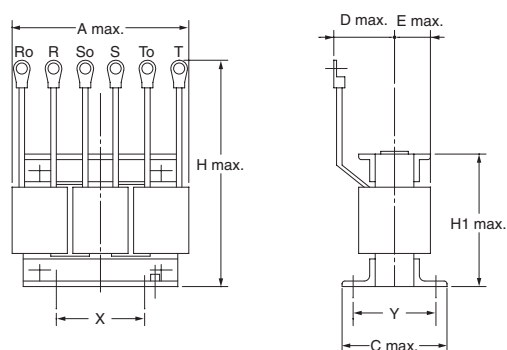
| Power supply       | Model        | Applicable Inverter capacity (kw) | Dimensions (mm) |     |    |    |     |     |    |    | Weight (kg) |
|--------------------|--------------|-----------------------------------|-----------------|-----|----|----|-----|-----|----|----|-------------|
|                    |              |                                   | A               | C   | D  | E  | H   | H1  | X  | Y  |             |
| 3-phase<br>200 VAC | 3G3AX-AL2025 | 0.2 to 1.5                        | 130             | 82  | 60 | 40 | 150 | 92  | 50 | 67 | 2.8         |
|                    | 3G3AX-AL2055 | 2.2, 3.7                          | 140             | 98  | 60 | 40 | 150 | 92  | 50 | 75 | 4.0         |
|                    | 3G3AX-AL2110 | 5.5, 7.5                          | 160             | 103 | 70 | 55 | 170 | 106 | 60 | 80 | 5.0         |
| 3-phase<br>400 VAC | 3G3AX-AL4025 | 0.4 to 1.5                        | 130             | 82  | 60 | 40 | 150 | 92  | 50 | 67 | 2.7         |
|                    | 3G3AX-AL4055 | 2.2, 3.7                          | 130             | 98  | 60 | 40 | 150 | 92  | 50 | 75 | 4.0         |
|                    | 3G3AX-AL4110 | 5.5, 7.5                          | 160             | 116 | 75 | 55 | 170 | 106 | 60 | 98 | 6.0         |

**●Dimensions (Unit: mm)**

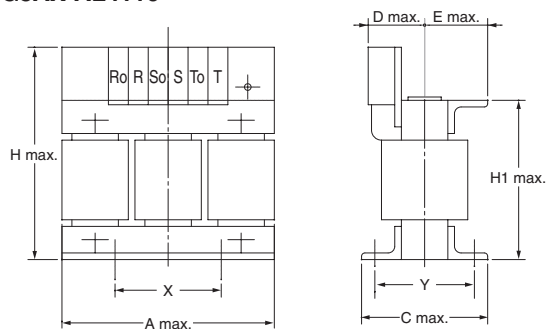
**3G3AX-AL2025  
3G3AX-AL2055**



**3G3AX-AL2110**

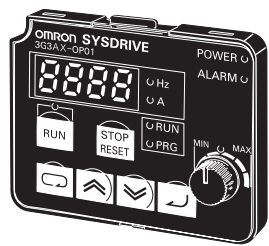


**3G3AX-AL4025/3G3AX-AL4055  
3G3AX-AL4110**



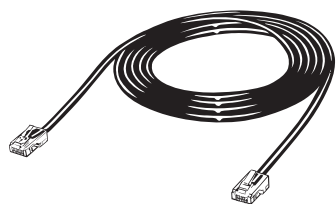
**Digital Operator 3G3AX-OP01**

Used to set parameters, perform various monitoring, and start and stop the Inverter.



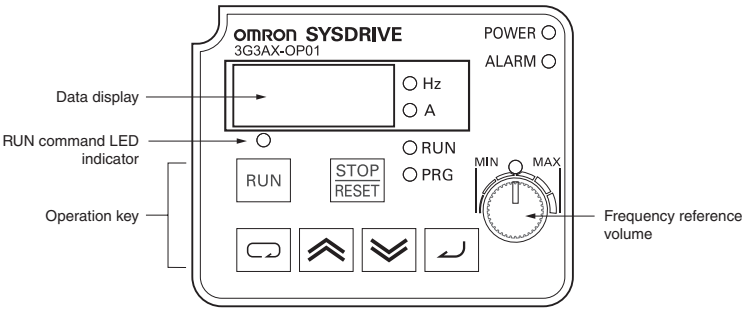
●Cables  
**3G3AX-OPCN**

Used to install the Digital Operator away from the Inverter.



3G3AX-OPCN1 (Cable length: 1 m)  
3G3AX-OPCN3 (Cable length: 3 m)

●Dimensions (Unit: mm)



|                     |  |
|---------------------|--|
| External Dimensions | Height (55 mm) X Width (70 mm) X Depth (10 mm) |
|---------------------|--|

