

High-function General-purpose Inverter

RX2 series (3G3RX2-□□□□□)

Instruction Manual

Thank you for purchasing this OMRON Product. Please read this Instruction Manual and *User's Manual*, and thoroughly familiarize yourself with the functions and characteristics of the product before use. Be sure you are using the most recent version of the *User's Manual*. Please retain this Instruction Manual and the *User's Manual* for future reference, and be sure they are delivered to the final user of the Inverter Drive.

User's Manual	I620-E1
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Warranty, Limitations of Liability

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Change in Specifications

Product specifications and accessories may be changed at any time based on improvements and other reasons. It is our practice to change part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.







Errors and Omissions

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Safety Precautions

 WARNING	Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally, there may be significant property damage.
 CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

● Explanation of Symbols

	<p>⊘ This symbol indicates a prohibited item (an item you must not do).</p> <p>The specific instruction is indicated using an illustration or text inside or near ⊘ . The symbol shown to the left indicates "disassembly prohibited."</p>
	<p>△ This symbol indicates danger and caution.</p> <p>The specific instruction is indicated using an illustration or text inside or near △ . The symbol shown to the left indicates "beware of electric shock."</p>
	<p>△ This symbol indicates danger and caution.</p> <p>The specific instruction is indicated using an illustration or text inside or near △ . The symbol shown to the left indicates "non-specific general danger."</p>
	<p>△ This symbol indicates caution (including warning).</p> <p>The specific instruction is indicated using an illustration or text inside or near △ . The symbol shown to the left indicates "risk of hot surface."</p>
	<p>● This symbol indicates a compulsory item (an item that must be done).</p> <p>The specific instruction is indicated using an illustration or text inside or near ● . The symbol shown to the left indicates "general compulsory items."</p>
	<p>● This symbol indicates a compulsory item (an item that must be done).</p> <p>The specific instruction is indicated using an illustration or text inside or near ● . The symbol shown to the left indicates "grounding required."</p>

⚠ WARNING

Turn off the power supply and implement wiring correctly.
Not doing so may result in a serious injury due to an electric shock.



Wiring work must be carried out only by qualified personnel.
Not doing so may result in a serious injury due to an electric shock.



Do not change wiring and slide switches (SW1 to SW6), put on or take off Operator and optional devices, replace cooling fans while the input power is being supplied. Doing so may result in a serious injury due to an electric shock.



Be sure to ground the unit. Not doing so may result in a serious injury due to an electric shock or fire.
(200-V class: type-D grounding, 400-V class: type-C grounding)



Do not remove the terminal cover during the power supply and 15 minutes*1*2 after the power shut off. Doing so may result in a serious injury due to an electric shock.



Do not operate the Operator or switches with wet hands.
Doing so may result in a serious injury due to an electric shock.



Inspection of the inverter must be conducted after the power supply was turned off. Not doing so may result in a serious injury due to an electric shock.



The main power supply is not necessarily shut off even if the emergency shut off function is activated.

Do not touch the inverter fins, braking resistors and the motor, which become too hot during the power supply and for some time after the power shut off. Doing so may result in a burn.



*1. 10 minutes: For models 3G3RX2-A2004 to A2220 and 3G3RX2-A4007 to A4220

*2. 15 minutes: For models 3G3RX2-A2300 to A2550 and 3G3RX2-A4300 to B413K

CAUTION

Be sure to confirm safety before conducting maintenance, inspection or parts replacement.



Do not connect resistors to the terminals (PD/+1, P/+, N/-) directly. Doing so might result in a small-scale fire, heat generation, or damage to the unit.



Install a stop motion device to ensure safety. Not doing so might result in a minor injury.
(A holding brake is not a stop motion device designed to ensure safety.)



Be sure to use a specified type of braking resistor/regenerative braking unit. In case of a braking resistor, install a thermal relay that monitors the temperature of the resistor. Not doing so might result in a moderate burn due to the heat generated in the braking resistor/regenerative braking unit. Configure a sequence that enables the inverter power to turn off when unusual over eating is detected in the braking resistor/regenerative braking unit.



The inverter has high voltage parts inside which, if short-circuited, might cause damage to itself or other property. Place covers on the openings or take other precautions to make sure that no metal objects such as cutting bits or lead wire scraps go inside when installing and wiring.



Take safety precautions such as setting up a molded-case circuit breaker (MCCB) that matches the inverter capacity on the power supply side. Not doing so might result in damage to property due to the short circuit of the load.



Do not dismantle, repair or modify the product.
Doing so may result in an injury.



If a parameter is set incorrectly when starting up, adjusting, maintaining, or replacing, an unexpected operation may occur.



If the DriveProgramming stops during multi-function output, the output status is held. Take safety precautions such as stopping peripheral devices.



Precautions for Safe Use

Installation and Storage

Do not store or use the product in the following places.

- Locations subject to direct sunlight.
- Locations subject to ambient temperature exceeding the specifications.
- Locations subject to relative humidity exceeding the specifications.
- Locations subject to condensation due to severe temperature fluctuations.
- Locations subject to corrosive or flammable gases.
- Locations subject to exposure to combustibles.
- Locations subject to dust (especially iron dust) or salts.
- Locations subject to exposure to water, oil, or chemicals.
- Locations subject to shock or vibration.

Transportation, Installation, and Wiring

- Do not drop or apply strong impact on the product. Doing so may result in damaged parts or malfunction.
- Do not hold by the front cover and terminal cover, but hold by the fins during transportation.
- Confirm that the rated input voltage of the inverter is the same as AC power supply voltage.
- Do not connect an AC power supply voltage to the control input/output terminals. Doing so may result in damage to the product.
- Be sure to tighten the screws on the terminal block securely. Wiring work must be done after installing the unit body.
- Do not connect any load other than a three-phase inductive motor to the U, V, and W output terminals.
- Take sufficient shielding measures when using the product in the following locations. Not doing so may result in damage to the product.
 - Locations subject to static electricity or other forms of noise.
 - Locations subject to strong magnetic fields.
 - Locations close to power lines.
- When using DriveProgramming, confirm that the program data is downloaded normally before starting operation.

Operation and Adjustment

- Be sure to confirm the permissible range of motors and machines before operation because the inverter speed can be changed easily from low to high.
- Provide a separate holding brake if necessary.
- If the clock command is used in DriveProgramming, an unexpected operation may occur due to weak battery. Take measures such as detecting a weak battery by [E042] RTC Error and stopping the inverter or programs. When the LCD Operator is removed or disconnected, DriveProgramming is in a waiting status by the clock command.
- Be sure to confirm the RUN signal is turned off before resetting the alarm because the machine may abruptly start.
- Do not come close to the machine when you enable "restart" setting that results in automatic start after a deceleration stop, (bA-30, bb-20, bb-21) the machine may abruptly start after the power is turned on.
- Provide a separate emergency stop switch because the STOP Key on the Operator is valid only when function settings are performed.
- When checking a signal during the power supply and the voltage is erroneously applied to the control input terminals, the motor may start abruptly. Be sure to confirm safety before checking a signal.
- Check whether the motor rotation direction is correct and unusual sound or vibration occurs during operation.

Maintenance and Inspection

- The capacitor service life is influenced by the ambient temperature. Refer to "Smoothing Capacitor Life Curve" described in the manual. When a capacitor reaches the end of its service life and does not work as the product, you need to replace the capacitor.
- When disposing of LCD operators and wasted batteries, follow the applicable ordinances of your local government. When disposing of the battery, insulate it using tape.



廢電池請回收

The following display must be indicated when products using lithium primary batteries (with more than 6 ppb of perchlorate) are transported to or through the State of California, USA.

Perchlorate Material - special handling may apply.
See www.dtsc.ca.gov/hazardouswaste/perchlorate

Label or mark the above display on the exterior of all outer shipping packages of your products when exporting your products which the lithium primary batteries (with more than 6 ppb of perchlorate) are installed to the State of California, USA.

- Do not short + and -, charge, disassemble, heat, put into the fire, or apply strong impact on the battery. The battery may leak, explode, produce heat or fire. Never use the battery which was applied strong impact due to such as fall on the floor, it may leak.
- UL standards establish that the battery shall be replaced by an expert engineer. The expert engineer must be in charge of the replacement and also replace the battery according to the method described in this manual.
- When the display of LCD Operator can not be recognized due to the service life, replace the LCD Operator.

Precautions for Correct Use

Installation

Mount the product vertically on a wall with the product's longer sides upright.
The material of the wall must be nonflammable such as a metal plate.

Installation and Wiring

- Confirm that the power voltage for the encoder is the same as the rated voltage (+12V DC or +5V DC) of the product.

Restart Selection Function

- Do not come close to the machine when using Instantaneous power failure/ under-voltage trip (bb-24) or over-current (bb-28) because the machine may abruptly start after the alarm cleared.

Maintenance and Parts Replacement

- Generally speaking, inverters contain components and will operate properly only when each component operates normally. Some of the electrical components require maintenance depending on application conditions. Periodic inspection and replacement are necessary to ensure proper long-term operation of Inverters.
- When a cooling fan reaches the end of its service life, replace it.

Product Disposal

Comply with the local ordinance and regulations when disposing of the product.



Dispose of in accordance with WEEE Directive

Nomenclature

3 G 3 R X2 - A 2 0 5 5

Maximum applicable motor capacity (ND)

004	0.4 kW
007	0.75 kW
015	1.5 kW
022	2.2 kW
037	3.7 kW
055	5.5 kW
075	7.5 kW
110	11 kW
150	15 kW
185	18.5 kW
220	22 kW
300	30 kW
370	37 kW
450	45 kW
550	55 kW
750	75 kW
900	90 kW
11K	110 kW
13K	132 kW

Voltage class

2	3-phase 200 VAC (200-V class)
4	3-phase 400 VAC (400-V class)

Enclosure rating

A	IP20*/UL open type
B	IP00/UL open type

* Based on self declaration.

