

Multi-function Compact Inverter

MX2-Series

With Machine Automation Mentality

- Current vector Control.
- High Starting torque: 200% at 0.5 Hz.
- Double rating VT 120%/1 min and CT 150% /1 min.
- Speed range up to 1,000 Hz.
- Positioning functionality.
- Safety function *1 EN ISO13849-1:2008 (Cat.3/PLd)
IEC60204-1 Stop Category 0
- Fieldbus communications with optional unit *2:
EtherCAT, CompoNet and DeviceNet *3
- Modbus communications.

*1 When optional communication unit is mounted onto the MX2, the inverter will not conform to the safety standards.

*2 Optional communication unit can be used with the inverter 3G3MX2 of unit version 1.1 or higher.

*3 DeviceNet communication unit will be available soon.



Performance Specifications

Inverter 3G3MX2

3-phase 200 V Class

Function name			3-phase 200 V												
Model name (3G3MX2-)			A2001	A2002	A2004	A2007	A2015	A2022	A2037	A2055	A2075	A2110	A2150		
Applicable motor capacity	kW	CT	0.1	0.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5	11	15		
		VT	0.2	0.4	0.75	1.1	2.2	3.0	5.5	7.5	11	15	18.5		
	HP	CT	1/8	1/4	1/2	1	2	3	5	7 1/2	10	15	20		
		VT	1/4	1/2	1	1 1/2	3	4	7 1/2	10	15	20	25		
Rated output capacity [kVA]	200 V	CT	0.2	0.5	1.0	1.7	2.7	3.8	6.0	8.6	11.4	16.2	20.7		
		VT	0.4	0.6	1.2	2.0	3.3	4.1	6.7	10.3	13.8	19.3	23.9		
	240 V	CT	0.3	0.6	1.2	2.0	3.3	4.5	7.2	10.3	13.7	19.5	24.9		
		VT	0.4	0.7	1.4	2.4	3.9	4.9	8.1	12.4	16.6	23.2	28.6		
Rated input voltage			3-phase 200 V - 15% to 240 V + 10%, 50/60 Hz $\pm$ 5%												
Rated input current [A]	CT		1.0	1.6	3.3	6.0	9.0	12.7	20.5	30.8	39.6	57.1	62.6		
	VT		1.2	1.9	3.9	7.2	10.8	13.9	23.0	37.0	48.0	68.0	72.0		
Rated output voltage			3-phase 200 to 240 V (The output cannot exceed the incoming voltage).												
Rated output current [A]	CT		1.0	1.6	3.0	5.0	8.0	11.0	17.5	25.0	33.0	47.0	60.0		
	VT		1.2	1.9	3.5	6.0	9.6	12.0	19.6	30.0	40.0	56.0	69.0		
Short-time deceleration braking torque (%) (Discharge Resistor not connected)			50	50	50	50	50	20	20	20	20	10	10		
Braking Resistor circuit *	Regenerative braking		Built-in Braking Resistor circuit (separate Discharge Resistor)												
	Min. connectable resistance [Ω]		100	100	100	50	50	35	35	20	17	17	10		
Weight [kg]			1.0	1.0	1.1	1.2	1.6	1.8	2.0	3.3	3.4	5.1	7.4		
Dimensions (width $\times$ height) [mm]			68 $\times$ 128				108 $\times$ 128		140 $\times$ 128	140 $\times$ 260		180 $\times$ 296	220 $\times$ 350		
Dimensions (depth) [mm]			109		122.5	145.5	170.5		170.5	155		175			

Multi-function Compact Inverter MX2-Series

3-phase 400 V Class

Function name			3-phase 400 V											
Model name (3G3MX2-)			A4004	A4007	A4015	A4022	A4030	A4040	A4055	A4075	A4110	A4150		
Applicable motor capacity	kW	CT	0.4	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15		
		VT	0.75	1.5	2.2	3.0	4.0	5.5	7.5	11	15	18.5		
	HP	CT	1/2	1	2	3	4	5	7 1/2	10	15	20		
		VT	1	2	3	4	5	7 1/2	10	15	20	25		
Rated output capacity [kVA]	380 V	CT	1.1	2.2	3.1	3.6	4.7	6.0	9.7	11.8	15.7	20.4		
		VT	1.3	2.6	3.5	4.5	5.7	7.3	11.5	15.1	20.4	25.0		
	480 V	CT	1.4	2.8	3.9	4.5	5.9	7.6	12.3	14.9	19.9	25.7		
		VT	1.7	3.4	4.4	5.7	7.3	9.2	14.5	19.1	25.7	31.5		
Rated input voltage			3-phase 380 V - 15% to 480 V + 10%, 50/60 Hz ± 5%											
Rated input current [A]	CT		1.8	3.6	5.2	6.5	7.7	11.0	16.9	18.8	29.4	35.9		
	VT		2.1	4.3	5.9	8.1	9.4	13.3	20.0	24.0	38.0	44.0		
Rated output voltage			3-phase 380 to 480 V (The output cannot exceed the incoming voltage).											
Rated output current [A]	CT		1.8	3.4	4.8	5.5	7.2	9.2	14.8	18.0	24.0	31.0		
	VT		2.1	4.1	5.4	6.9	8.8	11.1	17.5	23.0	31.0	38.0		
Short-time deceleration braking torque (%) (Discharge Resistor not connected)			50	50	50	20	20	20	20	20	10	10		
Braking Resistor circuit *	Regenerative braking		Built-in Braking Resistor circuit (separate Discharge Resistor)											
	Min. connectable resistance [Ω]		180	180	180	100	100	100	70	70	70	35		
Weight [kg]			1.5	1.6	1.8	1.9	1.9	2.1	3.5	3.5	4.7	5.2		
Dimensions (width × height) [mm]			108 × 128					140 × 128	140 × 260		180 × 296			
Dimensions (depth) [mm]			143.5	170.5			170.5	155		175				

* The BRD usage is 10%.

1-phase 200 V Class

Function name			1-phase 200 V					
Model name (3G3MX2-)			AB001	AB002	AB004	AB007	AB015	AB022
Applicable motor capacity	kW	CT	0.1	0.2	0.4	0.75	1.5	2.2
		VT	0.2	0.4	0.55	1.1	2.2	3.0
	HP	CT	1/8	1/4	1/2	1	2	3
		VT	1/4	1/2	3/4	1 1/2	3	4
Rated output capacity [kVA]	200 V	CT	0.2	0.5	1.0	1.7	2.7	3.8
		VT	0.4	0.6	1.2	2.0	3.3	4.1
	240 V	CT	0.3	0.6	1.2	2.0	3.3	4.5
		VT	0.4	0.7	1.4	2.4	3.9	4.9
Rated input voltage			1-phase 200 V - 15% to 240 V + 10%, 50/60 Hz ± 5%					