---

# Ordering Information

---

|  |    |
|--|----|
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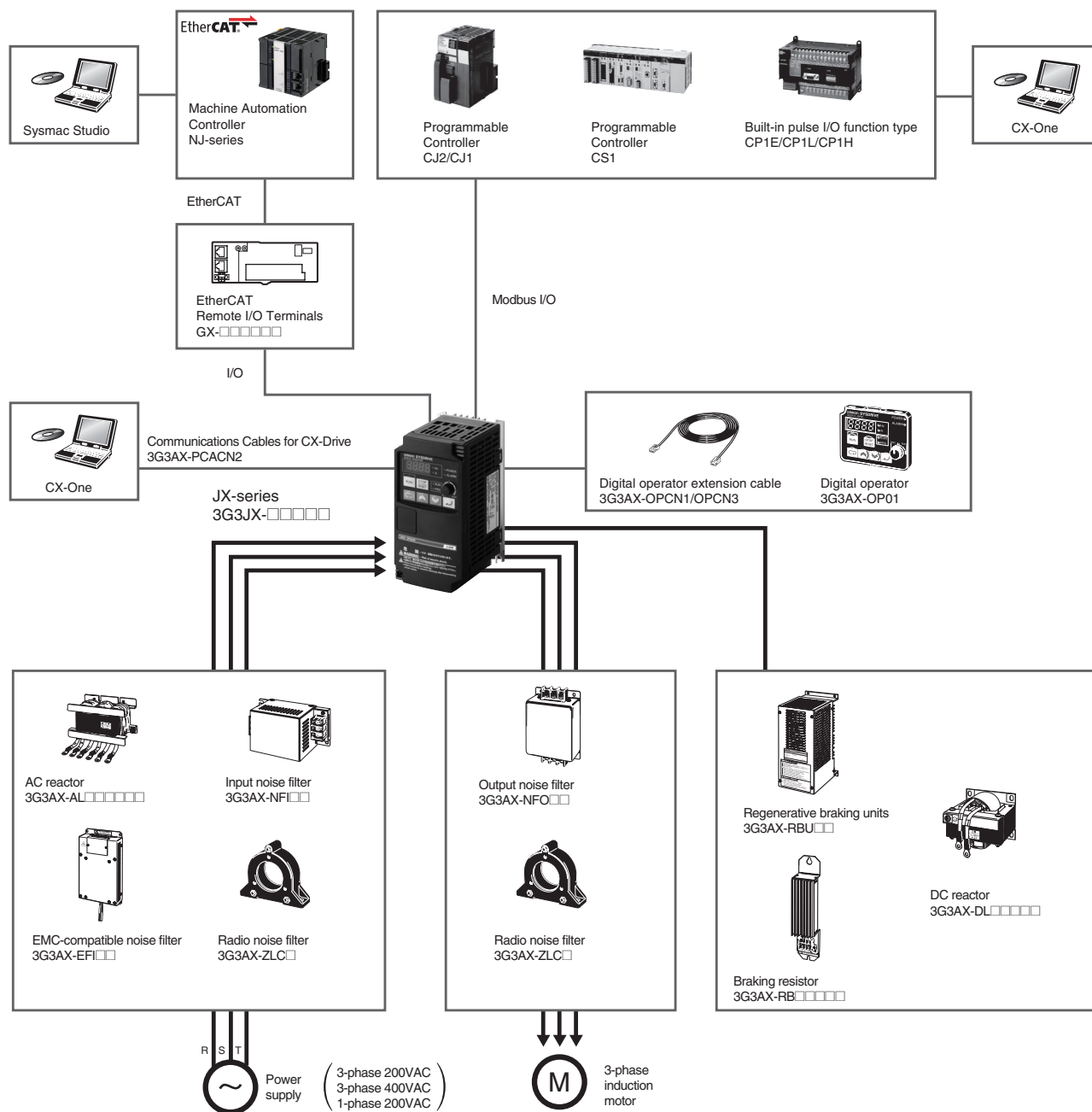
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# Simple, Compact Inverters JX-Series

## System Configuration



## Interpreting Model Numbers

**3G3JX-A**        

3G3JX

Voltage Class

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

Maximum Motor Capacity

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

## Ordering Information

### 3G3JX Inverter Models

| Rated voltage      | Enclosure rating | Max. applicable motor capacity | Model       |
|--------------------|------------------|--------------------------------|-------------|
| 3-phase 200 V AC   | IP20             | 0.2kW                          | 3G3JX-A2002 |
|                    |                  | 0.4kW                          | 3G3JX-A2004 |
|                    |                  | 0.75kW                         | 3G3JX-A2007 |
|                    |                  | 1.5kW                          | 3G3JX-A2015 |
|                    |                  | 2.2kW                          | 3G3JX-A2022 |
|                    |                  | 3.7kW                          | 3G3JX-A2037 |
|                    |                  | 5.5kW                          | 3G3JX-A2055 |
|                    |                  | 7.5kW                          | 3G3JX-A2075 |
| 1/3-phase 200 V AC |                  | 0.2kW                          | 3G3JX-AE002 |
|                    |                  | 0.4kW                          | 3G3JX-AE004 |
|                    |                  | 0.75kW                         | 3G3JX-AE007 |
|                    |                  | 1.5kW                          | 3G3JX-AE015 |
|                    |                  | 2.2kW                          | 3G3JX-AE022 |
| 3-phase 400 V AC   |                  | 0.4kW                          | 3G3JX-A4004 |
|                    |                  | 0.75kW                         | 3G3JX-A4007 |
|                    |                  | 1.5kW                          | 3G3JX-A4015 |
|                    |                  | 2.2kW                          | 3G3JX-A4022 |
|                    |                  | 3.7kW                          | 3G3JX-A4037 |
|                    |                  | 5.5kW                          | 3G3JX-A4055 |
|                    |                  | 7.5kW                          | 3G3JX-A4075 |

## Related Options

| Name                       | Specifications       |   | Model          |
|----------------------------|----------------------|---|----------------|
| Regenerative Braking Units | 3-phase 200 VAC      | General purpose with Braking resistor           | 3G3AX-RBU21    |
|                            |                      | High Regeneration purpose with Braking resistor | 3G3AX-RBU22    |
|                            | 3-phase 400 VAC      | General purpose with Braking resistor           | 3G3AX-RBU41    |
| Braking Resistor           | Compact type         | Resistor 120 W, 180 Ω                           | 3G3AX-RBA1201  |
|                            |                      | Resistor 120 W, 100 Ω                           | 3G3AX-RBA1202  |
|                            |                      | Resistor 120 W, 50 Ω                            | 3G3AX-RBA1203  |
|                            |                      | Resistor 120 W, 35 Ω                            | 3G3AX-RBA1204  |
|                            | Standard type        | Resistor 200 W, 180 Ω                           | 3G3AX-RBB2001  |
|                            |                      | Resistor 200 W, 100 Ω                           | 3G3AX-RBB2002  |
|                            |                      | Resistor 300 W, 50 Ω                            | 3G3AX-RBB3001  |
|                            |                      | Resistor 400 W, 35 Ω                            | 3G3AX-RBB4001  |
|                            | Medium capacity type | Resistor 400 W, 50 Ω                            | 3G3AX-RBC4001  |
|                            |                      | Resistor 600 W, 35 Ω                            | 3G3AX-RBC6001  |
|                            |                      | Resistor 1200 W, 17 Ω                           | 3G3AX-RBC12001 |

## Simple, Compact Inverters JX-Series

### Regenerative Braking Unit and Braking Resistor Combination

(1) Inverter specifications (choose voltage, capacity, and model)

The content noted in the table assumes the case of combining one Inverter and one motor of the same capacity.

(2) Select the %ED.