Inverter Specifications

■ Inverter Specifications

● 200V Class Specifications

3G3RX2-A2□□□□		A2004	A2007	A2015	A2022	A2037	A2055	A2075	A2110	A2150	A2185	A2220	A2300	A2370	A2450	A2550	
Applicable motor (4-pole) capacity (kW)	VLD	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	
	LD	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	
	ND	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	
Rated output current (A)	VLD	4.4	8.0	10.4	15.6	22.8	33.0	46.0	60.0	80.0	93.0	124	153	185	229	295	
	LD	3.7	6.3	9.4	12.0	19.6	30.0	40.0	56.0	73.0	85.0	113	140	169	210	270	
	ND	3.2	5.0	8.0	11.0	17.5	25.0	32.0	46.0	64.0	76.0	95.0	122	146	182	220	
Overload current rating	VLD	110% 60sec / 120% 3sec															
	LD	120% 60sec / 150% 3sec															
	ND	150% 60sec / 200% 3sec															
Output	Rated output voltage	3-phase (3-wire) 200 to 240V (depending on receiving voltage)															
Rated capacity (kVA)	200V	VLD	1.5	2.8	3.6	5.4	7.9	11.4	15.9	20.8	27.7	32.2	43.0	53.0	64.1	79.3	102.2
		LD	1.3	2.2	3.3	4.2	6.8	10.4	13.9	19.4	25.3	29.4	39.1	48.5	58.5	72.7	93.5
		ND	1.1	1.7	2.8	3.8	6.1	8.7	11.1	15.9	22.2	26.3	32.9	42.3	50.6	63.0	76.2
	240V	VLD	1.8	3.3	4.3	6.5	9.5	13.7	19.1	24.9	33.3	38.7	51.5	63.6	76.9	95.2	122.6
		LD	1.5	2.6	3.9	5.0	8.1	12.5	16.6	23.3	30.3	35.3	47.0	58.2	70.3	87.3	112.2
		ND	1.3	2.1	3.3	4.6	7.3	10.4	13.3	19.1	26.6	31.6	39.5	50.7	60.7	75.7	91.5
Input	Rated input current (A) *1	VLD	5.2	9.5	12.4	18.6	27.1	39.3	54.8	71.4	95.2	110.7	147.6	182.1	220.2	272.6	351.2
		LD	4.4	7.5	11.2	14.3	23.3	35.7	47.6	66.7	86.9	101.2	134.5	166.7	201.2	250.0	321.4
		ND	3.8	6.0	9.5	13.1	20.8	29.8	38.1	54.8	76.2	90.5	113.1	145.2	173.8	216.7	261.9
	Rated input AC voltage	Control power supply: Power supply single phase 200 to 240V/allowable variation range 170 to 264V, 50Hz (allowable variation range: 47.5 to 52.5Hz)/60Hz (allowable variation range: 57 to 63Hz)															
		Main circuit power supply: 3-phase (3-wire) 200 to 240V/allowable variation range 170 to 264V, 50Hz (allowable variation range: 47.5 to 52.5Hz)/60Hz (allowable variation range: 57 to 63Hz)															
	Power supply equipment capacity (kVA) *2	VLD	2.0	3.6	4.7	7.1	10.3	15.0	20.9	27.2	36.3	42.2	56.3	69.4	83.9	103.9	133.8
LD		1.7	2.9	4.3	5.4	8.9	13.6	18.1	25.4	33.1	38.6	51.3	63.5	76.7	95.3	122.5	
ND		1.5	2.3	3.6	5.0	7.9	11.3	14.5	20.9	29.0	34.5	43.1	55.3	66.2	82.6	99.8	
Carrier frequency operating range *3	VLD	0.5 to 10.0kHz															
	LD	0.5 to 12.0kHz															
	ND	0.5 to 16.0kHz															
Motor start torque *4	200%/0.3Hz																
Braking	Regenerative braking	Equipped with BRD circuit (with a discharging resistor separately installed)												Regenerative braking unit separately installed			
	Minimum resistance that can be connected (Ω)	50	50	35	35	35	16	10	10	7.5	7.5	5	---	---	---	---	
Protective construction	IP20*5 / UL open type																
Approximate mass (kg)	3		3	3	3	3	3	6	6	6	10	10	10	22	33	33	47

*1. The rated input currents shown in the table are the values when the rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.) Select peripheral devices that have enough margin with reference to these values, which are different from ones shown on the product nameplate.

*2. The power supply equipment capacities shown in the table are the values when 220V rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)

*3. The setting of rated values for carrier frequencies [bb101]/[bb201] are internally limited in accordance with the description. Also, it is recommended to set values equivalent to or above (maximum output frequency for driving ×10) Hz for the setting of carrier frequencies [bb101]/[bb201]. Also, in the case of induction motor (IM) control, for items other than those subject to V/f control, it is recommended to set carrier frequency at 2kHz or more. In the case of synchronous motor (SM)/permanent magnet motor (PMM) control, it is recommended to set carrier frequency at 8kHz or more.

*4. The value of the sensor-less vector control applied to the ND rating in the Standard motor. Torque characteristics may vary depending on the control method and the motor used.

*5. Based on self declaration.

● 400V Class Specifications

3G3RX2-□□□□		A4007	A4015	A4022	A4037	A4055	A4075	A4110	A4150	A4185	A4220	A4300	A4370	A4450	A4550	B4750	B4900	B411K	B413K		
Applicable motor (4-pole) capacity (kW)	VLD	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160		
	LD	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132	160		
	ND	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	110	132		
Rated output current (A)	VLD	4.1	5.4	8.3	12.6	17.5	25.0	31.0	40.0	47.0	62.0	77.0	93.0	116	147	176	213	252	316		
	LD	3.1	4.8	6.7	11.1	16.0	22.0	29.0	37.0	43.0	57.0	70.0	85.0	105	135	160	195	230	290		
	ND	2.5	4.0	5.5	9.2	14.8	19.0	25.0	32.0	39.0	48.0	61.0	75.0	91.0	112	150	180	217	260		
Overload current rating	VLD	110% 60sec / 120% 3sec																			
	LD	120% 60sec / 150% 3sec																			
	ND	150% 60sec / 200% 3sec																			
Output Rated output voltage	3-phase (3-wire) 380 to 500V (depending on receiving voltage)																				
	Rated capacity (kVA)	400V	VLD	2.8	3.7	5.8	8.7	12.1	17.3	21.5	27.7	32.6	43.0	53.3	64.4	80.4	101.8	121.9	147.6	174.6	218.9
			LD	2.1	3.3	4.6	7.7	11.1	15.2	20.1	25.6	29.8	39.5	48.5	58.9	72.7	93.5	110.9	135.1	159.3	200.9
ND			1.7	2.8	3.8	6.4	10.3	13.2	17.3	22.2	27.0	33.3	42.3	52.0	63.0	77.6	103.9	124.7	150.3	180.1	
Rated input current *1	500V	VLD	3.6	4.7	7.2	10.9	15.2	21.7	26.8	34.6	40.7	53.7	66.7	80.5	100.5	127.3	152.4	184.5	218.2	273.7	
		LD	2.7	4.2	5.8	9.6	13.9	19.1	25.1	32.0	37.2	49.4	60.6	73.6	90.9	116.9	138.6	168.9	199.2	251.1	
		ND	2.2	3.5	4.8	8.0	12.8	16.5	21.7	27.7	33.8	41.6	52.8	65.0	78.8	97.0	129.9	155.9	187.9	225.2	
Rated input AC voltage	Power supply equipment capacity (kVA) *2	VLD	4.9	6.4	9.9	15.0	20.8	29.8	36.9	47.6	56.0	73.8	91.7	110.7	138.1	175.0	209.5	253.6	300.0	376.2	
		LD	3.7	5.7	8.0	13.2	19.0	26.2	34.5	44.0	51.2	67.9	83.3	101.2	125.0	160.7	190.5	232.1	273.8	345.2	
		ND	3.0	4.8	6.5	11.0	17.6	22.6	29.8	38.1	46.4	57.1	72.6	89.3	108.3	133.3	178.6	214.3	258.3	309.5	
Carrier frequency range *3	Control power supply: Power supply single phase 380 to 500V (allowable variation range 323 to 550V), 50Hz (allowable variation range: 47.5 to 52.5Hz)/60Hz (allowable variation range: 57 to 63Hz)																				
	Main circuit power supply: 3-phase (3-wire) 380 to 500V (allowable variation range) 323 to 550V, 50Hz (allowable variation range: 47.5 to 52.5Hz)/60Hz (allowable variation range: 57 to 63Hz)																				
	VLD	3.7	4.9	7.5	11.4	15.9	22.7	28.1	36.3	42.6	56.3	69.9	84.4	105.2	133.4	159.7	193.2	228.6	286.7		
LD	2.8	4.4	6.1	10.1	14.5	20.0	26.3	33.6	39.0	51.7	63.5	77.1	95.3	122.5	145.2	176.9	208.7	263.1			
ND	2.3	3.6	5.0	8.3	13.4	17.2	22.7	29.0	35.4	43.5	55.3	68.0	82.6	101.6	136.1	163.3	196.9	235.9			
Motor start torque *4	200%/0.3Hz																				
	Equipped with braking resistance circuit (with a discharging resistor separately installed)																				
	Regenerative braking unit separately installed																				
Braking	Regenerative braking																				
	Minimum resistance that can be connected (Ω)	100	100	100	70	70	35	35	24	24	20	15	15	-	-	-	-	-	-		
	Protective construction	IP20*5 / UL open type															IP00 / UL open type				
Approximate mass (kg)	3	3	3	3	6	6	6	6	8.5	8.5	8.5	22	31	31	31	41	41	53	53		

- *1. The rated input currents shown in the table are the values when the rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.) Select peripheral devices that have enough margin with reference to these values, which are different from ones shown on the product nameplate.
- *2. The power supply equipment capacities shown in the table are the values when 220V rated current is output. The values vary depending on impedance on the power supply (wiring, breaker, input reactor option, etc.)
- *3. The setting of rated values for carrier frequencies [bb101]/[bb201] are internally limited in accordance with the description. Also, it is recommended to set values equivalent to or above (maximum output frequency for driving ×10 Hz) for the setting of carrier frequencies [bb101]/[bb201]. Also, in the case of induction motor (IM) control, for items other than those subject to V/f control, it is recommended to set carrier frequency at 2kHz or more. In the case of synchronous motor (SM)/permanent magnet motor (PMM) control, it is recommended to set carrier frequency at 8kHz or more.
- *4. The value of the sensor-less vector control applied to the ND rating in the Standard motor. Torque characteristics may vary depending on the control method and the motor used.
- *5. Based on self declaration.