Function Specifications

Function name		Specifications	
Enclosure ratings *1		Open type (IP20)	
Control	Control method	Phase-to-phase sinusoidal modulation PWM	
	Output frequency range *2	0.10 to 400 Hz (or 1,000 Hz in the high-frequency mode; restrictions apply)	
	Frequency precision *3	Digital command: $\pm 0.01\%$ of the max. frequency, Analog command: $\pm 0.2\%$ of the max. frequency ($25^{\circ}\text{C} \pm 10^{\circ}\text{C}$)	
	Frequency setting resolution	Digital setting: 0.01 Hz, Analog setting: One-thousandth of the maximum frequency	
	Voltage/Frequency characteristics	V/f characteristics (constant/reduced torque) Sensorless vector control, V/f control with speed feedback	
	Overload current rating	Heavy load rating (CT): 150%/60 s Light load rating (VT): 120%/60 s	
	Instantaneous overcurrent protection	200% of the value of heavy load rating (CT)	
	Acceleration/Deceleration time	0.01 to 3600 s (linear/curve selection), acceleration/deceleration 2 setting available	
	Carrier frequency adjustment range	2 to 15 kHz (with derating)	
	Starting torque	200%/0.5 Hz (sensorless vector control)	
	External 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 status, rush current prevention circuit, overload limit, incoming overvoltage, external trip, memory error, CPU error, USP error, communication error, overvoltage suppression during deceleration, protection upon momentary power outage, emergency cutoff, etc.	
Input signal	Frequency settings	Digital Operator External analog input signal: 0 to 10 VDC/4 to 20 mA, Modbus communication (Modbus-RTU)	
	RUN/STOP command	Digital Operator External digital input signal (3-wire input supported), Modbus communication (Modbus-RTU)	
	Multi-function input	7 points (Selectable from 59 functions)	
	Analog input	2 points (Voltage FV terminal: 10 bits/0 to 10 V, Current FI terminal: 10 bits/4 to 20 mA)	
	Pulse input	1 point (RP terminal: 32 kHz max., 5 to 24 VDC)	
Output signal	Multi-function output	2 points (P1/EDM, P2; selectable from 43 functions)	
	Relay output	1 point (1c contact: MC, MA, MB; selectable from 43 functions)	
	Analog output (Frequency monitor)	1 point (AM terminal: Voltage 10 bits/0 to 10 V) (Frequency, current selectable)	
	Pulse output	1 point (MP terminal: 32 kHz max., 0 to 10 V)	
Communications	RS-422	RJ45 connector (for Digital Operator)	
	RS-485	Control circuit terminal block, Modbus communication (Modbus-RTU)	
	USB	USB1.1, mini-B connector	
Other functions		AVR function, V/f characteristics switching, 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, restart function, torque boost function, fault monitor, soft lock function, frequency conversion display, USP function, motor 2 control function, UP/DWN, overcurrent control function, etc.	
General specifications	Ambient temperature	-10 to 50°C (However, derating is required).	
	Ambient storage temperature	-20°C to 65°C (short-time temperature during transport)	
	Humidity	20% to 90% RH (with no condensation)	
	Vibration	5.9 m/s ² (0.6G), 10 to 55 Hz	
	Location	At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)	
Options		DC reactor, AC reactor, radio noise filter, input noise filter, output noise filter, regenerative braking unit, Braking Resistor, EMC noise filter, etc.	
International standard	EC directive	EMC directive	EN61800-3: 2004
		Low voltage directive	EN61800-5-1: 2003
		Machinery directives	IEC60204-1 Stop Category 0, EN IEC61800-5-2 (STO), EN ISO13849-1: 2008 (PLd), ISO13849-1: 2006 (PLd)
	UL/cUL		UL508C

Note: 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). It is 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.

*1 Protection method complies with JEM 1030.

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

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

MX2-Series EtherCAT Communication Unit 3G3AX-MX2-ECT

This is the communication unit to connect the Multi-function Compact Inverter MX2 to EtherCAT network.

This communication unit passed the conformance test of EtherCAT.

Note: EtherCAT Communication Unit 3G3AX-MX2-ECT can be used with the inverter 3G3MX2 of unit version 1.1 or higher.

Common Specifications

Item		Specifications
Power supply		Supplied from the inverter
Protective structure		Open type (IP20)
Ambient operating temperature		-10 to +50°C
Ambient storage temperature		-20 to +65°C
Ambient operating humidity		20% to 90% RH (with no condensation)
Vibration resistance		5.9 m/s ² (0.6 G), 10 to 55 Hz
Application environment		At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
Weight		100 g max.
International standard	UL/cUL	UL508C
	EC directive	EMC Directive :EN61800-3: 2004 Low Voltage Directive :EN61800-5-1: 2003

EtherCAT Communications Specifications

Item		Specifications
Communications standard		IEC 61158 Type12, IEC 61800-7 CiA 402 drive profile
Physical layer		100BASE-TX (IEEE802.3)
Connector		RJ45 × 2 (shielded type) ECAT IN : EtherCAT input ECAT OUT : EtherCAT output
Communications media		Category 5 or higher (cable with double, aluminum tape and braided shielding) is recommended.
Communications distance		Distance between nodes: 100 m max.
Process data		Fixed PDO mapping PDO mapping
Mailbox (CoE)		Emergency messages, SDO requests, SDO responses, and SDO information
Distributed clock		FreeRun mode (asynchronous)
LED display		L/A IN (Link/Activity IN) × 1 L/A OUT (Link/Activity OUT) × 1 RUN × 1 ERR × 1
CiA402 drive profile		Velocity mode

EtherCAT Communication Unit Version Information

As a Sysmac Device, the MX2-series Multi-function Compact Inverter is designed to provide optimal functionality and enhanced operability when used in conjunction with a Machine Automation Control such as NJ series and the automation software Sysmac Studio.

Sysmac Device is a generic term for OMRON control devices such as an EtherCAT Slave, designed with unified communications specifications and user interface specifications.

Unit Versions

Unit	Model	Unit version	
		Ver.1.0	Ver1.1
EtherCAT Communication Unit for MX2-Series	3G3AX-MX2-ECT	Supported	Supported
Compatible Sysmac Studio version		Version1.00 or higher*	Version1.00 or higher

* The function that was enhanced by the upgrade for Unit version1.1 can not be used. For detail, refer to "Function Support by Unit Version".

Function Support by Unit Version

MX2-Series CompoNet Communication Unit 3G3AX-MX2-CRT-E

This is the communication unit to connect the Multi-function Compact Inverter MX2 to CompoNet network.

Note: CompoNet Communication Unit 3G3AX-MX2-CRT-E can be used with the inverter 3G3MX2 of unit version 1.1 or higher.