Use the %ED that is equivalent to or lower than the value shown.

(3) This shows the model and number of regenerative braking units and braking resistors.

(4) This provides a summary of the connection configuration of the regenerative braking unit and braking resistor.

Refer to the "Connection configuration"

(5) The specified conditions contain restrictions. Make sure there are not any issues

| Inverter       |   |                            | Usage conditions |   | Regenerative braking unit |                         | Braking resistor  |                         | Con-<br>nec-<br>tion<br>con-<br>figu-<br>ration | Restrictions  |  |
|----------------|---|----------------------------|------------------|---|---------------------------|-------------------------|-------------------|-------------------------|---|---|--|
| Voltage        | Max.<br>applicable<br>motor<br>capacity<br>(kW) | Mode                       | %ED *1<br>(%)    | Approx-<br>imate<br>braking<br>torque<br>(% *2) | Model                     | Num-<br>ber of<br>units | Model             | Num-<br>ber of<br>units |   | Allow-<br>able con-<br>tinuous<br>braking<br>time (s) | Min. con-<br>nectable<br>resis-<br>tance (Ω) |
| 200-V<br>Class | 0.2   | 3G3JX-A2002<br>3G3JX-AE002 | 3.0%             | 220%  | 3G3AX-RBU21               | 1                       | Built-in Inverter | ---                     | 10  | 10  | 17   |
|                |   |                            | 10.0%            | 220%  |                           | 1                       |                   |                         | 10  | 10  | 17   |
|                | 0.4   | 3G3JX-A2004<br>3G3JX-AE004 | 3.0%             | 220%  | 3G3AX-RBU21               | 1                       | Built-in Inverter | ---                     | 10  | 10  | 17   |
|                |   |                            | 10.0%            | 220%  |                           | 1                       |                   |                         | 10  | 10  | 17   |
|                | 0.75  | 3G3JX-A2007<br>3G3JX-AE007 | 3.0%             | 120%  | 3G3AX-RBU21               | 1                       | Built-in Inverter | ---                     | 10  | 10  | 17   |
|                |   |                            | 10.0%            | 120%  |                           | 1                       |                   |                         | 10  | 10  | 17   |
|                | 1.5   | 3G3JX-A2015<br>3G3JX-AE015 | 2.5%             | 110%  | 3G3AX-RBU21 *3            | 1                       | 3G3AX-RBA1202     | 1                       | 11  | 12  | 17   |
|                |   |                            | 10.0%            | 215%  |                           | 1                       | 3G3AX-RBC4001     | 1                       | 11  | 10  | 17   |
|                | 2.2   | 3G3JX-A2022<br>3G3JX-AE022 | 3.0%             | 150%  | 3G3AX-RBU21 *3            | 1                       | 3G3AX-RBB3001     | 1                       | 11  | 30  | 17   |
|                |   |                            | 10.0%            | 150%  |                           | 1                       | 3G3AX-RBC4001     | 1                       | 11  | 10  | 17   |
|                | 3.7   | 3G3JX-A2037                | 3.0%             | 125%  | 3G3AX-RBU21 *3            | 1                       | 3G3AX-RBB4001     | 1                       | 11  | 20  | 17   |
|                |   |                            | 10.0%            | 125%  |                           | 1                       | 3G3AX-RBC6001     | 1                       | 11  | 10  | 17   |
|                | 5.5   | 3G3JX-A2055                | 3.0%             | 120%  | 3G3AX-RBU21 *3            | 1                       | 3G3AX-RBB3001     | 2                       | 12  | 30  | 17   |
|                |   |                            | 10.0%            | 120%  |                           | 1                       | 3G3AX-RBC4001     | 2                       | 12  | 10  | 17   |
|                | 7.5   | 3G3JX-A2075                | 3.0%             | 125%  | 3G3AX-RBU21 *3            | 1                       | 3G3AX-RBB4001     | 2                       | 12  | 20  | 17   |
|                |   |                            | 10.0%            | 130%  |                           | 1                       | 3G3AX-RBC12001    | 1                       | 11  | 10  | 17   |
| 400-V<br>Class | 0.4   | 3G3JX-A4004                | 3.0%             | 220%  | 3G3AX-RBU41 *3            | 1                       | Built-in Inverter | ---                     | 21  | 10  | 34   |
|                |   |                            | 10.0%            | 220%  |                           | 1                       |                   |                         | 21  | 10  | 34   |
|                | 0.75  | 3G3JX-A4007                | 3.0%             | 220%  | 3G3AX-RBU41 *3            | 1                       | Built-in Inverter | ---                     | 21  | 10  | 34   |
|                |   |                            | 10.0%            | 220%  |                           | 1                       |                   |                         | 21  | 10  | 34   |
|                | 1.5   | 3G3JX-A4015                | 3.0%             | 120%  | 3G3AX-RBU41 *3            | 1                       | Built-in Inverter | ---                     | 21  | 10  | 34   |
|                |   |                            | 10.0%            | 120%  |                           | 1                       |                   |                         | 21  | 10  | 34   |
|                | 2.2   | 3G3JX-A4022                | 2.5%             | 150%  | 3G3AX-RBU41 *3            | 1                       | 3G3AX-RBA1202     | 2                       | 13  | 12  | 34   |
|                |   |                            | 10.0%            | 220%  |                           | 1                       | 3G3AX-RBC4001     | 2                       | 13  | 10  | 34   |
|                | 3.7   | 3G3JX-A4037                | 3.0%             | 175%  | 3G3AX-RBU41 *3            | 1                       | 3G3AX-RBB3001     | 2                       | 13  | 30  | 34   |
|                |   |                            | 10.0%            | 175%  |                           | 1                       | 3G3AX-RBC4001     | 2                       | 13  | 10  | 34   |
|                | 5.5   | 3G3JX-A4055                | 3.0%             | 120%  | 3G3AX-RBU41 *3            | 1                       | 3G3AX-RBB3001     | 2                       | 13  | 30  | 34   |
|                |   |                            | 10.0%            | 120%  |                           | 1                       | 3G3AX-RBC4001     | 2                       | 13  | 10  | 34   |
|                | 7.5   | 3G3JX-A4075                | 3.0%             | 125%  | 3G3AX-RBU41 *3            | 1                       | 3G3AX-RBB4001     | 2                       | 13  | 20  | 34   |
|                |   |                            | 10.0%            | 125%  |                           | 1                       | 3G3AX-RBC6001     | 2                       | 13  | 10  | 34   |