● Common Specification

Control mode (output to the motor)		Sine wave PWM control voltage output (line sine wave modulation)		
Output frequency range *1		0.00 to 590.00Hz		
Frequency accuracy		Digital command $\pm 0.01\%$ and analog command $\pm 0.2\%$ (25°C/±10°C) against the maximum frequency		
Frequency resolution		Digital setting: 0.01Hz Analog setting: maximum frequency/4000 (A1 terminal/A2 terminal: 12bit/0 to +10V or 0 to +20mA, A3 terminal 12bit/-10 to +10V)		
Control mode (frequency/voltage calculation) *2		IM	V/f control (fixed torque/reduced torque/free), automatic boost control, cascade model sensorless vector control, 0 Hz range sensorless vector control, vector control with sensor.	
		SM/PM	Synchronous starting sensorless vector control, IVMS starting smart sensorless vector control	
Speed fluctuation *3		$\pm 0.5\%$ (during sensorless vector control)		
Acceleration or deceleration time		0.00 to 3600.00sec (linear, S-shaped, U-shaped, reverse U-shaped, EL-S shaped)		
Display monitor		Output frequency, output current, output torque, trip history, I/O terminal status, I/O power *4, P-N voltage and others described in "Chapter 13 Information Monitoring Functions".		
Starting functions		Start after DC braking, frequency collection start, frequency entrainment start, reduced voltage start, retry start		
Stopping functions		Free-run stop, DC braking after deceleration stop or terminal DC braking (braking power, operating speed adjustment)		
Stall prevention function		Overload restraining function, overcurrent suppression function, overvoltage suppression function		
Protective function *5		Overcurrent error, Motor overload error, Braking resistor Overload error, Overvoltage error, Memory error, Undervoltage error, Current detector error, CPU error, External trip error, USP error, Ground fault error, Incoming over voltage error, Instantaneous power failure error, Temperature detector error, Cooling fan rotation speed reduction temperature error, Temperature error, Input open-phase error, IGBT error, Output open-phase error, Thermistor error, Brake error, Low-speed range overload error, Controller overload error, RS485 communication error, Operator keypad disconnection error.		
Other functions		V/f free settings (7 points), Upper/lower limit frequency limiter, Frequency jump, Curve acceleration/deceleration, Manual torque boost, Energy-saving operation, Analog output adjustment function, Minimum frequency, Carrier frequency adjustment, Motor electronic thermal function (free setting is also possible), Inverter electronic thermal function, External start/end (volume/ratio), Frequency input selection, Trip retry, Restart after instantaneous stop, Output of signals, Initialization settings, PID control, Automatic deceleration at power shut-off, Brake control function, and Auto-tuning for commercial switching function (online/offline).		
	Frequency setting	Standard operator keypad	Parameter setting using arrow keys	
		External signals *6	A1/A2 terminal (when changing voltage)	Setting through input of 0 to 10VDC voltage (input impedance: 10k Ω)
			A1/A2 terminal (when changing current)	Setting through input of 0 to 20mA current (input impedance: 100 Ω)
			A3 terminal	Setting through input of -10 to +10V voltage (input impedance: 10k Ω)
			Multistage speed terminal (use of input terminal function)	15 speed
		External port	Setting via RS485 serial communication (protocol: Modbus-RTU)	
Normal rotation/reverse rotation Run/stop	Standard operator keypad	Execution with the RUN /STOP key (normal rotation/reverse rotation can be switched by setting parameters)		
	External signals	Normal rotation operation (FW)/reverse rotation (RV) (when an input terminal function is assigned) 3-wire input available (when an input terminal function is assigned)		
	External port	Setting via RS485 serial communication (protocol: Modbus-RTU (maximum: 115.2kpbs)		
Input	Input terminal function			
	11 terminals (input of pulse string is available on terminal A and B) FW (Normal rotation)/RV (Reverse rotation), CF1-4 (Multistage speed 1-4), SF1-7 (Multistage speed bit 1-7), ADD (Addition of frequency), SCHG (Switching of frequency command), STA (3-wire start)/STP (3-wire stop)/F_R (3-wire normal/reverse), AHD (Retention of analog command), FUP (Increase of speed via remote operation)/FDN (Deceleration via remote operation), UDC (Deletion of data via remote operation), F-OP (Forced command switching), SET (Second control), RS (Reset), JG (Jogging), DB (External current braking), ZCH (2-stage acceleration/deceleration), FRS (Free-run stop), EXT (External abnormality), USP (Prevention of restart after restoration of power), CS (Commercial switching), SFT (Soft-lock), BOK (Brake check), OLR (Overload restriction switching), KHC (Clearance of integrated input power), OKHC (Clearance of integrated output power), PID1 (PID1 disabled), PIDC (PID1 integration reset), PID2 (PID2 disabled), PIDC2 (PID2 integration reset), SVC1-4 (PID1 multistage target values 1-4), PRO (PID gain switching), PIO (PID output switching), SLEEP (SLEEP condition satisfied)/WAKE (WAKE condition satisfied), TL (Torque restriction enabled), TRQ1, 2 (Switching of torque limit 1,2), PPI (Switching of P/PI control), CAS (Switching of control gain), FOC (Preparatory excitation), ATR (Torque control enabled), TBS (Torque bias enabled), LAC (Cancellation of acceleration/deceleration), M1-11 (General-purpose input 1-11), PCC (Clearance of pulse counter), ECOM (Start of ECoM), PRG (Program run), HLD (Acceleration/deceleration stop), REN (Operation permission signal), PLA (Pulse string input A), and PLB (Pulse string input B)			
	Backup power supply terminal	P+/P-: DC24V input (allowable input voltage: 24V $\pm 10\%$)		
	STO input terminal	2 terminals (simultaneous input)		
	Thermistor input terminal	1 terminal (possible to switch between positive temperature coefficient/negative temperature coefficient resistance element)		

- The output frequency range depend on the control and motor used. When running the inverter exceeding 60Hz, check the maximum allowable frequency with the manufacturer of the motor.
- When the control mode is changed, unless the motor constant is appropriately configured, you cannot obtain the desired starting torque or the inverter may trip.
- The variable range of motor speed may vary depending on your system or the environment where the motor is used. Please contact us for details.
- Both the input power and output power are reference values, which are not appropriate for use in calculation of efficiency values, etc. To obtain an accurate value, use an external device.
- The IGBT error [E030] is generated by the protective function not only for short circuit protection but also when IGBT is damaged. Depending on the operating conditions of the inverter, the overcurrent error [E001] may occur, instead of the IGBT error.
- At the factory default setting, when voltage and current on A1/A2 terminal is changed using a switch, with input of voltage at 9.8V and current at 19.8mA, the maximum frequency is commanded. To change characteristics, make adjustments using the analog start/end function.

Common specifications (continued)

Output	Output terminal function	Transistor output 5 terminal, 1a contact relay 1 point, 1c contact relay 1 point	
	Relay and alarm relay (1a, 1c)	RUN (During operation), FA1-5 (Reached signal), IRDY (Operation ready completion), FWR (During normal rotation operation), RVR (During reverse rotation operation), FREF (Frequency command operator keypad), REF (Operation command operator keypad), SETM (Second control under selection), AL (Alarm signal), MJA (Severe failure signal), OTQ (Over torque) *7, IP (During instantaneous power failure), UV (Under insufficient voltage), TRQ (During torque limitation), IPS (During power failure deceleration), RNT (RUN time over), ONT (Power on time over), THM (Electronic thermal warning), THC (Electronic thermal warning), WAC (Capacitor life advance notice), WAF (Fan life advance notice), FR (Operation command signal), OHF (Cooling fin heating advance notice), LOC/LOC2 (Low-current signal), OL/OL2 (Overload advance notice), BRK (Brake release), BER (Brake abnormality), ZS (Zero-speed detection signal), OD/OD2 (PID deviation excessive), FBV/FBV2 (PID feedback comparison), NDC (Communication disconnection), Ai1Dc/Ai2Dc/Ai3Dc (Analog disconnection Ai1/Ai2/Ai3), WCA1/WCA2/WCA3 (Window comparator Ai1/Ai2/Ai3), LOG1-7 (Logical operation result 1-7), MO1-7 (General output 1-7), and OVS (Receiving overvoltage).	
	EDM output terminal	Output for STO diagnosis	
	Monitor output terminal *8	Possible to output through selection from monitor data of parameters	
EMC filter switching *9		Possible to enable the EMC noise filter (switching method is different depending on the model)	
External access to PC		USB Micro-B	
Use environment	Ambient temperature *14	ND (normal duty)	-10 to 50°C
		LD (low duty)	-10 to 45°C
		VLD (very low duty)	-10 to 40°C
	Storage temperature *10	-20 to 65°C	
	Humidity	20-90%RH (location free of condensation)	
Vibration *11	5.9m/s ² (0.6G) 10 to 55Hz : 3G3RX2-A2004 to A2220 / 3G3RX2-A4007 to A4220		
	2.94m/s ² (0.3G) 10 to 55Hz : 3G3RX2-A2300 to A2550 / 3G3RX2-A4300 to A413K		
Use location *12	1000 m altitude or lower (location free from corrosive gas, oil mist, and dust)		
Expected Life time	Smoothing capacitor 10 years		
	Designed life of cooling fan 10 years (models equipped with a cooling fan) free from dust		
	Memory element on the control circuit board		
Applicable standards *13	Compliance with UL/cUL/CE standards, RCM, Functional Safety SIL3/PLe (to be obtained)		
Painting color	Black		
Operation and monitor	LCD operator *15		
Number of option slots	3 ports		
Other options	Braking resistor, AC reactor, DC reactor, noise filter		

*7. The threshold for signal output varies depending on the motor to be combined with the inverter, parameter adjustment, etc.

*8. The output data of analog voltage monitor and analog current monitor are reference values for connecting an analog meter. Due to the meter to be connected and variation in analog output circuit, the maximum output value may slightly vary from 10V or 20mA. To change characteristics, make adjustments using the Ao1 adjustment and Ao2 adjustment functions. Some monitor data cannot be output.

*9. To enable the EMC filter, connect with a power supply grounded at a neutral point. Otherwise, the leakage current may increase.

*10. The storage temperature is the temperature during transport.

*11. To be in accordance with the testing method specified in JIS C 60068-2-6: 2010 (IEC 60068-2-6:2007)

*12. When the inverter is used in a location at 1000m or higher altitude, air pressure reduces approximately 1% every 100m elevation. Perform 1% current derating and conduct evaluation for every 100m elevation. Please contact us for use in 2500m or higher environments.

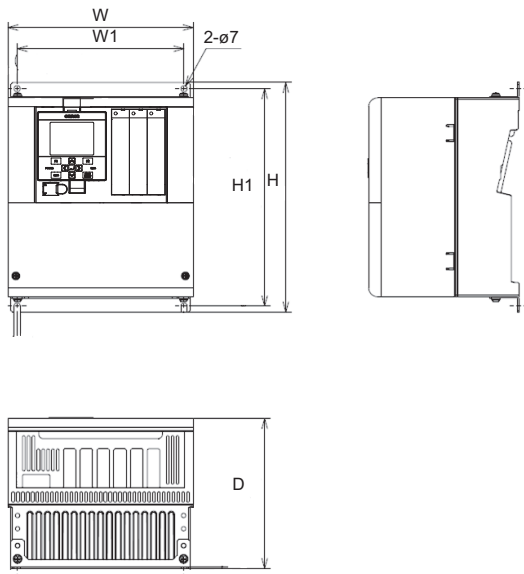
*13. For insulation distance, comply with UL and CE standards

*14. Use the 400V class inverter at an input voltage of 500VAC or below. If input voltage exceeds 500VAC due to fluctuation of power, use the inverter at 40°C or lower ambient temperature.

*15. In the case where a clock function is used, a battery (Option:CR2032, 3V) is required. When you purchase the product, the LCD operator does not have its battery.