Common Specification

Item		Specification
Power supply		Supplied from the inverter
Protective structure		IP20
Ambient operating temperature		– 10 to 55 °C (no icing or condensation)
Ambient storage temperature		– 20 to 65 °C (no icing or condensation)
Ambient operating humidity		20 to 90%RH
Vibration resistance		5.9m/s ² (0.6G), 10 to 55Hz
Application environment		At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
Insulation resistance		500VAC (between isolated circuits)
Weight		Approx. 170g
International standard	UL/cUL	UL508
	EC directive	EN61800-3: 2004 (2004/108/EC) Second environment, Category C3
		EN61800-5-1: 2007 (2006/95/EC) SELV

CompoNet Communications Specifications

Item		Specification
Slave type		Word Slave Unit (Mixed)
Certification		CompoNet Conformance Tested
CompoNet Profile		AC Drive (0x02)
Node Address		0 to 63, set with inverter parameter P190 or the rotary switches.
Communication power supply		- (External power not required)
Baud rates supported		4 Mbps, 3 Mbps, 1.5 Mbps, 93.75 kbps. Automatically detecting baud rate of Master Unit
Default Connection path		Supported, set with inverter parameter P046
Supported Assemblies		Basic Remote IO (Output assembly 20, Input assembly 70) Extended Speed IO (21, 71) Extended Speed and Torque Control (123, 173) Special IO (100, 150) Extended Control IO (101, 151) Extended Control IO and Multi function IO monitor (101, 153) Flexible Format (139, 159) Extended Speed and Acceleration Control (110, 111)
EDS file		Depending on the MX2 inverter model

MX2-Series DeviceNet Communication Unit 3G3AX-MX2-DRT-E

This is the communication unit to connect the Multi-function Compact Inverter MX2 to DeviceNet network.

Note: DeviceNet Communication Unit 3G3AX-MX2-DRT-E can be used with the inverter 3G3MX2 of unit version 1.1 or higher.

Common Specification

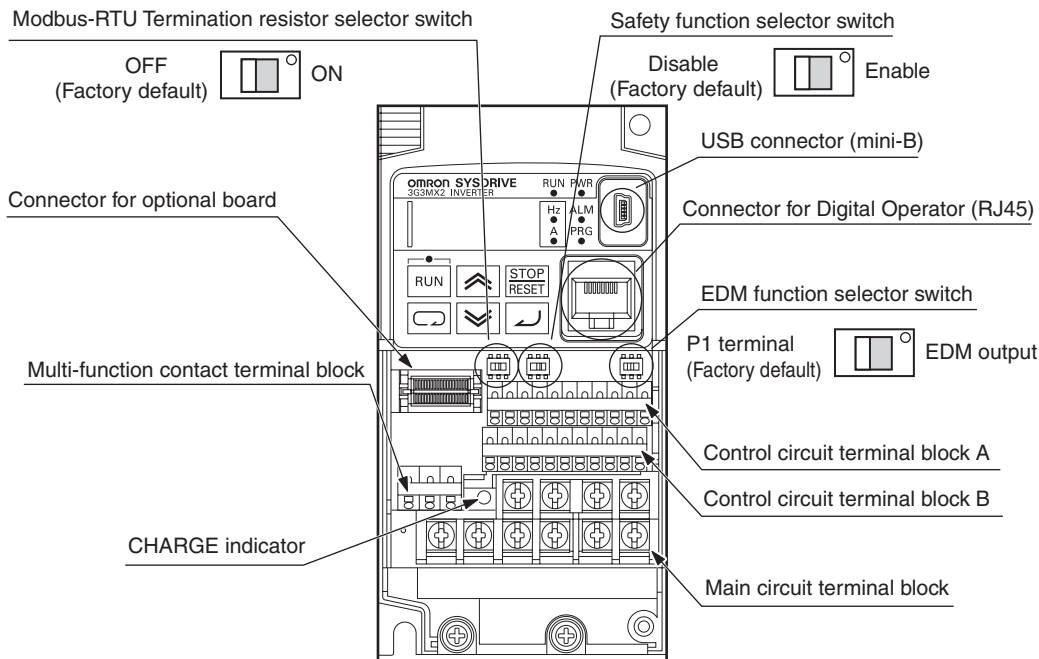
Item		Specification
Power supply		Supplied from the inverter
Protective structure		IP20
Ambient operating temperature		– 10 to 55 °C (no icing or condensation)
Ambient storage temperature		– 20 to 65 °C (no icing or condensation)
Ambient operating humidity		20 to 90%RH
Vibration resistance		5.9m/s ² (0.6G), 10 to 55Hz
Application environment		At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
Insulation resistance		500VAC (between isolated circuits)
Weight		Approx. 170g
International standard	UL/cUL	UL508
	EC directive	EN61800-3: 2004 (2004/108/EC) Second environment, Category C3
		EN61800-5-1: 2007 (2006/95/EC) SELV

DeviceNet Communications Specifications

Item		Specification
Certification		DeviceNet Conformance Tested
DeviceNet Profile		AC Drive (0x02)
Supported connections		Remote I/O: Master-Slave connection Poll Bit-Strobe COS Cyclic Explicit Messages Conform to DeviceNet specifications
Communication power supply		11 to 25VDC (MAX 50 mA, type 20 mA)
Unit device address range		MAC ID 0 to 63, set with inverter parameter P192
Baud rates supported		4 Mbps, 3 Mbps, 1.5 Mbps, 93.75 kbps. Automatically detecting baud rate of Master Unit
Default Connection path		Supported, set with inverter parameter P046
Supported Assemblies		Basic Remote IO (Output assembly 20, Input assembly 70) Extended Speed IO (21, 71) Extended Speed and Torque Control (123, 173) Special IO (100, 150) Extended Control IO (101, 151) Extended Control IO and Multi function IO monitor (101, 153) Flexible Format (139, 159) Extended Speed and Acceleration Control (110, 111) In case the DeviceNet master is configured using user allocation, only the input / output pairs can be configured.
EDS file		Depending on the MX2 Inverter model