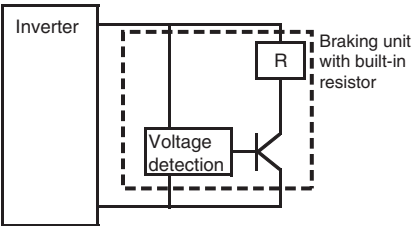
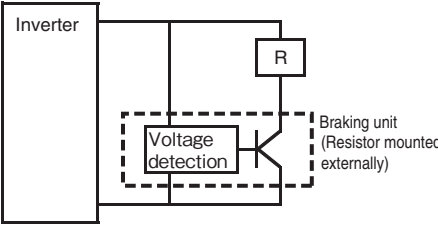
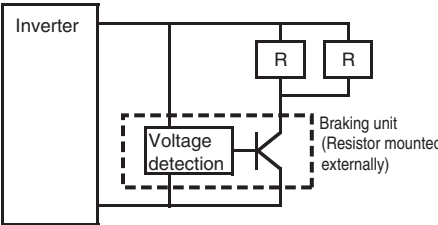
\*1 %ED shows the ratio that can be used for braking (deceleration time) among operating time of one task period.

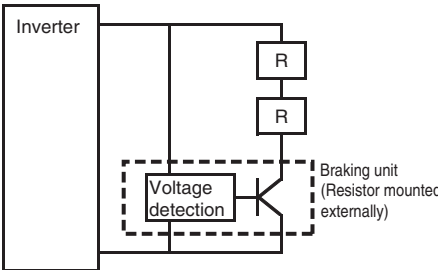
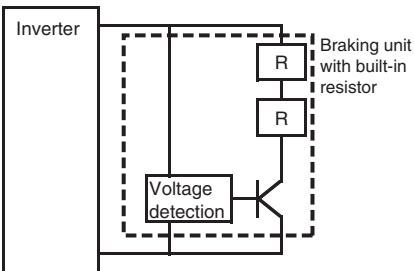
\*2 Approximate braking torque is shown in % of rating torque of the motor (100%).

\*3 Please remove the built-in resistor.

**Note:** When the torque more than the approximate braking torque is required or it is necessary to use more frequently than %ED, the selection including the load calculation instead of the combination list is required.

Connection configuration

| TYPE |  |  |
|------|--|--|
| 10   | Braking unit with built-in resistor        |   |
| 11   | One braking unit One resistor              |   |
| 12   | One braking unit Two resistors in parallel |  |

| TYPE |  |   |
|------|--|---|
| 13   | One braking unit Two resistors in series           |  |
| 21   | Braking unit with two built-in resistors in series |  |

## Simple, Compact Inverters JX-Series

| Name                        | Specifications of Inverter |                          | Model                      |
|-----------------------------|----------------------------|--------------------------|----------------------------|
|                             | Voltage class              | Applicable capacity (kW) |                            |
| Radio Noise Filter          | 3-phase 200 VAC            | 0.2                      | 3G3AX-ZCL2                 |
|                             |                            | 0.4                      |                            |
|                             |                            | 0.75                     |                            |
|                             |                            | 1.1                      |                            |
|                             |                            | 2.2                      |                            |
|                             |                            | 3                        |                            |
|                             |                            | 5.5                      |                            |
|                             |                            | 7.5                      | 3G3AX-ZCL1<br>(3G3AX-ZCL2) |
|                             | 1/3-phase 200 VAC          | 0.2                      | 3G3AX-ZCL2                 |
|                             |                            | 0.4                      |                            |
|                             |                            | 0.55                     |                            |
|                             |                            | 1.1                      |                            |
|                             | 3-phase 400 VAC            | 2.2                      | 3G3AX-ZCL2<br>(3G3AX-ZCL1) |
|                             |                            | 0.75                     |                            |
|                             |                            | 1.5                      |                            |
|                             |                            | 2.2                      |                            |
|                             |                            | 3                        |                            |
|                             |                            | 4                        |                            |
| Input Noise Filter          | 3-phase 200 VAC            | 5.5                      | 3G3AX-ZCL2<br>(3G3AX-ZCL1) |
|                             |                            | 7.5                      |                            |
|                             |                            | 0.2 to 0.75              |                            |
|                             |                            | 1.5                      |                            |
|                             |                            | 2.2, 3.7                 |                            |
|                             | 3-phase 400 VAC            | 5.5                      | 3G3AX-NFI21                |
|                             |                            | 7.5                      | 3G3AX-NFI22                |
|                             |                            | 0.4 to 2.2               | 3G3AX-NFI23                |
| EMC-compatible Noise Filter | 1-phase 200 VAC            | 3.7                      | 3G3AX-NFI24                |
|                             |                            | 5.5, 7.5                 | 3G3AX-NFI25                |
|                             |                            | 0.4 to 2.2               | 3G3AX-NFI41                |
|                             | 3-phase 200 VAC            | 3.7                      | 3G3AX-NFI42                |
|                             |                            | 5.5, 7.5                 | 3G3AX-NFI43                |
|                             |                            | 0.2, 0.4                 | 3G3AX-NFI44                |
|                             |                            | 0.75                     | 3G3AX-NFI45                |
|                             |                            | 1.5, 2.2                 | 3G3AX-EFI21                |
|                             |                            | 3.7                      | 3G3AX-EFI22                |
|                             |                            | 5.5, 7.5                 | 3G3AX-EFI23                |
|                             |                            | 0.4, 0.75                | 3G3AX-EFI24                |
|                             |                            | 1.5                      | 3G3AX-EFI25                |
|                             |                            | 2.2, 3.7                 | 3G3AX-EFI41                |
|                             | 3-phase 200/400 VAC        | 5.5                      | 3G3AX-EFI42                |
|                             |                            | 7.5                      | 3G3AX-EFI43                |
|                             |                            | 0.4 to 1.5               | 3G3AX-EFI44                |
|                             |                            | 2.2, 3.7                 | 3G3AX-EFI45                |
|                             |                            | 5.5, 7.5                 | 3G3AX-EFI46                |
|                             |                            | 0.4 to 2.2               | 3G3AX-EFI47                |
|                             |                            | 3.7                      | 3G3AX-EFI48                |
|                             |                            | 5.5, 7.5                 | 3G3AX-EFI49                |