● Applicable Standards

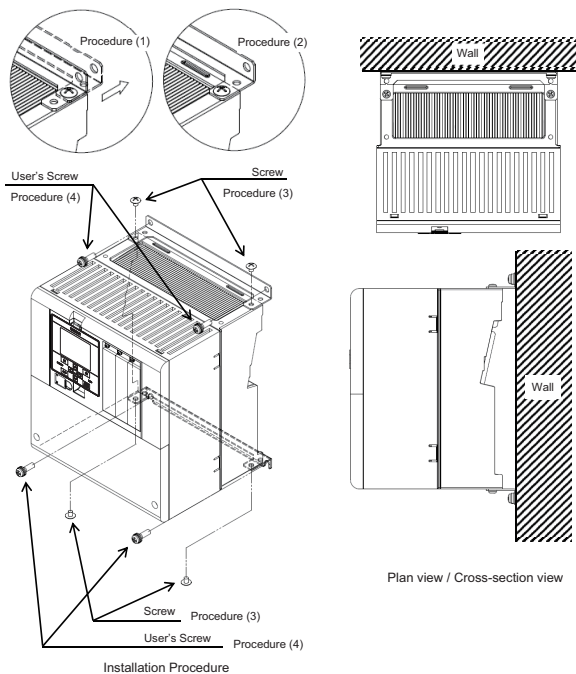
Markings		Standards
CE	EMC	EN 61800-3:2004+A1:2012
	Machinery	IEC61800-5-2:2016 STO SIL3
		ISO13849-1:2015 Cat.4 PLe
UL	US	UL61800-5-1
	CA	CSA C22.2 No. 274
	FS	IEC61800-5-2:2016 STO SIL3 ISO13849-1:2015 Cat.4 PLe
KC		KN61800-3
EAC		-
RCM		EN 61800-3:2004+A1:2012

External dimensions (mm)


3G3RX2-		W	W1	H	H1	D
200 V Class:	3G3RX2-A2004, 3G3RX2-A2007, 3G3RX2-A2015, 3G3RX2-A2022, 3G3RX2-A2037	150	130	255	241	140
400 V Class:	3G3RX2-A4007, 3G3RX2-A4015, 3G3RX2-A4022, 3G3RX2-A4037					
200 V Class:	3G3RX2-A2055, 3G3RX2-A2075, 3G3RX2-A2110	210	189	260	246	170
400 V Class:	3G3RX2-A4055, 3G3RX2-A4075, 3G3RX2-A4110					
200 V Class:	3G3RX2-A2150, 3G3RX2-A2185, 3G3RX2-A2220	245	229	390	376	190
400 V Class:	3G3RX2-A4150, 3G3RX2-A4185, 3G3RX2-A4220					
200 V Class:	3G3RX2-A2300	300	265	540	510	195
400 V Class:	3G3RX2-A4300					
200 V Class:	3G3RX2-A2370, 3G3RX2-A2450	390	300	550	520	250
400 V Class:	3G3RX2-A4370, 3G3RX2-A4450, 3G3RX2-A4550					
200 V Class:	3G3RX2-A2550	480	380	700	670	250
400 V Class:	3G3RX2-B4750, 3G3RX2-B4900	390	300	700	670	270
400 V Class:	3G3RX2-B411K, 3G3RX2-B413K	480	380	740	710	270

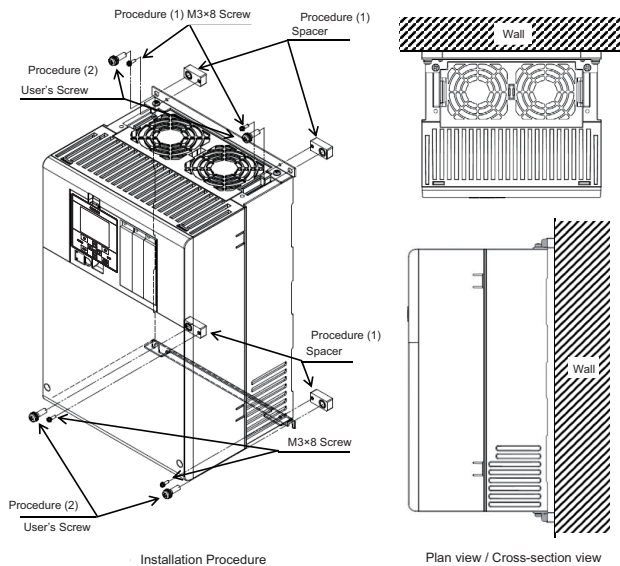
■ Precaution on Installation

When you use an inverter of 3G3RX2-A2110 at Low Duty (LD) / Very Low Duty (VLD) or you use an inverter of 3G3RX2-A2220 at Very Low Duty (VLD), install it with precautions shown in the following figures. Follow the below procedures and make the setting on your own.



* Set Low Duty [Ub-03] to 01 (LD) and set Very Low Duty to 00 (VLD) to complete the change.

In the case of 3G3RX2-A2220



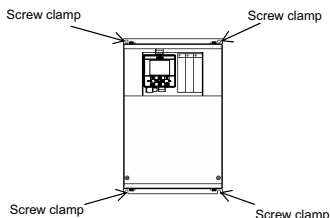
* Set Very Low Duty to 00 (VLD) to complete the change.

Installation conditions

■ Equipment Peripheral Dimension Conditions

● Please note the installation method, the direction of installation!

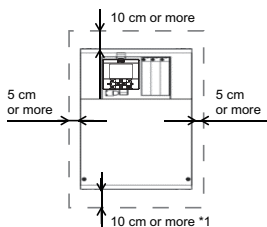
- If the inverter is not installed vertically, its cooling performance may be degraded and tripping or inverter damage may result.
- Install the inverter vertically and securely with screws or bolts on a surface that can bear the inverter weight and is free from vibrations.



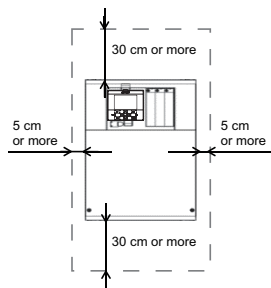
● Surface on which to install the inverter

- The inverter will reach a high temperature (up to about 150°C) during operation. Install the inverter on a vertical wall surface made of nonflammable material (e.g., metal) to avoid the risk of fire. In addition be sure to confirm the structure to bear the Inverter weight.
- Keep sufficient distance between the inverter and other heat sources (e.g., braking resistors and reactors) so that the heat discharged from the heat sources does not affect the inverter.

3G3RX2-A2004 to 3G3RX2-A2550
3G3RX2-A4007 to 3G3RX2-A4550



3G3RX2-B4750 to 3G3RX2-B413K

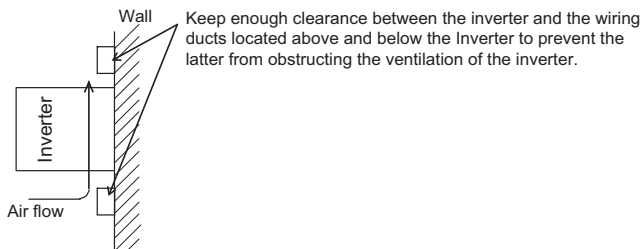
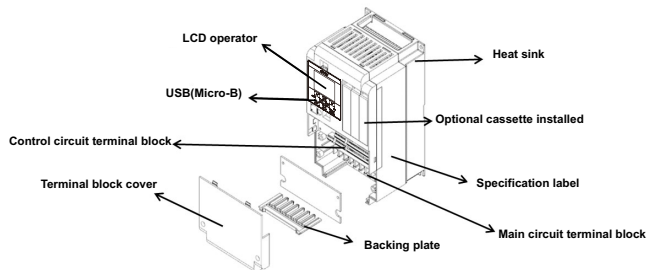


*1 The following models need minimum 22 cm for maintenance.

- 3G3RX2-A2150 to 3G3RX2-A2220
- 3G3RX2-A4150 to 3G3RX2-A4220

The following models needs to be removed to replace aged parts.

- 3G3RX2-A2055 to 3G3RX2-A2110
- 3G3RX2-A4055 to 3G3RX2-A4110



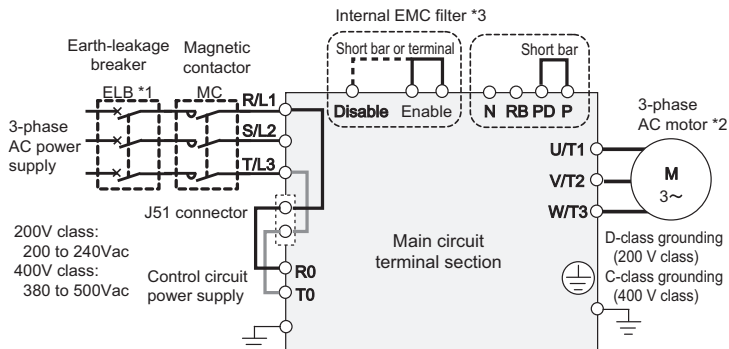
■ Humidity

Avoid installing the inverter in a place where the relative humidity goes above or below the allowable range (20% to 90% RH), as defined by the standard inverter specification. Avoid a place where the inverter is subject to condensation.

Condensation inside the inverter will result in short circuits and malfunctioning of electronic parts. Also avoid places where the inverter is exposed to direct sunlight.

Main circuit

■Main circuit Wiring Diagram



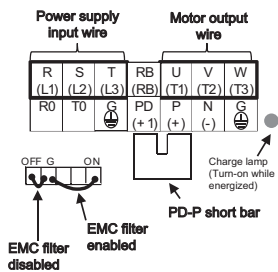
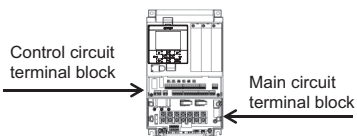
*1. A Fuse is applicable in place of ELB.

*2. Driving a 200V motor using a 400V-class inverter may burn the motor.

*3. Factory setting is "Enable".

■Description of Main Circuit Terminal Block

Terminal symbol	Terminal name	Description
R, S, T (L1, L2, L3)	Input terminal for main power supply	Connect to the AC power supply.
U, V, W (T1, T2, T3)	Inverter output terminal	Connect to the 3-phase motor.
PD, P (+1, +)	DC reactor connection terminal	Remove the short bar between PD and P terminals, and connect the optional reactor DCL for improving power factor.
P, RB (+, RB)	Connection terminal for external braking resistor	Connect the optional external braking resistor for models equipped with the braking resistor circuit. Models not equipped with the braking resistor circuit does not have the RB terminal.
P, N (+, -)	Connection terminal for regenerative braking unit	Connect the optional regenerative braking unit BRD.
⊕	Inverter earth terminal	The earth terminal for the Inverter case. Please connect this terminal to the ground. Conduct class-D ground work for 200V class, and class-C ground work for 400V class.



- * The EMC filter is enabled/disabled by switching the short bar connector.
- * Example of terminal arrangement.

■ Recommended Wire Diameter, Wiring Tools, and Crimping Terminals

● 200V class

Model 3G3RX2	Rated settings	Power line AWG (mm ²) R, S, T, U, V, W, P, PD, N	Ground line AWG (mm ²)	Braking resistor AWG between P and RB (mm ²)	Screw size of power line terminal	Crimping terminal power line/ground line	Tightening torque N·m
A2004	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A2007	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A2015	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A2022	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD	10 (5.3)	10 (5.3)	10 (5.3)	5.5-4/5.5-4		
A2037	ND	10 (5.3)	10 (5.3)	10 (5.3)	M4	5.5-4/5.5-4	1.4
	LD						
	VLD						
A2055	ND	8 (8.4)	8 (8.4)	8 (8.4)	M5	8-5/8-5	3.0
	LD						
	VLD						
A2075	ND	8 (8.4)	6 (13.3)	8 (8.4)	M5	8-5/8-5	3.0
	LD						
	VLD	6 (13.3)	6 (13.3)	6 (13.3)	14-5/8-5		
A2110	ND	6 (13.3)	6 (13.3)	6 (13.3)	M6	14-6/14-6	4.0
	LD						
	VLD	4 (21.2)	4 (21.2)	4 (21.2)	22-6/14-6		
A2150	ND	4 (21.2)	6 (13.3)	4 (21.2)	M6	22-6/14-6	2.5 to 3.0
	LD						
	VLD	3 (26.7)	3 (26.7)	3 (26.7)	38-6/14-6		
A2185	ND	3 (26.7)	6 (13.3)	3 (26.7)	M6	38-6/14-6	2.5 to 3.0
	LD						
	VLD	2 (33.6)	2 (33.6)	2 (33.6)	60-6/14-6		
A2220	ND	1 (42.4)	6 (13.3)	1 (42.4)	M8	60-8/14-6	5.5 to 6.6
	LD						
	VLD	1/0 (53.5)	1/0 (53.5)	1/0 (53.5)	70-8/14-6		
A2300	ND	2/0 (67.4)	4 (21.2)	2/0 (67.4)	M8	70-8/22-8	6.0
	LD						
	VLD	1/0×2 (53.5×2)	---	---	60-8/22-8		
A2370	ND	4/0 (107.2)	4 (21.2)	---	M8	100-8/22-8	15.0
	LD						
	VLD	1/0×2 (53.5×2)	---	---	60-8/22-8		
A2450	ND	1/0×2 (53.5×2)	4 (21.2)	---	M8	60-8/22-8	6.0 to 10.0
	LD						
	VLD	2/0×2 (67.4×2)	---	---	70-8/22-8		
A2550	ND	350kc (177)	3 (26.7)	---	M10	180-10/38-8	19.6
	LD						
	VLD	3/0×2 (85.0×2)	---	---	80-10/38-8		

Note 1. The wire diameter described in the above table shows the design value of the HIV line (heat-resistant 75 °C) standard.