Components and Functions

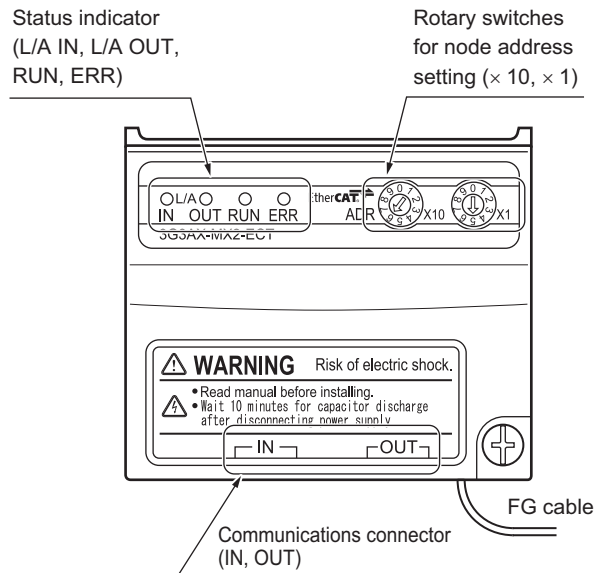
Inverter **3G3MX2**



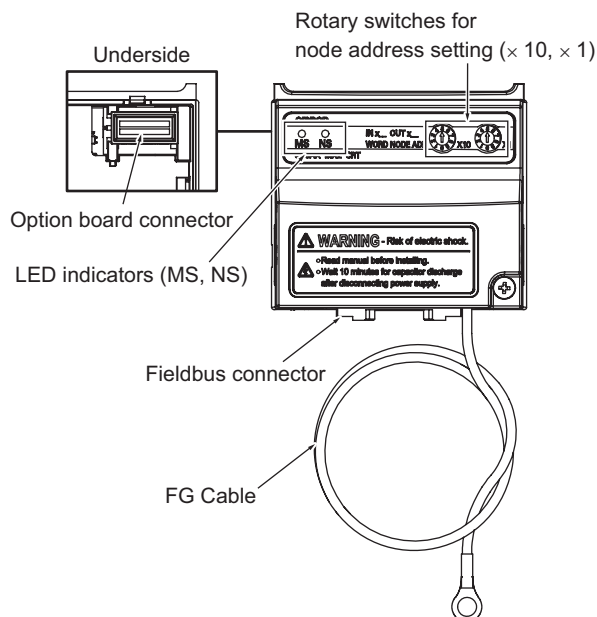
Name	Function
Modbus-RTU Termination resistor selector switch	Use this Terminal Resistor selector switch for RS-485 terminals on the control circuit terminal block. When this switch is turned ON, the internal 200 Ω Resistor is connected.
Safety function selector switch	Turn this switch ON when using the safety function. Turn OFF the power before turning this switch ON/OFF. For details, refer to USER'S MANUAL (Cat.No.I570).
EDM function selector switch	Turn this switch ON when using the EDM output of the safety function. Turn OFF the power before turning this switch ON/OFF. For details, refer to USER'S MANUAL (Cat.No.I570).
USB connector	Use this mini-B USB connector to connect a PC. Even when the Inverter is being operated by a PC, etc., via USB connection, it can still be operated using the Digital Operator.
Connector for Digital Operator	Use this connector to connect the Digital Operator.
Connector for optional board	Use this connector to mount the optional board. (Communications Units and other options can be connected.)
Control circuit terminal blocks A and B	These terminal blocks are used to connect various digital/analog input and output signals for inverter control, etc.
Multi-function contact terminal block	Use this SPDT contact terminal block for relay outputs.
Main circuit terminal block	Use this terminal block to connect an output to the motor and Braking Resistor, etc. Also, use this terminal block to connect the inverter to the main power supply.
CHARGE indicator (Charge indicator LED)	This LED indicator is lit if the DC voltage of the main circuit (between terminals P/+2 and N/-) remains approx. 45 V or above after the power has been cut off. Before wiring, etc. confirm that the Charge LED indicator is turned OFF.

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

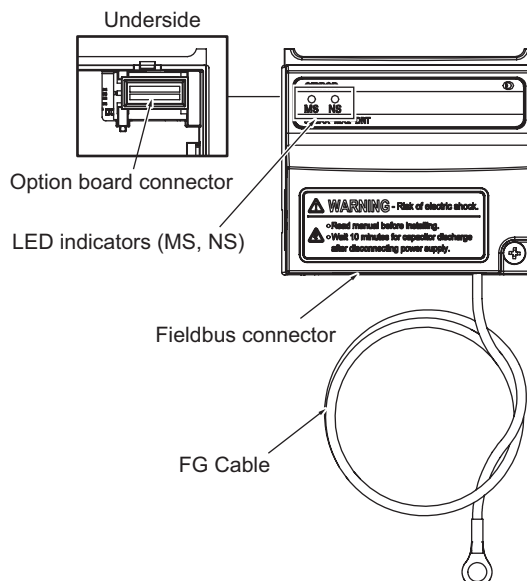
EtherCAT Communication Unit **3G3AX-MX2-ECT**



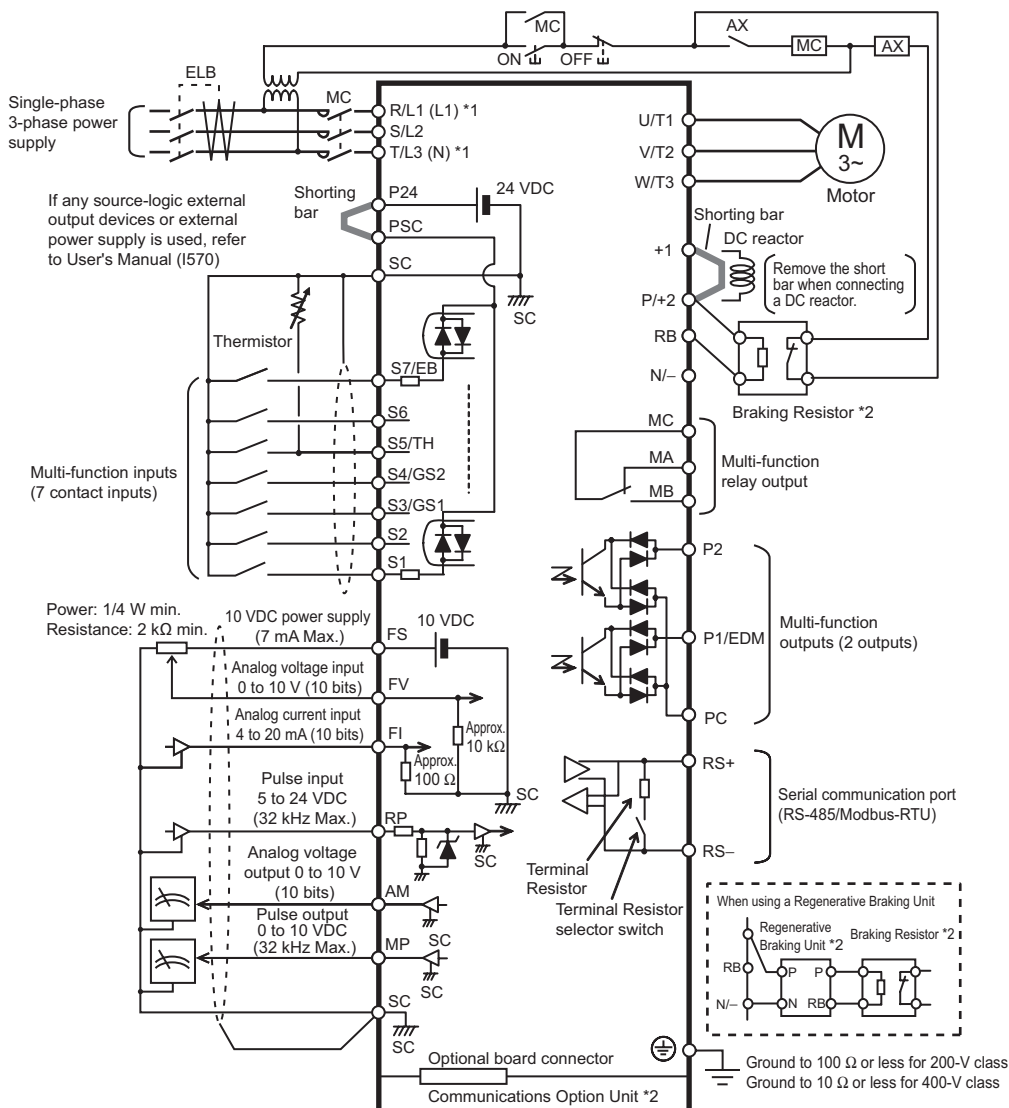
CompoNet Communications Unit 3G3AX-MX2-CRT-E