| Name                | Specifications of Inverter |  | Model        |
|---------------------|----------------------------|--|--------------|
|                     | Voltage class              | Applicable capacity (kW)   |              |
| Output Noise Filter | 3-phase 400 VAC            | Applicable motor<br>200-V Class: to 0.75<br>400-V Class: to 2.2    | 3G3AX-NFO01  |
|                     |                            | Applicable motor<br>200-V Class: 1.5, 2.2<br>400-V Class: 3.7      | 3G3AX-NFO02  |
|                     |                            | Applicable motor<br>200-V Class: 3.7, 5.5<br>400-V Class: 5.5, 7.5 | 3G3AX-NFO03  |
|                     |                            | Applicable motor<br>200-V Class: 7.5                               | 3G3AX-NFO04  |
| DC Reactor          | 1/3-phase 200 VAC          | 0.2  | 3G3AX-DL2002 |
|                     |                            | 0.4  | 3G3AX-DL2004 |
|                     |                            | 0.75   | 3G3AX-DL2007 |
|                     |                            | 1.5  | 3G3AX-DL2015 |
|                     |                            | 2.2  | 3G3AX-DL2022 |
|                     |                            | 3.7  | 3G3AX-DL2037 |
|                     |                            | 5.5  | 3G3AX-DL2055 |
|                     |                            | 7.5  | 3G3AX-DL2075 |
|                     | 3-phase 400 VAC            | 0.4  | 3G3AX-DL4004 |
|                     |                            | 0.75   | 3G3AX-DL4007 |
|                     |                            | 1.5  | 3G3AX-DL4015 |
|                     |                            | 2.2  | 3G3AX-DL4022 |
|                     |                            | 3.7  | 3G3AX-DL4037 |
|                     |                            | 5.5  | 3G3AX-DL4055 |
|                     |                            | 7.5  | 3G3AX-DL4075 |
| AC Reactor          | 3-phase 200 VAC            | 0.2 to 1.5   | 3G3AX-AL2025 |
|                     |                            | 2.2, 3.7   | 3G3AX-AL2055 |
|                     |                            | 5.5, 7.5   | 3G3AX-AL2110 |
|                     | 3-phase 400 VAC            | 0.4 to 1.5   | 3G3AX-AL4025 |
|                     |                            | 2.2, 3.7   | 3G3AX-AL4055 |
|                     |                            | 5.5, 7.5   | 3G3AX-AL4110 |

## External Digital Operator

| Name             | Cable length | Model       |
|------------------|--------------|-------------|
| Digital Operator | ---          | 3G3AX-OP01  |
| Connection cable | 1m           | 3G3AX-OPCN1 |
|                  | 3m           | 3G3AX-OPCN3 |

## Software

| Name  | Specifications  | Media              |        | Model          |
|---|---|--------------------|--------|----------------|
|   |   | Number of licenses | Media  |                |
| FA Integrated Tool Package<br>CX-One Ver. 4.□ | The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components.<br>CX-One runs on following OS.<br>OS: Windows XP (Service Pack 3 or higher), Vista or 7<br><b>Note:</b> Note: Except for Windows XP 64-bit version.<br>CX-One Version.4.□ includes CX-Drive Ver.2.□.<br>For details, refer to the CX-One catalog (Cat. No.R134) | 1 license *1       | DVD *2 | CXONE-AL01D-V4 |

\*1 Multi licenses are available for the CX-One (3, 10, 30, or 50 licenses).

\*2 The CX-One is also available on CD (CXONE-AL□□C-V4).

## Communications Cable

| Name                              | Specifications                      | Model        |
|-----------------------------------|-------------------------------------|--------------|
| Communications cable for CX-Drive | USB Cable for JX and RX series (2m) | 3G3AX-PCACN2 |

# Simple, Compact Inverters JX-Series

## Overview of Inverter Selection

For detail of Inverter selection, refer to the JX series User's Manual. (Man.No.I558).

### Motor Capacity Selection

Before selecting an inverter, first the motor should be chosen. In selecting the motor, first calculate the load inertia for the applications, and then calculate the required capacity and torque.

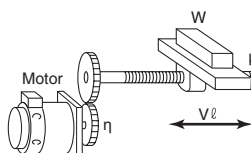
### Make a simple selection (use Formulas for the required output power)

This method of calculation helps select a motor by calculating the output (W) required by the motor to maintain its regular rotations. It does not include calculation of the effect of acceleration/deceleration. Therefore, make allowance for the calculated value to select a motor. This calculation method can be applied to applications that operate constantly such as fans, conveyers, agitators etc.

This calculation method must not be applied to the following applications:

- Those requiring instant start-up.
- Those that frequently repeat operation and stop.
- Those that have a large inertia at the power transfer part.
- Those that have an inefficient power transfer part.

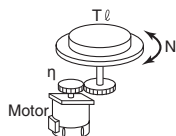
### ●For Straight-Line Operation: Normal Power PO [kW]



$$P_o = \frac{\mu \cdot W \cdot V \ell}{6120 \cdot \eta}$$

$\mu$ : Friction Coefficient  
 $W$ : Mass of Straight-Line travelling part [kg]  
 $V \ell$ : Speed of Straight-Line Travelling part [m/min]  
 $\eta$ : Decelerator (Transfer part) Efficiency

### ●For Rotating Operation: Normal Power PO [kW]



$$P_o [\text{kW}] = \frac{2\pi \cdot T \ell \cdot N \ell}{60 \cdot \eta} \times 10^{-3}$$

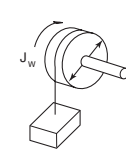
$T \ell$ : Load Torque (Load Shaft) [N·m]  
 $N \ell$ : Load Shaft Rotation Speed [r/min]  
 $\eta$ : Transfer part ( $\eta \leq 1$ )

### Detailed Selection Method (R.M.S Algorithm)

This method helps to select a motor by calculating the effective torque and maximum torque required to achieve a certain pattern of operation for the application. It selects a motor that is optimal for a particular operation pattern.