2. When connecting wires to the main circuit terminal block, use the Round crimp terminal (UL compliant product) suitable for the wire used. Crimp terminals should be crimped using the Crimping tool recommended by the crimping terminal manufacturer.

● 400V class

Model 3G3RX2	Rated settings	Power line AWG (mm ²) R, S, T, U, V, W, P, PD, N	Ground line AWG (mm ²)	Braking resistor AWG between P and RB (mm ²)	Screw size of power line terminal	Crimping terminal power line/ground line	Tightening torque N·m
A4007	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A4015	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A4022	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD						
	VLD						
A4037	ND	14 (2.1)	14 (2.1)	14 (2.1)	M4	2-4/2-4	1.4
	LD					5.5-4/5.5-4	
	VLD					12 (3.3)	
A4055	ND	12 (3.3)	12 (3.3)	12 (3.3)	M5	5.5-5/5.5-5	3.0
	LD						
	VLD						
A4075	ND	10 (5.3)	10 (5.3)	10 (5.3)	M5	5.5-5/5.5-5	3.0
	LD					8-5/8-5	
	VLD					8 (8.4)	
A4110	ND	8 (8.4)	8 (8.4)	8 (8.4)	M6	8-6/8-6	4.0
	LD						
	VLD						
A4150	ND	8 (8.4)	8 (8.4)	8 (8.4)	M6	8-6/8-6	4.0
	LD						
	VLD						
A4185	ND	8 (8.4)	8 (8.4)	8 (8.4)	M6	8-6/8-6	4.0
	LD			6 (13.3)		14-6/8-6	
	VLD			6 (13.3)		14-6/8-6	
A4220	ND	6 (13.3)	8 (8.4)	6 (13.3)	M6	14-6/8-6	4.0
	LD			4 (21.2)		22-6/8-6	
	VLD			3 (26.7)		22-6/8-6	
A4300	ND	2 (33.6)	6 (13.3)	---	M8	38-8/14-8	6.0
	LD					60-8/14-8	
	VLD					1 (42.4)	
A4370	ND	1 (42.4)	6 (13.3)	---	M8	60-8/14-8	15.0
	LD						
	VLD						
A4450	ND	1 (42.4)	6 (13.3)	---	M8	60-8/14-8	6.0 to 10.0
	LD					70-8/14-8	
	VLD					2/0 (67.4)	
A4550	ND	1/0×2 (53.5×2)	4 (21.2)	---	M8	60-8/22-8	6.0 to 10.0
	LD					60-8/22-8	
	VLD					1/0×2 (53.5×2)	
B4750	ND	1/0×2 (53.5×2)	4 (21.2)	---	M10	60-10/22-8	6.0 to 10.0
	LD						
	VLD						
B4900	ND	1/0×2 (53.5×2)	3 (26.7)	---	M10	60-10/38-8	6.0 to 10.0
	LD					70-10/38-8	
	VLD					2/0×2 (67.4×2)	
B411K	ND	2/0×2 (67.4×2)	2 (33.6)	---	M10	70-10/38-8	19.6
	LD					80-10/38-8	
	VLD					3/0×2 (85.0×2)	
B413K	ND	4/0×2 (107×2)	2 (33.6)	---	M10	100-10/38-8	19.6
	LD					150-10/38-8	
	VLD					250kc×2 (127×2)	

Note 1. The wire diameter described in the above table shows the design value of the HIV line (heat-resistant 75 °C) standard.

2. When connecting wires to the main circuit terminal block, use the Round crimp terminal (UL compliant product) suitable for the wire used.

Crimp terminals should be crimped using the Crimping tool recommended by the crimping terminal manufacturer.

■ Applicable Breakers

● 200V class

- When inverter ND rating setting

Model 3G3RX2	Applicable motor (kW)	Applicable instrument (input voltage 200 to 220V)							
		Without power factor improvement reactor				With power factor improvement reactor (3G3AX-AL or 3G3AX-DL)			
		Earth-leakage breaker (ELB)		Magnetic contactor (MC)		Earth-leakage breaker (ELB)		Magnetic contactor (MC)	
		Example of model	Rated current	AC-1	AC-3	Example of model	Rated current	AC-1	AC-3
A2004	0.4	EB-30E	5	HS8	HS8	EB-30E	5	HS8	HS8
A2007	0.75	EB-30E	10	HS8	HS8	EB-30E	5	HS8	HS8
A2015	1.5	EB-30E	15	HS8	HS8	EB-30E	10	HS8	HS8
A2022	2.2	EB-30E	20	HS8	HS8	EB-30E	15	HS8	HS8
A2037	3.7	EB-30E	30	HS8	HS20	EB-30E	20	HS8	HS20
A2055	5.5	EB-50E	40	HS20	HS25	EB-30E	30	HS8	HS20
A2075	7.5	EB-50E	50	HS35	HS35	EB-50E	40	HS20	HS25
A2110	11	EB-100E	75	HS50	H65C	EB-100E	60	HS35	HS50
A2150	15	RXK125-S	125	H65C	H80C	EB-100E	100	HS50	H65C
A2185	18.5	RXK125-S	125	H80C	H100C	EB-100E	100	HS50	H65C
A2220	22	EXK225	150	H80C	H125C	RXK125-S	125	H65C	H80C
A2300	30	EXK225	200	H125C	H150C	EXK225	150	H80C	H125C
A2370	37	RXK250-S	250	H150C	H200C	EXK225	200	H100C	H125C
A2450	45	EX400	300	H200C	H250C	EXK225	225	H125C	H150C
A2550	55	EX400	400	H200C	H300C	EX400	300	H150C	H250C

- When inverter LD/VLD rating setting

Model 3G3RX2	Applicable motor (kW)	Applicable instrument (input voltage 200 to 220V)							
		Without power factor improvement reactor				With power factor improvement reactor (3G3AX-AL or 3G3AX-DL)			
		Earth-leakage breaker (ELB)		Magnetic contactor (MC)		Earth-leakage breaker (ELB)		Magnetic contactor (MC)	
		Example of model	Rated current	AC-1	AC-3	Example of model	Rated current	AC-1	AC-3
A2004	0.75	EB-30E	10	HS8	HS8	EB-30E	5	HS8	HS8
A2007	1.5	EB-30E	15	HS8	HS8	EB-30E	10	HS8	HS8
A2015	2.2	EB-30E	20	HS8	HS8	EB-30E	15	HS8	HS8
A2022	3.7	EB-30E	30	HS8	HS20	EB-30E	20	HS8	HS20
A2037	5.5	EB-50E	40	HS20	HS25	EB-30E	30	HS8	HS20
A2055	7.5	EB-50E	50	HS35	HS35	EB-50E	40	HS20	HS25
A2075	11	EB-100E	75	HS50	H65C	EB-100E	60	HS35	HS50
A2110	15	RXK125-S	125	H65C	H80C	EB-100E	100	HS50	H65C
A2150	18.5	RXK125-S	125	H80C	H100C	EB-100E	100	HS50	H65C
A2185	22	EXK225	150	H80C	H125C	RXK125-S	125	H65C	H80C
A2220	30	EXK225	200	H125C	H150C	EXK225	150	H80C	H125C
A2300	37	RXK250-S	250	H150C	H200C	EXK225	200	H100C	H125C
A2370	45	EX400	300	H200C	H250C	EXK225	225	H125C	H150C
A2450	55	EX400	400	H200C	H300C	EX400	300	H150C	H250C
A2550	75	EX600B	500	H300C	H400C	EX400	400	H200C	H300C

- Note
1. The models described in the table are examples of selection. When using the device, choose a model that has appropriate breaking capacity and sensitive current by taking short circuit current and relevant laws and regulations into consideration based on the rated current shown in the table.
 2. The applicable motor capacity is a selection example when standard motors 4-pole motor model 60HZ 200VAC (200V class) is used.
 3. The electric durability ensured when the magnetic contactor is used in AC-1 class is 500,000 times, while emergency stop during motor operation is 25 times.
 4. If there is emergency stop during motor drive or commercial operation is performed, choose the magnetic contactor on the motor side in AC-3 class against the rated current of motor.
 5. If the rated capacity of inverter is larger than the motor capacity, choose instruments based on the inverter model.

● 400V class

- At inverter ND rating setting

Model 3G3RX2	Applicable motor (kW)	Applicable instrument (input voltage 200 to 220V)							
		Without power factor improvement reactor				With power factor improvement reactor (3G3AX-AL or 3G3AX-DL)			
		Earth-leakage breaker (ELB)		Magnetic contactor (MC)		Earth-leakage breaker (ELB)		Magnetic contactor (MC)	
		Example of model	Rated current	AC-1	AC-3	Example of model	Rated current	AC-1	AC-3
A4007	0.75	EX50C	5	HS8	HS8	EX50C	5	HS8	HS8
A4015	1.5	EX50C	10	HS8	HS8	EX50C	5	HS8	HS8
A4022	2.2	EX50C	10	HS8	HS8	EX50C	10	HS8	HS8
A4037	3.7	EXK50-C	15	HS8	HS10	EX50C	10	HS8	HS8
A4055	5.5	EXK50-C	20	HS8	HS20	EXK50-C	15	HS8	HS20
A4075	7.5	EXK50-C	30	HS8	HS25	EXK50-C	20	HS8	HS20
A4110	11	EXK50-C	40	HS20	HS35	EXK50-C	30	HS8	HS25
A4150	15	EXK50-C	50	HS25	HS50	EXK50-C	40	HS20	HS35
A4185	18.5	EXK100-C	75	HS35	HS50	EXK50-C	50	HS20	HS35
A4220	22	EXK100-C	75	HS50	H65C	EXK60-C	60	HS35	HS50
A4300	30	EXK100-C	100	HS50	H80C	EXK100-C	75	HS50	H65C
A4370	37	RXK125-S	125	H80C	H100C	EXK100-C	100	HS50	H65C
A4450	45	EXK225	150	H80C	H125C	RXK125-S	125	H65C	H80C
A4550	55	EXK225	200	H100C	H125C	EXK225	150	H80C	H100C
B4750	75	RXK250-S	250	H150C	H200C	EXK225	200	H100C	H125C
B4900	90	EX400	300	H200C	H250C	EXK225	225	H125C	H150C
B411K	110	EX400	400	H200C	H300C	EX400	300	H150C	H250C
B413K	132	EX600B	500	H250C	H300C	EX400	350	H200C	H250C