DeviceNet Communications Unit 3G3AX-MX2-DRT-E



Connection Diagram

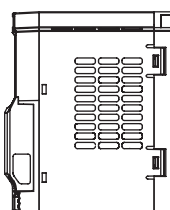
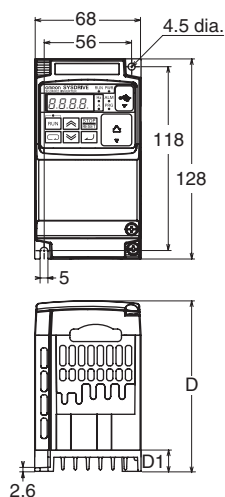


*1 Connect to terminals L1 and N on a single-phase, 200-V Inverter (3G3MX2-AB□□□).

*2 Optional.

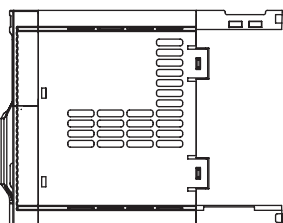
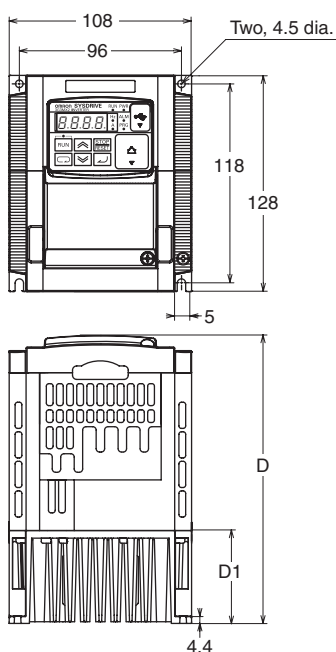
Dimensions

3G3MX2-AB001
3G3MX2-AB002
3G3MX2-AB004
3G3MX2-A2001
3G3MX2-A2002
3G3MX2-A2004
3G3MX2-A2007



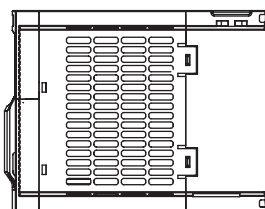
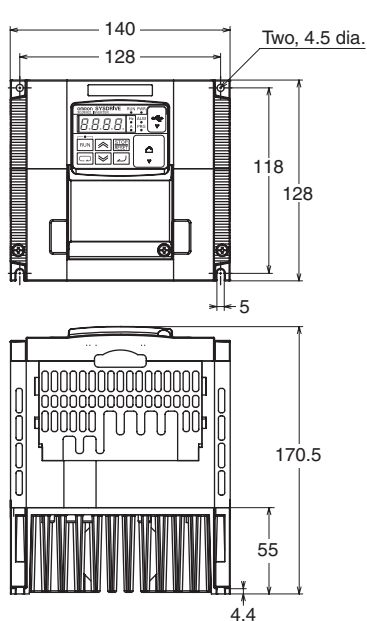
Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
1-phase 200 V	3G3MX2-AB001 3G3MX2-AB002	68	128	109	13.5
	3G3MX2-AB004			122.5	27
3-phase 200 V	3G3MX2-A2001 3G3MX2-A2002			109	13.5
	3G3MX2-A2004			122.5	27
	3G3MX2-A2007			145.5	50

3G3MX2-AB007
3G3MX2-AB015
3G3MX2-AB022
3G3MX2-A2015
3G3MX2-A2022
3G3MX2-A4004
3G3MX2-A4007
3G3MX2-A4015
3G3MX2-A4022
3G3MX2-A4030

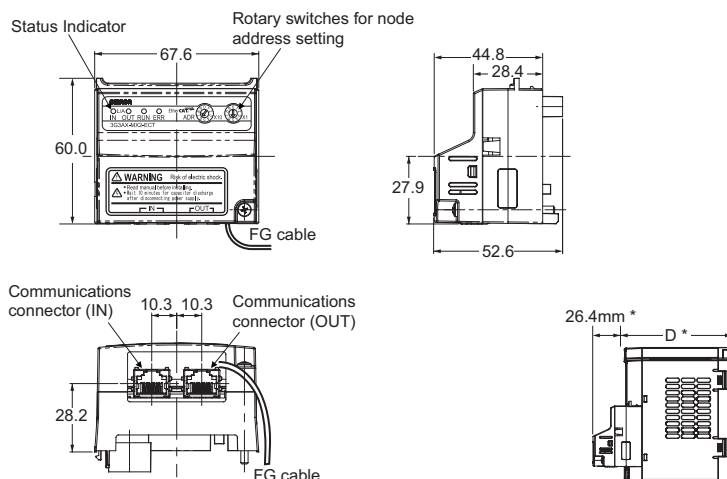


Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
1-phase 200 V	3G3MX2-AB007 3G3MX2-AB015 3G3MX2-AB022	108	128	170.5	55
	3G3MX2-A2015 3G3MX2-A2022			143.5	28
3-phase 200 V	3G3MX2-A4004			170.5	55
	3G3MX2-A4007 3G3MX2-A4015 3G3MX2-A4022 3G3MX2-A4030			170.5	55

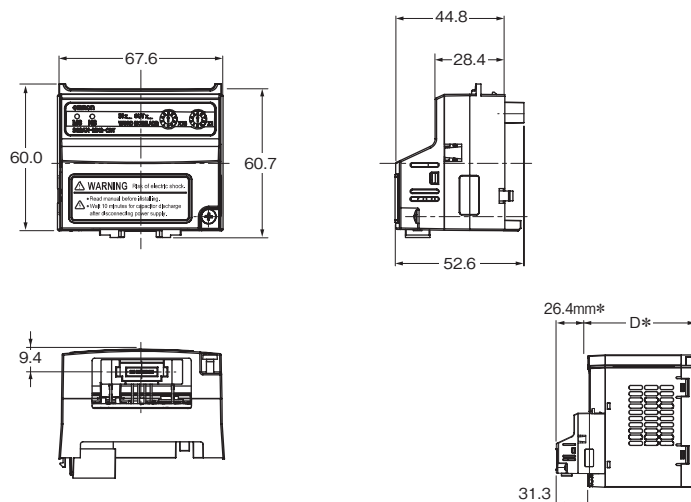
3G3MX2-A2037
3G3MX2-A4040



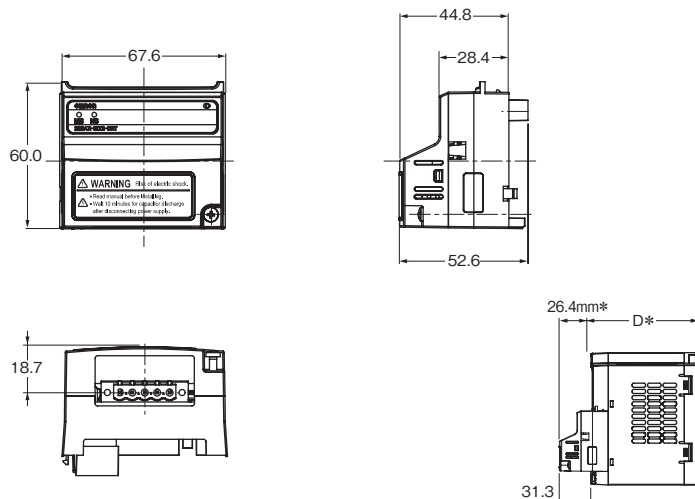
Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
3-phase 200 V	3G3MX2-A2037	140	128	170.5	55
3-phase 400 V	3G3MX2-A4040				