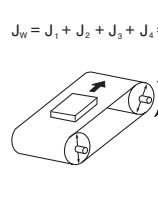
### ●Calculate the inertia with a Motor Shaft Conversion Value

Calculate inertias of all the components with the formula for inertia calculation shown below to convert them to a motor conversion value.



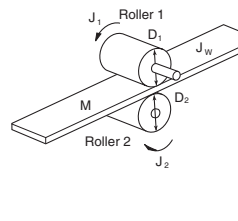
$$J_w = J_1 + J_2 = \left( \frac{M_1 \cdot D^2}{8} + \frac{M_2 \cdot D^2}{4} \right) \times 10^{-6} (\text{kg} \cdot \text{m}^2)$$

$J_w$ : Inertia (kg·m<sup>2</sup>)  
 $J_1$ : Cylinder Inertia (kg·m<sup>2</sup>)  
 $J_2$ : Inertia from Object (kg·m<sup>2</sup>)  
 $D$ : Diameter (mm)  
 $M_1$ : Mass of Cylinder (kg)  
 $M_2$ : Mass of Object (kg)



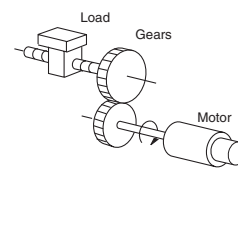
$$J_w = J_1 + J_2 + J_3 + J_4 = \left( \frac{M_1 \cdot D_1^2}{8} + \frac{M_2 \cdot D_2^2}{8} \cdot \frac{D_2^2}{D_1^2} + \frac{M_3 \cdot D_1^2}{4} + \frac{M_4 \cdot D_1^2}{4} \right) \times 10^{-6} (\text{kg} \cdot \text{m}^2)$$

$J_w$ : Inertia (kg·m<sup>2</sup>)  
 $J_1$ : Cylinder 1 Inertia (kg·m<sup>2</sup>)  
 $J_2$ : Inertia from Cylinder 2 (kg·m<sup>2</sup>)  
 $J_3$ : Inertia from Object (kg·m<sup>2</sup>)  
 $J_4$ : Inertia from Belt (kg·m<sup>2</sup>)  
 $D_1$ : Cylinder 1 Diameter (mm)  
 $D_2$ : Cylinder 2 Diameter (mm)  
 $M_1$ : Mass of Cylinder 1 (kg)  
 $M_2$ : Mass of Cylinder 2 (kg)  
 $M_3$ : Mass of Object (kg)  
 $M_4$ : Mass of Belt (kg)



$$J_w = J_1 + \left( \frac{D_1}{D_2} \right)^2 J_2 + \frac{M \cdot D_1^2}{4} \times 10^{-6} (\text{kg} \cdot \text{m}^2)$$

$J_w$ : System Inertia (kg·m<sup>2</sup>)  
 $J_1$ : Roller 1 Inertia (kg·m<sup>2</sup>)  
 $J_2$ : Roller 2 Inertia (kg·m<sup>2</sup>)  
 $D_1$ : Roller 1 Diameter (mm)  
 $D_2$ : Roller 2 Diameter (mm)  
 $M$ : Work Equivalent Mass (kg)



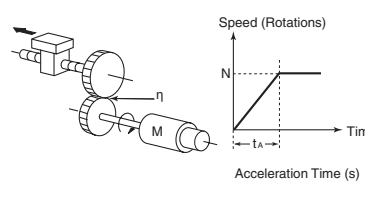
$$J_L = J_1 + G^2 (J_2 + J_w) (\text{kg} \cdot \text{m}^2)$$

$J_L$ : Load Inertia of Motor Shaft Conversion (kg·m<sup>2</sup>)  
 $J_w$ : Load Inertia (kg·m<sup>2</sup>)  
 $J_1$ : Gear Inertia on Motor Side (kg·m<sup>2</sup>)  
 $J_2$ : Gear Inertia on Load Side (kg·m<sup>2</sup>)  
 $Z_1$ : Number of Gear Teeth on Motor Side  
 $Z_2$ : Number of Gear Teeth on Load Side  
 Gear Ratio  $G = Z_1/Z_2$

### ●Calculate Motor Shaft Conversion Torque and Effective Torque

Calculate the acceleration torque from the load torque calculated from both the motor shaft conversion value and the motor rotor inertia. Then Combine this acceleration torque and the Load torque calculated from the friction force and the external force that are applied to the load. Now you get the required torque to operate a motor.

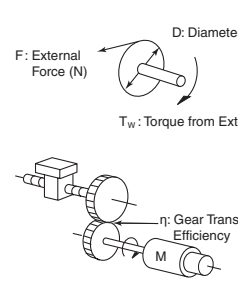
#### Acceleration Torque



$$T_A = \frac{2\pi N}{60 t_A} \left( J_M + \frac{J_L}{\eta} \right) (\text{N} \cdot \text{m})$$

$T_A$ : Acceleration/Deceleration Torque (N·m)  
 $J_L$ : Motor Shaft Conversion Load Inertia (kg·m<sup>2</sup>)  
 $J_M$ : Inertia of Motor Itself (kg·m<sup>2</sup>)  
 $\eta$ : Gear Transmission Efficiency  
 $N$ : Motor Rotation Speed (r/min)

#### Motor Shaft Conversion Load Torque (External Force/Friction)



$$T_w = F \cdot \frac{D}{2} \times 10^{-3} (\text{N} \cdot \text{m})$$

$F$ : External Force (N)  
 $D$ : Diameter (mm)  
 $T_w$ : Torque from External Force (N·m)

$$T_L = T_w \cdot \frac{G}{\eta} (\text{N} \cdot \text{m})$$

$T_L$ : Motor Shaft Conversion Load Torque (N·m)  
 $T_w$ : Load Torque (N·m)  
 $Z_1$ : Number of Gear Teeth on Motor Side  
 $Z_2$ : Number of Gear Teeth on Load Side  
 Gear (Deceleration) Ratio  $G = Z_1/Z_2$