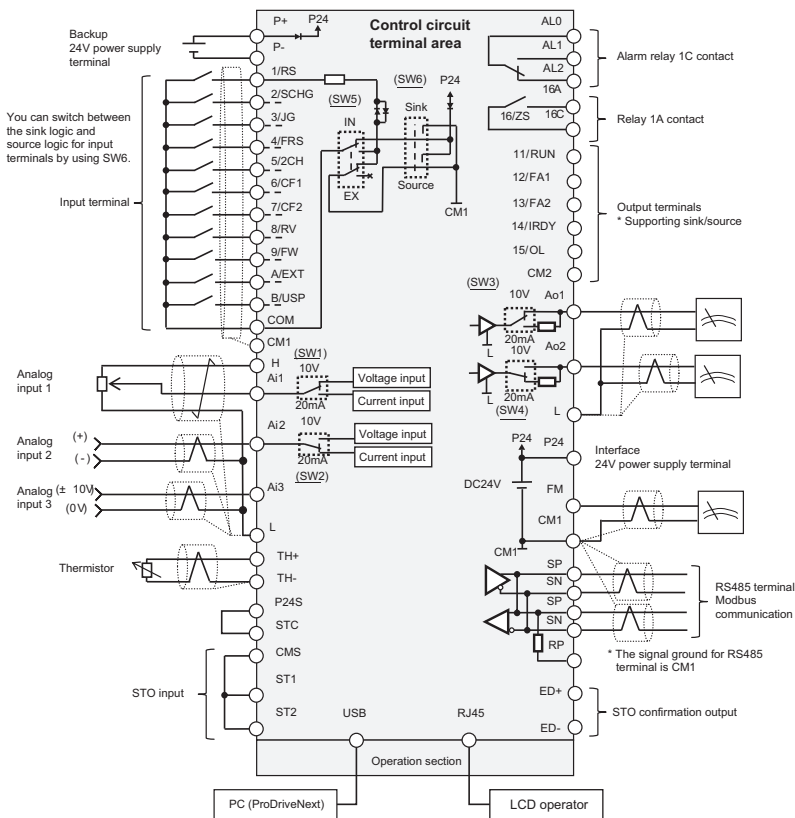
- At inverter LD/VLD rating setting

Model 3G3RX2	Applicable motor (kW)	Applicable instrument (input voltage 200 to 220V)							
		Without power factor improvement reactor				With power factor improvement reactor (3G3AX-AL or 3G3AX-DL)			
		Earth-leakage breaker (ELB)		Magnetic contactor (MC)		Earth-leakage breaker (ELB)		Magnetic contactor (MC)	
		Example of model	Rated current	AC-1	AC-3	Example of model	Rated current	AC-1	AC-3
A4007	1.5	EX50C	10	HS8	HS8	EX50C	5	HS8	HS8
A4015	2.2	EX50C	10	HS8	HS8	EX50C	10	HS8	HS8
A4022	3.7	EXK50-C	15	HS8	HS10	EX50C	10	HS8	HS8
A4037	5.5	EXK50-C	20	HS8	HS20	EXK50-C	15	HS8	HS20
A4055	7.5	EXK50-C	30	HS8	HS25	EXK50-C	20	HS8	HS20
A4075	11	EXK50-C	40	HS20	HS35	EXK50-C	30	HS8	HS25
A4110	15	EXK50-C	50	HS25	HS50	EXK50-C	40	HS20	HS35
A4150	18.5	EXK100-C	75	HS35	HS50	EXK50-C	50	HS20	HS35
A4185	22	EXK100-C	75	HS50	H65C	EXK60-C	60	HS35	HS50
A4220	30	EXK100-C	100	HS50	H80C	EXK100-C	75	HS50	H65C
A4300	37	RXK125-S	125	H80C	H100C	EXK100-C	100	HS50	H65C
A4370	45	EXK225	150	H80C	H125C	RXK125-S	125	H65C	H80C
A4450	55	EXK225	200	H100C	H125C	EXK225	150	H80C	H100C
A4550	75	EX400	250	H150C	H200C	EXK225	200	H100C	H125C
B4750	90	EX400	300	H200C	H250C	EXK225	225	H125C	H150C
B4900	110	EX400	400	H200C	H300C	EX400	300	H150C	H250C
B411K	132	EX600B	500	H250C	H300C	EX400	350	H200C	H250C
B413K	160	EX600B	600	H400C	H400C	EX400	400	H250C	H300C

- Note 1. The models described in the table are examples of selection. When using the device, choose a model that has appropriate breaking capacity and sensitive current by taking short circuit current and relevant laws and regulations into consideration based on the rated current shown in the table.
- The applicable motor capacity is a selection example when standard motors 4-pole motor model 60HZ 200VAC (200V class) is used.
 - The electric durability ensured when the magnetic contactor is used in AC-1 class is 500,000 times, while emergency stop during motor operation is 25 times.
 - If there is emergency stop during motor drive or commercial operation is performed, choose the magnetic contactor on the motor side in AC-3 class against the rated current of motor.
 - If the rated capacity of inverter is larger than the motor capacity, choose instruments based on the inverter model.

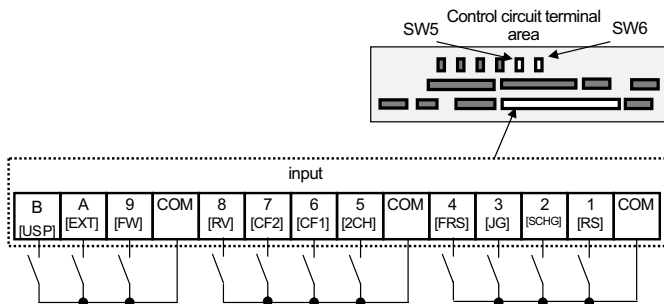
Control circuit

■ Outline of control circuit



Input terminals

- All COM terminals are at the same potential.
- When connecting a power supply between 1-9, A, B and COM, switch SW5 to the external power supply (EX).
- You can switch between the sink/source logic of input terminals by using SW6.
(Wiring example)



- Indicates the factory default setting.

		Terminal symbol	Terminal name	Description	Electrical characteristics	
Input terminal	Digital input	9, 8, 7, 6, 5, 4, 3, 2, 1	Input terminal	You can select terminal functions using the parameter settings corresponding to each terminal. You can switch between the sink logic and source logic by switching SINK/SRC of SW6.	Voltage between each input/COM <ul style="list-style-type: none"> • ON voltage Min. DC18V • OFF voltage Max. DC3V • Maximum allowable voltage DC27V • Load current 5.6mA (at DC27V) 	
		Contact/pulse	A	Pulse input-A	This is a terminal for pulse input. A and B terminals can be used also as an input terminal.	Voltage between each input/COM <ul style="list-style-type: none"> • ON voltage Min. DC18V • OFF voltage Max. DC3V • Maximum allowable voltage DC27V • Load current 5.6mA (at DC27V) • Maximum 32kpps pulse input
			B	Pulse input-B	Terminal functions are selectable according to the parameter settings for each terminal. The maximum input pulse rate is 32kpps.	
		COM	Common for input terminal	Common terminals for digital input terminals (1, 2, 3, 4, 5, 6, 7, 8, 9, A, B). There are three COM terminals.		

Initial terminal function

This section describes the function of the initial shipment value. Please check the detailed function in the user's manual (I620-E1).

[RS:028] Reset

- Reset at every trip.

[SCHG:015] Command source change

- Change to the main speed command [AA101](OFF) or sub-speed command [AA102](ON).

[JG:029] Jogging

- Run at a frequency of [AG-20] upon receipt of the operation command by [JG]ON.

[FRS:032] Free-run stop

- [FRS] ON sets the motor in a free-run state.

[2CH:031] Two-step acceleration/deceleration

- [2CH]ON enables acceleration/deceleration time-2 [AC124][AC126].

[EXT:033] External trip

- [EXT] ON issues Trip [E012].

[FW:001] Forward rotation and [RV:002] Reverse rotation

Forward	Reverse	Description
OFF	OFF	No command
ON	OFF	Forward rotation command operation
OFF	ON	Reverse rotation command operation
ON	ON	No command (inconsistent logic)

[CF1:003] Multispeed-1 and [CF2:004] Multispeed-2 commands

Multi-speed-1 CF1	Multi-speed-2 CF2	Description
OFF	OFF	The set frequency source is enabled.
ON	OFF	The frequency source of [Ab-11] is enabled.
OFF	ON	The frequency source of [Ab-12] is enabled.
ON	ON	The frequency source of [Ab-13] is enabled.

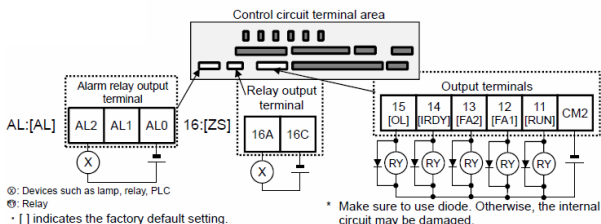
* Setting CF3 and 4 allows you to set up to 16-speed.

[USP:034] Unattended start protection

- In a [USP] ON state, if an operation command has been input before the power supply is ON, Trip [E013] is issued.

■ Output terminals

(Wiring example)



			Terminal symbol	Terminal name	Description	Electrical characteristics
Output terminal	Digital output	Open collector	15, 14 13, 12 11	Output terminal	You can select terminal functions using the parameter settings corresponding to each terminal. These terminals can be used both in sink logic or source logic.	Open collector output <ul style="list-style-type: none"> • Between each terminal and CM2 • Voltage drop at ON: 4V or below • Maximum allowable voltage: 27V • Maximum allowable current: 50mA
			CM2	Common for output terminal	Common terminals for output terminals 11-15	
	Relay	Relay	16A 16C	1a relay terminal	A relay for contact A output.	Maximum capacity of contact <ul style="list-style-type: none"> • AC250V, 2A (resistance) • AC250V, 1A (induction) Minimum capacity of contact <ul style="list-style-type: none"> • DC1V, 1mA
			AL0 AL1 AL2	1c relay terminal	A relay for contact C output.	Maximum capacity of contact <ul style="list-style-type: none"> AL1/AL0: <ul style="list-style-type: none"> • AC250V, 2A (resistance) • AC250V, 0.2A (induction) AL2/AL0: <ul style="list-style-type: none"> • AC250V, 1A (resistance) • AC250V, 0.2A (induction) Minimum capacity of contact (common) <ul style="list-style-type: none"> • AC100V, 10mA • DC5V, 100mA

■ Initial terminal function

This section describes the function of the initial shipment value. Please check the detailed function in the user's manual (I620-E1).

[RUN:001] During operation signal

- Turns ON during operation (PWM output).

[FA1:002] Frequency reached signal

- Turns ON when the output frequency reaches the command frequency.

[FA2:003] Frequency reached signal 2

- Turns ON when the output frequency reaches the set frequency [CE-10]-[CE-13].

[IRDY:007] Operation ready completion

- Turns ON when operation is ready.

[OL:035] Overload advance notice

- Turns ON when current exceeds the level of overload advance notice.

[ZS:040] 0 Hz detection signal

- Turns ON when the output frequency goes below the 0-Hz detection value level [CE-33].