EtherCAT Communication Unit**3G3AX-MX2-ECT**

*After the EtherCAT Communication Unit is installed, dimension D of the inverter increases by 26.4 mm.
(Dimension D of the inverter varies depending on the capacity. Refer to the MX2-series USER'S MANUAL (Cat.No.I570))

CompoNet Communication Unit**3G3AX-MX2-CRT-E**

* After the CompoNet Communication Unit is installed, dimension D of the inverter increases by 26.4 mm.
(Dimension D of the inverter varies depending on the capacity. Refer to the MX2-series USER'S MANUAL (Cat.No.I570))

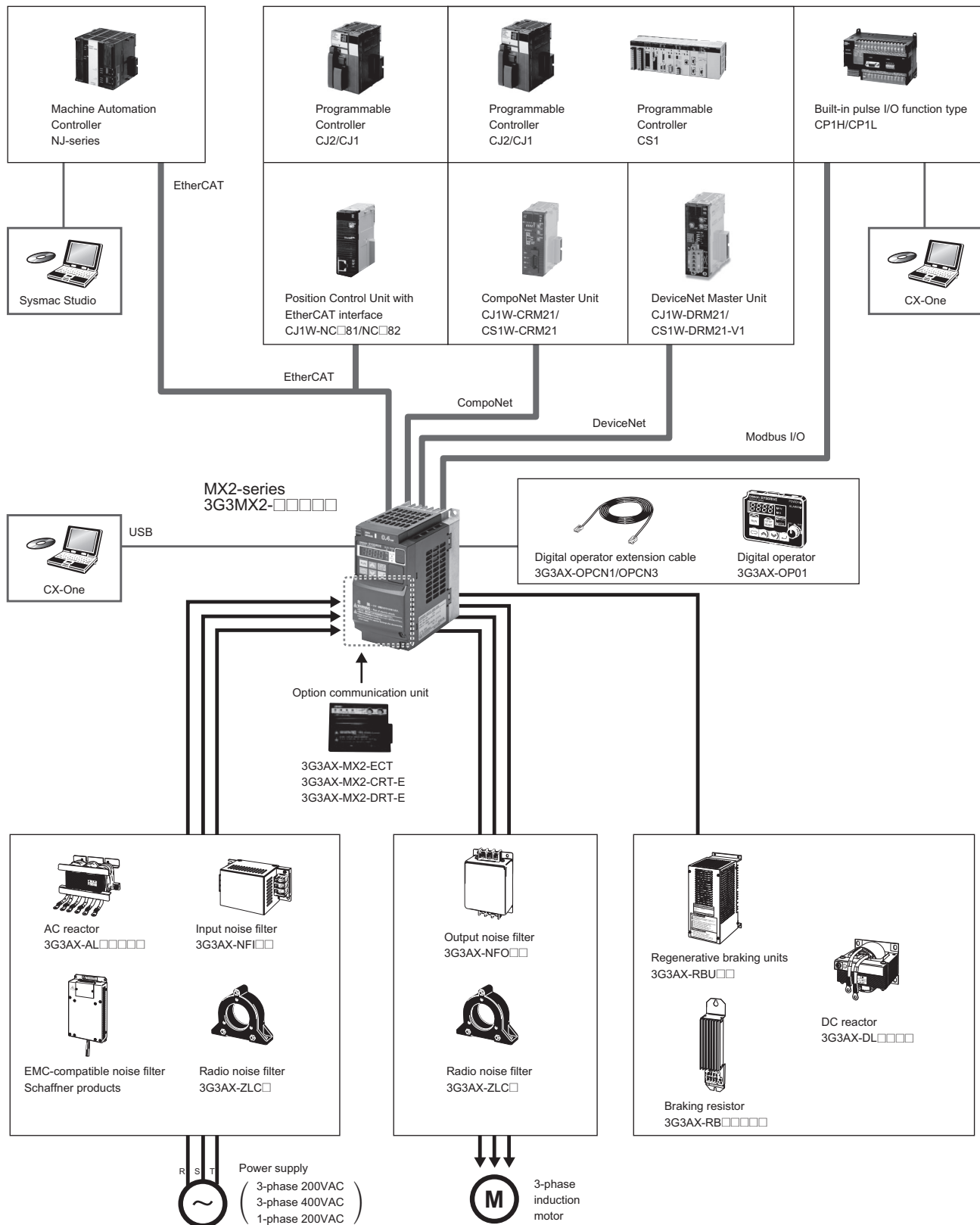
DeviceNet Communication Unit**3G3AX-MX2-DRT-E**

* After the DeviceNet Communication Unit is installed, dimension D of the inverter increases by 26.4 mm.
(Dimension D of the inverter varies depending on the capacity. Refer to the MX2-series USER'S MANUAL (Cat.No.I570))

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System Configuration



Interpreting Model Numbers

3G3MX2-A

1 2

3G3MX2

1) Voltage class

B	1-phase 200 VAC (200-V class)
2	3-phase 200 VAC (200-V class)
4	3-phase 400 VAC (400-V class)

2) Max. applicable motor capacity (CT)

001	0.1 kW
002	0.2 kW
004	0.4 kW
007	0.75 kW
015	1.5 kW
022	2.2 kW
030	3.0 kW
037	3.7 kW
040	4.0 kW
055	5.5 kW
075	7.5 kW
110	11 kW
150	15 kW