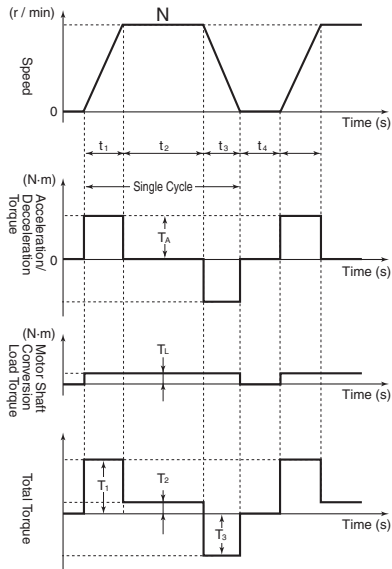


### • Calculation of Total Torque and Effective Torque

Effective Torque:  $T_{RMS}$  (N·m)

$$= \sqrt{\frac{\sum (T_i)^2 \cdot t_i}{\sum t_i}} = \sqrt{\frac{T_1^2 \cdot t_1 + T_2^2 \cdot t_2 + T_3^2 \cdot t_3 + T_4^2 \cdot t_4}{t_1 + t_2 + t_3 + t_4}}$$

Maximum Torque:  $T_{MAX} = T_1 = T_A + T_L$



**Note:** Please make use of the Servo Motor selection software, which can calculate the motor shaft conversion inertia and effective/maximum torque, as above.

### • Motor Selection

Use the formula below to calculate the motor capacity from the effective torque and the maximum torque that were obtained above. Select the larger of the two generated values as the motor capacity. Select a motor the capacity of which is larger than the calculated value and makes allowance for an error.

#### • Motor Capacity corresponding to Effective Torque

$$\text{Motor Capacity [kW]} = 1.048 \cdot N \cdot T_{RMS} \cdot 10^{-4}$$

N: Maximum Rotations (r/min)

#### • Motor Capacity capable of Providing Maximum Torque

$$\text{Motor Capacity [kW]} = 1.048 \cdot N \cdot T_{MAX} \cdot 10^{-4} / 1.5$$

N: Maximum Rotations (r/min)

### Inverter Capacity Selection

Select an inverter that can be used for the selected motor in the process of "Motor Selection".

Generally, select an inverter which fits the maximum applicable motor capacity of the selected motor.

After selecting an inverter, check if it meets with all of the following conditions. If it does not, select an inverter that has a one class larger capacity and check the feasibility again.

**Motor Rated Current ≤ Inverter Rated Output Current**  
**Maximum Time of Continuous Torque Output Time in an Application ≤ 1 minute**

- Note:**
1. Where the inverter overload capacity is "120% of Rated Output Current for 1 minute", check it for 0.8 minute.
  2. Where a 0 Hz sensor-less vector control is being used, or where torque must be maintained for 0 (r/min) rotation speed and where 150% of the rated torque is frequently required, use an inverter which is one rank larger than the one selected by the above method.

## Outline of Braking Resistor Selection

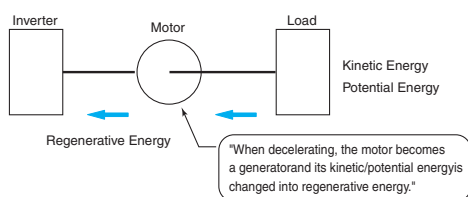
### Importance of Braking Resistor

If the regenerative energy generated in deceleration or descent in an application is too great, the main circuit of an inverter may have an increased voltage and it may be damaged.

Because the inverter usually contains the overvoltage LAD stop function, it is not actually damaged. However, the motor stops detecting an error, making a stable and continuous operation disabled. Therefore, you must discharge the regenerative energy outside of the inverter.

### ● What is Regenerative Energy?

A load connected to a motor has kinetic energy when rotating, and potential energy when it is located in a high position. When the motor decelerates, or when the load descends, the energy is returned to an inverter. It is known as regeneration, and the energy generated by the phenomenon is known as regenerative energy.



### ● Preventing Breaking Resistance

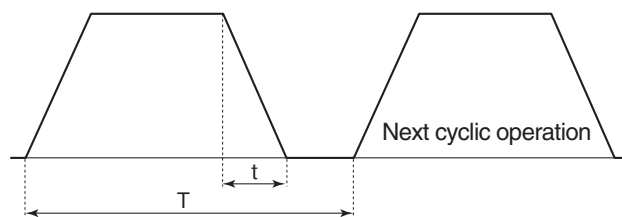
The following are methods to prevent the connection of braking resistance.

These methods will make the deceleration time increase, so check if it will not cause problems.

- Enable the deceleration stall prevention (enabled in factory settings) (It will automatically increase deceleration time not to cause an overvoltage to stop the motor).
- Set a longer deceleration time. (Cause the regenerative energy to decrease per unit of time.)
- Disable Free-Run. (Prevent the regenerative energy from returning to an inverter.)

## Make a Simple Selection for Braking Resistors

It can be a simple selecting method by using the ratio of time in which regenerative energy is produced in a normal operating pattern. Calculate the usage ratio from the following operating pattern.



$$\text{Usage Rate} = t/T \times 100 (\% \text{ ED})$$

t : Deceleration Time (Regenerative Time)

T : Single Cycle Operation Time

%ED is the unit used for a usage rate.

The usage rate is used as the ratio of deceleration time (regenerative operation time) to simplify the selection of the braking options.

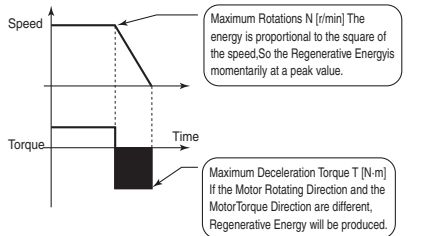
### ● For Models without a Built-in Braking Circuit (3G3JX)

Select the regenerative braking unit and the braking resistor. Refer to the regenerative braking unit and braking resistor lists described in the User's manual and catalog, and connect them according to your Inverter.

## Make a Simple Selection of Braking Resistor

When the usage ratio for the braking resistor selected on the previous page exceeds 10% ED, or when an extremely large braking torque is required, use the method below to calculate a regenerative energy and make your selection.