About [AL] operation

- When [CC-17] = 00

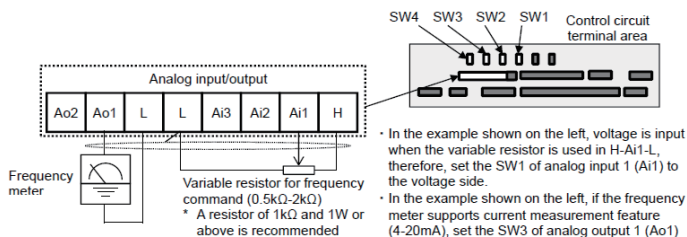
Power supply	Status	AL0-AL1	AL0-AL2
ON	Normal	Open	Close
ON	Trip	Close	Open
OFF	---	Open	Close

- When [CC-17] = 01

Power supply	Status	AL0-AL1	AL0-AL2
ON	Normal	Close	Open
ON	Trip	Open	Close
OFF	---	Open	Close

■ Analog input/output

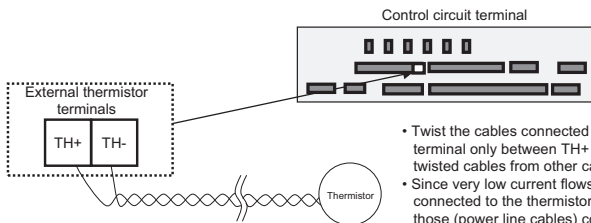
(Wiring example)



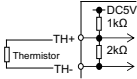
	Terminal symbol	Terminal name	Description	Electrical characteristics
Power supply	L	Analog power common	Common terminals for analog input terminals (Ai1, Ai2, Ai3) and analog output terminals (Ao1, Ao2). There are two L terminals.	
	H	Power supply for setting speed	This is a DC10V power supply. It is used when using analog input terminals (Ai1, Ai2, Ai3) and variable resistor for inputting voltage.	Maximum allowable input current 20mA
Analog input terminal for switching voltage and current	Ai1	Analog input terminal 1 (voltage/current switching SW1)	For Ai1 and Ai2, DC0-10V voltage input and 0-20mA current input can be switched using a switch for use. It can be used for input frequency command or feedback.	In the case of voltage input: <ul style="list-style-type: none"> Input impedance about 10kΩ Allowable input voltage DC-0.3V to 12V In the case of current input: <ul style="list-style-type: none"> Input impedance about 100Ω Maximum allowable input current 24mA
	Ai2	Analog input terminal 2 (voltage/current switching SW2)		
	Ai3	Analog input terminal 3	-10V to 10V voltage input is available. It can be used for input frequency command or feedback.	Only voltage input: <ul style="list-style-type: none"> Input impedance about 10kΩ Allowable voltage input -12V to 12V
Analog output	Ao1	Analog output terminal 1 (voltage/current switching SW3)	For Ao1 and Ao2, DC0-10V voltage output and 0-20mA current output can be switched using a switch as output of information monitor data of the inverter.	In the case of voltage output: <ul style="list-style-type: none"> Maximum allowable output current 2mA Output voltage accuracy $\pm 10\%$ (ambient temperature: $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$) In the case of current input: <ul style="list-style-type: none"> Allowable load impedance 250Ω or below Output current accuracy: $\pm 20\%$ (ambient temperature: $25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)
	Ao2	Analog output terminal 2 (voltage/current switching SW4)		

External thermistor

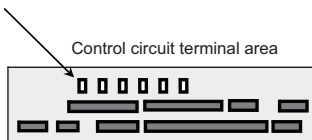
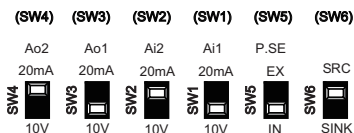
(Wiring example)



- Twist the cables connected from a thermistor to the TH terminal only between TH+ and TH-, and separate the twisted cables from other cables.
- Since very low current flows through the cables connected to the thermistor, separate the cables from those (power line cables) connected to the main circuit.
- The length of the cables connected to the thermistor must be 20 m or less.

		Terminal symbol	Terminal name	Description	Electrical characteristics
Thermistor terminal	Analog input	TH+	External thermistor input	Connect to an external thermistor to make the inverter trip if an abnormal temperature is detected.	DC 0 to 5V [Input circuit] 
		TH-	Common for external thermistor	Connect the thermistor to TH+ and TH-. The impedance to detect temperature errors can be adjusted within the range 0Ω to 10,000Ω. [Recommended thermistor properties] Allowable rated power: 100 mW or more Impedance at temperature error: 3kΩ	

■Description of switches

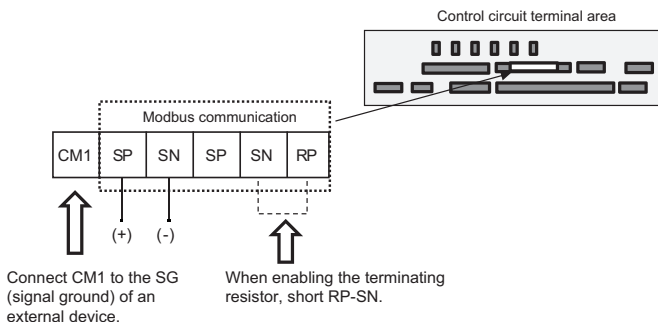


(Factory setting)

* Using a switch under power-on condition may cause failure. Use the switch only after turning off the power and confirming that the POWER lamp on the operator keypad is off.

Indication	SW name	Description
Ai1 (SW1)	Analog input 1 switch	Switches input specification of analog input 1 (Ai1 terminal). 10V: Voltage input is available. 20mA: Current input is available.
Ai2 (SW2)	Analog input 2 switch	Switches input specification of analog input 2 (Ai2 terminal). 10V: Voltage input is available. 20mA: Current input is available.
Ao1 (SW3)	Analog output 1 switch	Switches output specification of analog output 1 (Ao1 terminal). 10V: Output changes to voltage output. 20mA: Output changes to current output.
Ao2 (SW4)	Analog output 2 switch	Switches output specification of analog output 2 (Ao2 terminal). 10V: Output changes to voltage output. 20mA: Output changes to current output.
P.SEL (SW5)	Switching the method of power supply to the input terminals	Switches the method of power supply to the input terminals. IN: Drives the input terminals using the internal power supply. EX: Use an external power supply to drive input terminals. (In the case of EX, a power supply is required between the input terminals and COM.)
SRC/SINK (SW6)	Switch of sink/source for the input terminals	Switches the sink/source logic for input terminals. This switch is enabled when SW5 is IN. SINK: Enables sink logic. SRC: Enables source logic.

■RS485 Communication Terminal

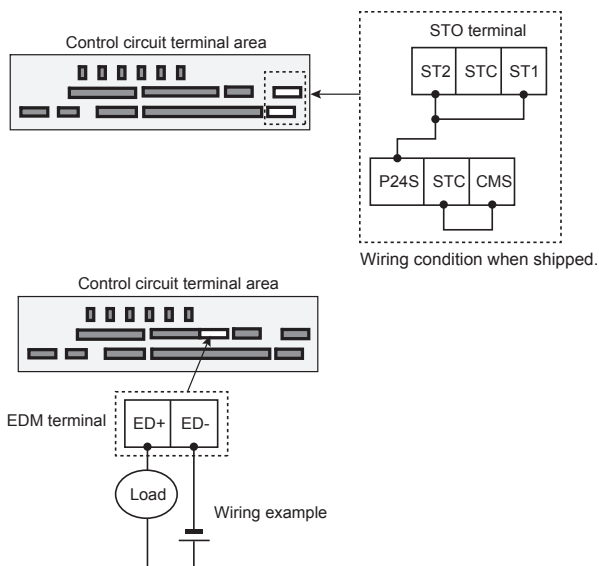


SP and SN terminals with the same names are internally connected respectively, so they can be used for wiring multiple terminals.

	Terminal symbol	Terminal name	Description	Electrical characteristics
RS485 communication	Serial communication	SP SN RP (CM1)	RS-485 terminal for Modbus communication	
			SP terminal: RS-485 differential (+) signal SN terminal: RS-485 differential (-) signal RP terminal: Connect to SP via tile terminating resistor CM1 terminal: Connect with the signal ground of an external communication device. (also used by FM terminal) There are two SP terminals and SN terminals each, which are connected internally. Maximum baud rate is 115.2kpbs.	Equipped with terminating resistor (120Ω) Enable: Short RP-SN Disable: Open RP-SN

■STO terminal, EDM terminal

STO terminal and EDM terminal used with the STO function. For details on the STO function, refer to the User's Manual (I620-E1).



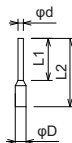
Terminal symbol	Terminal name	Description	Electrical characteristics
P24S	24V output terminal (for STO input only)	A DC24V power supply for contact signals dedicated for ST1/ST2 terminals. The common terminal is CMS.	Maximum output current: 100mA
CMS	24V output terminal common (for STO input only)	A common terminal for DC24V power supply for contact signals dedicated for ST1/ST2 terminals.	
STC	Input logic switching terminal	A logic switching terminal for STO input. You can change the input logic changing the connecting point of short-circuit line. When an external power supply is used, remove the short-circuit line and use this terminal as the input common for ST1/ST2.	<For sink logic> Short-circuit line: Connect between P24S and STC <For source logic> Short-circuit line: Connect between CMS and STC
ST1/ST2	STO input terminals	Input terminals of STO.	Voltage between ST1 and STC/ST1 and STC • ON voltage: Min.DC15V • OFF voltage Max. DC5V • Maximum allowable voltage DC27V • Load current 5.8mA (at DC27V) Internal resistance: 4.7kΩ
ED+	EDM signal output terminal (+)	A plus terminal of EDM signal (STO status monitoring).	Open collector output • Between ED+ and ED- • Voltage drop at ON: 4V or less • Maximum allowable voltage: 27V • Maximum allowable current: 50mA
ED-	EDM signal output terminal (-)	A minus terminal of EDM signal (STO status monitoring).	

■Recommended Terminal for wiring

- For the convenience of wiring and improvement of connection reliability, it is recommended to use rod terminals with the following specifications.
- For the control circuit terminal block, spring type terminal blocks are mounted.

Rod terminal with Sleeve

Wire size mm ² (AWG)	Rod terminal model *	L1 [mm]	L2 [mm]	φd [mm]	φD [mm]
0.25 (24)	AI 0,25-8YE	8	12.5	0.8	2.0
0.34 (22)	AI 0,34-8TQ	8	12.5	0.8	2.0
0.5 (20)	AI 0,5-8WH	8	14	1.1	2.5
0.75 (18)	AI 0,75-8GY	8	14	1.3	2.8

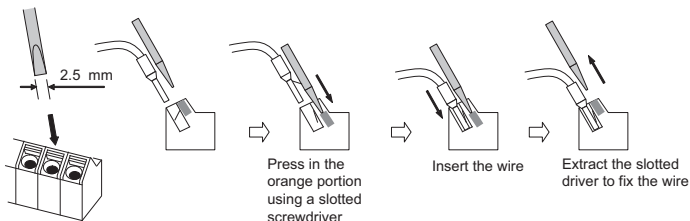


* Manufacturer: Phoenix Contact.

Caulking tool CRIMPFOX UD 6-4 or CRIMPFOX ZA 3

■Method of wiring/detaching wires

- 1** Press in the orange portion on the control circuit terminal block using a slotted screwdriver (2.5mm or less in width).
(The wire insertion slot opens.)
- 2** While pressing the slotted screwdriver in the terminal block, insert the wire or rod terminal into the wire insertion slot (round hole).
- 3** Extract the slotted driver to fix the wire.
Also when extracting the wire, extract it while the orange portion is pressed in with the slotted screwdriver (the wire insertion slot is open).