Ordering Information

3G3MX2 Inverter Models

Rated voltage	Enclosure ratings	Max. applicable motor capacity		Model
		CT: Heavy load	VT: Light load	
3-phase 200 VAC	IP20	0.1kW	0.2 kW	3G3MX2-A2001
		0.2 kW	0.4 kW	3G3MX2-A2002
		0.4 kW	0.75 kW	3G3MX2-A2004
		0.75 kW	1.1 kW	3G3MX2-A2007
		1.5 kW	2.2 kW	3G3MX2-A2015
		2.2 kW	3.0 kW	3G3MX2-A2022
		3.7 kW	5.5 kW	3G3MX2-A2037
		5.5 kW	7.5 kW	3G3MX2-A2055
		7.5 kW	11 kW	3G3MX2-A2075
		11 kW	15 kW	3G3MX2-A2110
3-phase 400 VAC	IP20	15 kW	18.5 kW	3G3MX2-A2150
		0.4 kW	0.75 kW	3G3MX2-A4004
		0.75 kW	1.5 kW	3G3MX2-A4007
		1.5 kW	2.2 kW	3G3MX2-A4015
		2.2 kW	3.0 kW	3G3MX2-A4022
		3.0 kW	4.0 kW	3G3MX2-A4030
		4.0 kW	5.5 kW	3G3MX2-A4040
		5.5 kW	7.5 kW	3G3MX2-A4055
		7.5 kW	11 kW	3G3MX2-A4075
		11 kW	15 kW	3G3MX2-A4110
1-phase 200 VAC	IP20	15 kW	18.5 kW	3G3MX2-A4150
		0.1 kW	0.2 kW	3G3MX2-AB001
		0.2 kW	0.4 kW	3G3MX2-AB002
		0.4 kW	0.55 kW	3G3MX2-AB004
		0.75 kW	1.1 kW	3G3MX2-AB007
		1.5 kW	2.2 kW	3G3MX2-AB015
		2.2 kW	3.0 kW	3G3MX2-AB022

Communication Unit

Name	Model
EtherCAT Communication Unit	3G3AX-MX2-ECT
CompoNet Communication Unit	3G3AX-MX2-CRT-E <i>NEW</i>
DeviceNet Communication Unit	3G3AX-MX2-DRT-E Available soon

Multi-function Compact Inverter 3G3MX2

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, 5 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

Regenerative Braking Unit and Braking Resistor Combination

Inverter			Usage conditions		Regenerative braking unit		Braking resistor		Connection configuration	Restrictions	
Voltage	Max.applicable motor capacity (kW)	Model	%ED *1 [%]	Approximate braking torque [% *2]	Model	Number of units	Model	Number of units		Allowable continuous braking time(s)	Min. connectable resistance [Ω]
200-V Class	0.1	3G3MX2-A2001 3G3MX2-AB001	3.0%	220%	Built-in Inverter		3G3AX-RBA1201	1	1	20	100
			10.0%	220%			3G3AX-RBB2001	1	1	30	100
	0.2	3G3MX2-A2002 3G3MX2-AB002	3.0%	220%	Built-in Inverter		3G3AX-RBA1201	1	1	20	100
			10.0%	220%			3G3AX-RBB2001	1	1	30	100
	0.4	3G3MX2-A2004 3G3MX2-AB004	3.0%	220%	Built-in Inverter		3G3AX-RBA1201	1	1	20	100
			10.0%	220%			3G3AX-RBB2001	1	1	30	100
	0.75	3G3MX2-A2007 3G3MX2-AB007	3.0%	120%	Built-in Inverter		3G3AX-RBA1201	1	1	20	50
			10.0%	120%			3G3AX-RBB2001	1	1	30	50
	1.5	3G3MX2-A2015 3G3MX2-AB015	2.5%	110%	Built-in Inverter		3G3AX-RBA1202	1	1	12	50
			10.0%	215%			3G3AX-RBC4001	1	1	10	50
	2.2	3G3MX2-A2022 3G3MX2-AB022	3.0%	150%	Built-in Inverter		3G3AX-RBB3001	1	1	30	35
			10.0%	150%			3G3AX-RBC4001	1	1	10	35
	3.7	3G3MX2-A2037	3.0%	125%	Built-in Inverter		3G3AX-RBB4001	1	1	20	35
			10.0%	125%			3G3AX-RBC6001	1	1	10	35
	5.5	3G3MX2-A2055	3.0%	120%	Built-in Inverter		3G3AX-RBB3001	2	2	30	20
			10.0%	120%			3G3AX-RBC4001	2	2	10	20
	7.5	3G3MX2-A2075	3.0%	125%	Built-in Inverter		3G3AX-RBB4001	2	2	20	17
			10.0%	125%			3G3AX-RBC6001	2	2	10	17
	11	3G3MX2-A2110	3.0%	90%	Built-in Inverter		3G3AX-RBC12001	1	1	10	17
			10.0%	90%			3G3AX-RBC12001	1	1	10	17
			10.0%	125%	3G3AX-RBU23	1	3G3AX-RBC6001	3	14	10	4
	15	3G3MX2-A2150	3.0%	110%	Built-in Inverter		3G3AX-RBB3001	5	7	30	10

Inverter			Usage conditions		Regenerative braking unit		Braking resistor		Connection configuration	Restrictions	
Voltage	Max.applicable motor capacity (kW)	Model	%ED *1 [%]	Approximate braking torque [% *2]	Model	Number of units	Model	Number of units		Allowable continuous braking time(s)	Min. connectable resistance [Ω]
400-V Class	0.4	3G3MX2-A4004	3.0%	220%	Built-in Inverter		3G3AX-RBA1201	2	3	20	180
			10.0%	220%			3G3AX-RBB2001	2	3	30	180
	0.75	3G3MX2-A4007	3.0%	220%	Built-in Inverter		3G3AX-RBA1201	2	3	20	180
			10.0%	220%			3G3AX-RBB2001	2	3	30	180
	1.5	3G3MX2-A4015	3.0%	120%	Built-in Inverter		3G3AX-RBA1201	2	3	20	180
			10.0%	120%			3G3AX-RBB2001	2	3	30	180
	2.2	3G3MX2-A4022	2.5%	150%	Built-in Inverter		3G3AX-RBA1202	2	3	12	100
			10.0%	220%			3G3AX-RBC4001	2	3	10	100
	3.0	3G3MX2-A4030	2.5%	110%	Built-in Inverter		3G3AX-RBA1202	2	3	12	100
			10.0%	215%			3G3AX-RBC4001	2	3	10	100
	4.0	3G3MX2-A4040	3.0%	165%	Built-in Inverter		3G3AX-RBB3001	2	3	30	100
			10.0%	165%			3G3AX-RBC4001	2	3	10	100
	5.5	3G3MX2-A4055	3.0%	120%	Built-in Inverter		3G3AX-RBB3001	2	3	30	70
			10.0%	120%			3G3AX-RBC4001	2	3	10	70
	7.5	3G3MX2-A4075	3.0%	125%	Built-in Inverter		3G3AX-RBB4001	2	3	20	70
			10.0%	125%			3G3AX-RBC6001	2	3	10	70
	11	3G3MX2-A4110	3.0%	85%	Built-in Inverter		3G3AX-RBB4001	2	3	20	70
			10.0%	85%			3G3AX-RBC6001	2	3	10	70
	15	3G3MX2-A4150	3.0%	125%	Built-in Inverter	1	3G3AX-RBU41 *3	4	15	10	34
			10.0%	125%			3G3AX-RBC4001	4	5	20	35

*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.