### ● Calculation of Required Braking Resistor



$$\text{Braking Resistance Resistor: } R \leq \frac{V^2}{1.048 \times (T - 0.2 \times T_m) \times N \times 10^{-1}}$$

V: 200V class inverter 385 [V]

400V class inverter 760 [V]

T: Maximum Braking Torque [N·m]

$T_m$ : Motor Rated Torque [N·m]

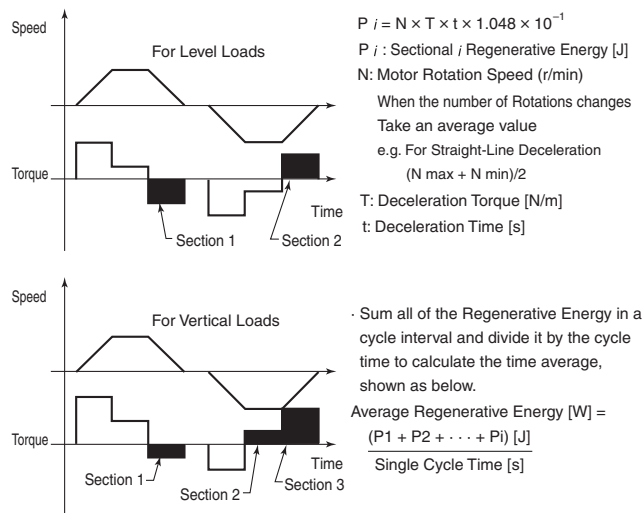
N: Maximum Rotation Speed [r/min]

**Note:** Calculate a braking torque using the above "Motor Capacity Selection".

### ● Calculation of Average Regenerative Energy

Regenerative Energy is produced when the motor rotation direction and the torque direction are opposite.

Use the following formula to calculate a regenerative energy per cycle interval.



**Note:** 1. Forward rotation direction is forward for the speed, and the torque in the forward rotation direction is forward for the torque.  
2. Calculate a braking torque using the above "Motor Capacity Selection".

### ● Braking Resistor Selection

Select a Braking Resistor from the required braking resistance and average regenerative energy on the left.

- Required Braking Resistance  $\geq$  Resistance of Braking Resistor  $\geq$  Minimum Connection Resistance of Inverter or Regenerative Braking Unit
- Average Regenerative Energy  $\leq$  Permissible Power for Braking Resistor

- Note:** 1. If a resistance that has a less than the minimum connectable value is connected on an inverter or regenerative braking resistor unit, the internal braking transistor can be damaged. When the required braking resistance is less than the minimum connectable resistance, change the inverter or regenerative energy braking to the one having a larger capacity and a minimum connection resistance less than the required braking resistance.
2. Two or more regenerative braking units can be operated in parallel. Refer to the following formula to know the braking resistance value in such a case.  
Braking Resistance( $\Omega$ ) = (Required Braking Resistance as calculated above)  $\times$  (No. of Units in use)
3. Do not use the above formula to select a generative braking resistance value. 150W does not reflect a permissible power capacity, but the maximum rated power per unit of resistance. The actual permissible power varies according to a resistance.

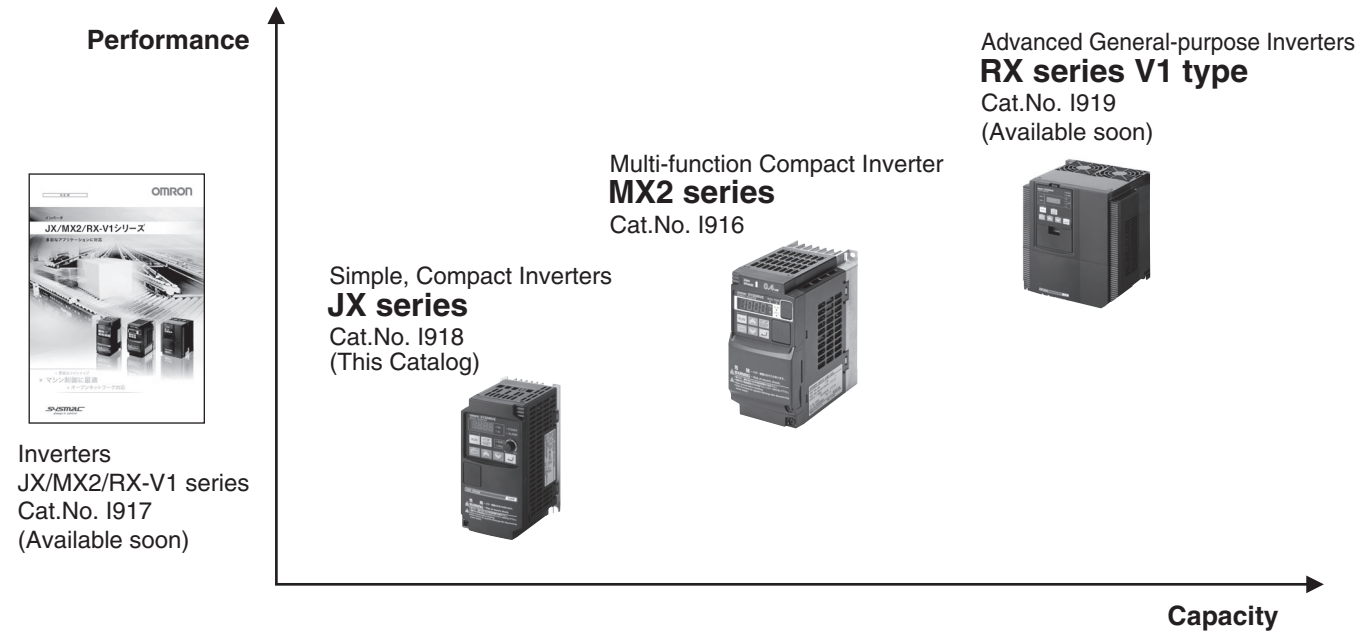
# Simple, Compact Inverters JX-Series

## Related Manuals

| Man.No. | Model                           | Manual   |
|---------|---------------------------------|--|
| I558    | 3G3JX                           | JX series Compact Simplified Inverters User's Manual |
| W463    | CXONE-AL□□C/D-V□                | CX-One FA Integrated Tool Package Setup Manual       |
| W453    | CXONE-AL□□C/D-V□<br>WS02-DRVC01 | CX-Drive OPERATION MANUAL                            |

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Choose the Inverter that meets your needs -- From a wide range of simple to advanced models.



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