Conditions of conformity of EU directives

■ Specifications

EMC	EN61800-3:2004/A1:2012
Machinery	IEC61800-5-2:2016
	EN ISO 13849-1:2014
	EN61800-5-1:2007

- This is a product designed for industrial environments.
Use in residential area may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.
- This type of PDS is not intended to be used on a low-voltage public network which supplies domestic premises.

■ Manufacturer and EU Representative

Manufacturer: OMRON Corporation
Shiokoji Horikawa, Shimogyo-ku, Kyoto, 600-8530 Japan

Representative and Importer in EU: OMRON EUROPE B.V.
Wegalaan 67-69, 2132 JD Hoofddorp, The Netherlands

GENERAL:

3G3RX2 series Type inverter is open type AC Inverter with three phase input and three phase output. It is intended to be used in an enclosure. It is used to provide both an adjustable voltage and adjustable frequency to the ac motor. The inverter automatically maintains the required volts-Hz ratio allowing the capability through the motor speed range. It is multi-rated device and the ratings are selectable according to load types by operator with key pad operation.

■ Compatibility Conditions of EMC Directives

CAUTION for EMC

(Electromagnetic Compatibility)

3G3RX2 series inverter conforms to requirements of Electromagnetic Compatibility (EMC) Directive (2014/30/EU). However, when using the inverter in Europe, you must comply with the following specifications and requirements to meet the EMC Directive and other standards in Europe:



WARNING

This equipment must be installed, adjusted, and maintained by qualified engineers who have expert knowledge of electric work, inverter operation, and the hazard circumstances that can occur. Otherwise, personal injury may result.

1. Power supply requirements
 - a) Voltage fluctuation must be -15% to +10% or less.
 - b) Voltage imbalance must be $\pm 3\%$ or less.
 - c) Frequency variation must be $\pm 4\%$ or less.
 - d) Total harmonic distortion (THD) of voltage must be $\pm 10\%$ or less.
2. Installation requirement
 - a) 3G3RX2 series includes a built-in EMC filter. The built-in EMC filter must be activated.

- b) According to EN61800-3 it is mandatory to mention that any inverter with only C3 filter inside may NOT be connected to a low voltage public power supply in residential areas since for these installations C1 is required.
- c) In case of external filter for C2, an additional note is required according to EN61800-3 that "this product may emit high frequency interference in residential areas which may require additional EMC measures".
- d) According to the EN6100-3-12, an additional AC reactor or DC choke should be installed for reducing harmonics in power line.

3. Wiring requirements

- a) A shielded wire (screened cable) must be used for motor wiring, and the length of the cable must be according to the following table.
- b) The carrier frequency must be set according to the following table to meet an EMC requirement.
- c) The main circuit wiring must be separated from the control circuit wiring.

4. Environmental requirements (to be met when a filter is used)

- a) 3G3RX2 series inverter that is activated built-in EMC filter must be according to 3G3RX2 series specifications.

Table 1

Model 3G3RX2	Cat.	Cable length	Carrier frequency	Model 3G3RX2	Cat.	Cable length	Carrier frequency
A2004	C3	10m	2kHz	--	--	--	--
A2007	C3	10m	2kHz	A4007	C3	10m	2kHz
A2015	C3	10m	2kHz	A4015	C3	10m	2kHz
A2022	C3	10m	2kHz	A4022	C3	10m	2kHz
A2037	C3	10m	2kHz	A4037	C3	10m	2kHz
A2055	C3	5m	2kHz	A4055	C3	5m	2kHz
A2075	C3	5m	2kHz	A4075	C3	5m	2kHz
A2110	C3	5m	2kHz	A4110	C3	5m	2kHz
A2150	C3	10m	1kHz	A4150	C3	10m	2kHz
A2185	C3	10m	1kHz	A4185	C3	10m	2kHz
A2220	C3	10m	1kHz	A4220	C3	10m	2kHz
A2300	C3	5m	2kHz	A4300	C3	5m	2kHz
A2370	C3	5m	2kHz	A4370	C3	5m	2kHz
A2450	C3	5m	2kHz	A4450	C3	5m	2kHz
A2550	C3	5m	2kHz	A4550	C3	5m	2kHz
---	---	---	---	B4750	C3	3m	2kHz
---	---	---	---	B4900	C3	3m	2kHz
---	---	---	---	B411K	C3	3m	2kHz
---	---	---	---	B413K	C3	3m	2kHz

■Conditions of Electrical Safety (LVD)

The condition in the next section UL standard explain the condition of the electrical safety. It is necessary to comply with the description items such as temperature condition, installation condition etc.

Compatibility Conditions of UL/CSA Standards

■ Standards

US	UL61800-5-1
CA	CSA 22.2 No.274
FS	IEC61800-5-2:2016 STO SIL3 ISO13849-1:2015 Cat.4 PLe

UL CAUTION

GENERAL:

Model 3G3RX2 series inverter is an open type AC Inverter with three phase input and three phase output. It is intended to be used in an enclosure. It is used to provide both an adjustable voltage and adjustable frequency to the ac motor. The inverter automatically maintains the required volts-Hz ratio allowing the capability through the motor speed range. It is a multi-rated device and the ratings are selectable according to load types by operator with key pad operation.

Markings:	
Maximum Surrounding Temperature:	
ND (Normal Duty):	50°C
LD (Low Duty):	50°C*
VLD (Very Low Duty):	45°C*
Storage Environment rating:	65°C (for transportation)
Instruction for installation:	pollution degree 2 environment and Over voltage category III
Electrical Connections:	See [Main circuit Wiring Diagram] of this Instruction Manual
Interconnection and wiring diagrams:	See [Outline of control circuit] of this Instruction Manual

* For actual use, use within the temperature range indicated in the common specifications.

● 3G3RX2 series models Short circuit rating and overcurrent protection device rating:

- 3G3RX2-A2□□□ series models

Suitable for use on a circuit capable of delivering not more than (a) rms symmetrical amperes, at (b) V maximum*. (see table below)

- 3G3RX2-A4□□□ 3G3RX2-B4□□□ series models

Suitable for use on a circuit capable of delivering not more than (a) rms symmetrical amperes, at (b) V maximum*. (see table below)

	3G3RX2-□□□□□	(a)	(b)
200V	A2004 to A2220	5,000A rms	240V
	A2300 to A2550	10,000A rms	240V
400V	A4007 to A4220	5,000A rms	500V
	A4300 to A4550, B4750, B4900	10,000A rms	500V
	B411K, B413K	18,000A rms	500V

● Integral:

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.

Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the Canadian Electrical Code, part1* or the equivalent. (For Canada)

Field wiring terminal conductor size and Torque Values making for field wiring terminal

Model 3G3RX2	Load Type	Required Torque (N-m)	Conductor size (AWG)	Model 3G3RX2	Load Type	Required Torque (N-m)	Conductor size (AWG)
A2004	VLD	1.4	14	A4007	VLD	1.4	14
	LD						
	ND						
A2007	VLD	1.4	14	A4015	VLD	1.4	14
	LD						
	ND						
A2015	VLD	1.4	14	A4022	VLD	1.4	14
	LD						
	ND						
A2022	VLD	1.4	10	A4037	VLD	1.4	12
	LD				14		
	ND				10		
A2037	VLD	1.4	10	A4055	VLD	3	12
	LD				8		
	ND				10		
A2055	VLD	3	6	A4075	VLD	3	8
	LD		8		10		
	ND		6				
A2075	VLD	3	8	A4110	VLD	4	8
	LD		4				
	ND		6				
A2110	VLD	4	4	A4150	VLD	4	8
	LD		3				
	ND		4				
A2150	VLD	2.5 to 3.0	3	A4185	VLD	4	6
	LD		4		8		
	ND		1				
A2185	VLD	2.5 to 3.0	2	A4220	VLD	4	4
	LD		3		6		
	ND		2/0		1		
A2220	VLD	5.5 to 6.6	2/0	A4300	VLD	6	1
	LD		1/0		2		
	ND		1		3		
A2300	VLD	6	Parallel of 1/0	A4370	VLD	15	1
	LD		2/0				
	ND		Parallel of 1/0				
A2370	VLD	6 to 10	Parallel of 1/0	A4450	VLD	15	1/0
	LD		Parallel of 1/0		1		
	ND		4/0				
A2450	VLD	6 to 10	Parallel of 2/0	A4550	VLD	6 to 10	Parallel of 1/0
	LD		Parallel of 1/0		2/0		
	ND		Parallel of 1/0		1/0		
A2550	VLD	10 to 12	Parallel of 3/0	B4750	VLD	10 to 12	Parallel of 1/0
	LD		Parallel of 3/0				
	ND		350kcmil				
				B4900	VLD	10 to 12	Parallel of 2/0
					LD		Parallel of 1/0
					ND		
				B411K	VLD	10 to 12	Parallel of 3/0
					LD		Parallel of 2/0
					ND		
				B413K	VLD	10 to 12	P. of 250kcmil
					LD		Parallel of 4/0
					ND		Parallel of 3/0

Note 1. Temperature rating of field wiring installed conductors is 75°C only.

2. Use Copper conductors only.

Required protection by Fuse and circuit-breakers

● 200V class

Model 3G3RX2	Fuse				Circuit Breaker	
	Type	Maximum Rating		Maximum Rating		
		Voltage (V)	Current (A)	Voltage (V)	Current (A)	
A2004	Class J or T	600	15	---	---	
A2007	Class J or T	600	30	---	---	
A2015	Class J or T	600	40	---	---	
A2022	Class J or T	600	40	---	---	
A2037	Class J or T	600	50	---	---	
A2055	Class J or T	600	100	---	---	
A2075	Class J or T	600	150	---	---	
A2110	Class J or T	600	150	---	---	
A2150	Class J or T	600	150	---	---	
A2185	Class J or T	600	200	---	---	
A2220	Class J or T	600	200	---	---	
A2300	Class J or T	600	300	---	---	
A2370	Class J or T	600	300	---	---	
A2450	Class J or T	600	400	---	---	
A2550	Class J or T	600	500	---	---	

● 400V class

Model 3G3RX2	Fuse				Circuit Breaker	
	Type	Maximum Rating		Maximum Rating		
		Voltage (V)	Current (A)	Voltage (V)	Current (A)	
A4007	Class J or T	600	15	---	---	
A4015	Class J or T	600	20	---	---	
A4022	Class J or T	600	30	---	---	
A4037	Class J or T	600	30	---	---	
A4055	Class J or T	600	75	---	---	
A4075	Class J or T	600	75	---	---	
A4110	Class J or T	600	75	---	---	
A4150	Class J or T	600	100	---	---	
A4185	Class J or T	600	100	---	---	
A4220	Class J or T	600	100	---	---	
A4300	Class J or T	600	200	---	---	
A4370	Class J or T	600	200	---	---	
A4450	Class J or T	600	200	---	---	
A4550	Class J or T	600	250	---	---	
B4750	Class J or T	600	300	---	---	
B4900	Class J or T	600	400	---	---	
B411K	Class J or T	600	500	---	---	
B413K	Class J or T	600	500	---	---	

Korean Radio Regulation (KC)

사용자안내문

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다.

Guide for Users

This equipment has been evaluated for conformity in a commercial environment.

When used in a residential environment, it may cause radio interference.

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Note: Specifications subject to change without notice.