Connection configuration

TYPE		
1	Resistor only One unit	
2	Resistor only Two units in parallel	
3	Resistor only Two units in series	
5	Resistor only Two parallel units connected in series to two other parallel units	

TYPE		
7	Resistor only Five units in parallel	
14	One braking unit Three resistors in parallel	
15	One braking unit Two resistors in parallel connected in series to two other parallel units	

Multi-function Compact Inverter 3G3MX2

Name	Specifications of Inverter			Model
	Voltage class	CT: Heavy load	VT: Light load	
Radio Noise Filter	3-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-ZCL2
		0.2 kW	0.4 kW	
		0.4 kW	0.75 kW	
		0.75 kW	1.1 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
		3.7 kW	5.5 kW	3G3AX-ZCL1 (3G3AX-ZCL2)
		5.5 kW	7.5 kW	
		7.5 kW	11 kW	3G3AX-ZCL1
		11 kW	15 kW	
		15 kW	18.5 kW	
	1-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-ZCL2
		0.2 kW	0.4 kW	
		0.4 kW	0.55 kW	
		0.75 kW	1.1 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
	3-phase 400 VAC	0.4 kW	0.75 kW	3G3AX-ZCL2 (3G3AX-ZCL1)
		0.75 kW	1.5 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
		3.0 kW	4.0 kW	
		4.0 kW	5.5 kW	
		5.5 kW	7.5 kW	3G3AX-ZCL1
		7.5 kW	11 kW	
		11 kW	15 kW	
Input Noise Filter	3-phase 200 VAC	15 kW	18.5 kW	3G3AX-NFI21
		0.1 kW	0.2 kW	
		0.2 kW	0.4 kW	
		0.4 kW	0.75 kW	3G3AX-NFI22
		0.75 kW	1.1 kW	3G3AX-NFI23
		1.5 kW	2.2 kW	3G3AX-NFI24
		2.2 kW	3.0 kW	3G3AX-NFI25
		3.7 kW	5.5 kW	3G3AX-NFI26
		5.5 kW	7.5 kW	3G3AX-NFI27
		7.5 kW	11 kW	3G3AX-NFI28
		11 kW	15 kW	3G3AX-NFI21
		15 kW	18.5 kW	
	1-phase 200 VAC	0.1 kW	0.2 kW	
		0.2 kW	0.4 kW	3G3AX-NFI22
		0.4 kW	0.55 kW	3G3AX-NFI23
		0.75 kW	1.1 kW	3G3AX-NFI23 *
		1.5 kW	2.2 kW	3G3AX-NFI24
		2.2 kW	3.0 kW	3G3AX-NFI41
	3-phase 400 VAC	0.4 kW	0.75 kW	
		0.75 kW	1.5 kW	
		1.5 kW	2.2 kW	3G3AX-NFI42
		2.2 kW	3.0 kW	
		3.0 kW	4.0 kW	3G3AX-NFI43
		4.0 kW	5.5 kW	
		5.5 kW	7.5 kW	
		7.5 kW	11 kW	3G3AX-NFI44
		11 kW	15 kW	3G3AX-NFI45
		15 kW	18.5 kW	3G3AX-NFI46

* Only the CT rating is supported.

Name	Specifications of Inverter			Model
	Voltage class	CT: Heavy load	VT: Light load	
EMC-compatible Noise Filter	3-phase 200 VAC	0.1 kW	0.2 kW	Schaffner product will be supported in future.
		0.2 kW	0.4 kW	
		0.4 kW	0.75 kW	
		0.75 kW	1.1 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
		3.7 kW	5.5 kW	
		5.5 kW	7.5 kW	
		7.5 kW	11 kW	
		11 kW	15 kW	
		15 kW	18.5 kW	
	1-phase 200 VAC	0.1 kW	0.2 kW	
		0.2 kW	0.4 kW	
		0.4 kW	0.55 kW	
		0.75 kW	1.1 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
	3-phase 400 VAC	0.4 kW	0.75 kW	
		0.75 kW	1.5 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
		3.0 kW	4.0 kW	
		4.0 kW	5.5 kW	
		5.5 kW	7.5 kW	
		7.5 kW	11 kW	
		11 kW	15 kW	
		15 kW	18.5 kW	
Output Noise Filter	3-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-NFO01
		0.2 kW	0.4 kW	
		0.4 kW	0.75 kW	
		0.75 kW	1.1 kW	3G3AX-NFO02
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	3G3AX-NFO03
		3.7 kW	5.5 kW	
		5.5 kW	7.5 kW	3G3AX-NFO04
		7.5 kW	11 kW	
		11 kW	15 kW	3G3AX-NFO05
		15 kW	18.5 kW	3G3AX-NFO06
	1-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-NFO01
		0.2 kW	0.4 kW	
		0.4 kW	0.55 kW	
		0.75 kW	1.1 kW	3G3AX-NFO02
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	3G3AX-NFO03
	3-phase 400 VAC	0.4 kW	0.75 kW	3G3AX-NFO01
		0.75 kW	1.5 kW	
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	3G3AX-NFO02
		3.0 kW	4.0 kW	
		4.0 kW	5.5 kW	
		5.5 kW	7.5 kW	3G3AX-NFO03
		7.5 kW	11 kW	
		11 kW	15 kW	
		15 kW	18.5 kW	3G3AX-NFO04

Multi-function Compact Inverter **3G3MX2**

Name	Specifications of Inverter			Model
	Voltage class	CT: Heavy load	VT: Light load	
DC Reactor	3-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-DL2002
		0.2 kW	0.4 kW	3G3AX-DL2004
		0.4 kW	0.75 kW	3G3AX-DL2007
		0.75 kW	1.1 kW	3G3AX-DL2015
		1.5 kW	2.2 kW	3G3AX-DL2022
		2.2 kW	3.0 kW	3G3AX-DL2037
		3.7 kW	5.5 kW	3G3AX-DL2055
		5.5 kW	7.5 kW	3G3AX-DL2075
		7.5 kW	11 kW	3G3AX-DL2110
		11 kW	15 kW	3G3AX-DL2150
		15 kW	18.5 kW	3G3AX-DL2220
	1-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-DL2002
		0.2 kW	0.4 kW	3G3AX-DL2004
		0.4 kW	0.55 kW	3G3AX-DL2007
		0.75 kW	1.1 kW	3G3AX-DL2015
		1.5 kW	2.2 kW	3G3AX-DL2022
		2.2 kW	3.0 kW	3G3AX-DL2037
	3-phase 400 VAC	0.4 kW	0.75 kW	3G3AX-DL4007
		0.75 kW	1.5 kW	3G3AX-DL4015 *
		1.5 kW	2.2 kW	3G3AX-DL4022
		2.2 kW	3.0 kW	3G3AX-DL4037
		3.0 kW	4.0 kW	3G3AX-DL4055
		4.0 kW	5.5 kW	3G3AX-DL4075 *
		5.5 kW	7.5 kW	3G3AX-DL4110 *
		7.5 kW	11 kW	3G3AX-DL4150
		11 kW	15 kW	3G3AX-DL4220
		15 kW	18.5 kW	3G3AX-DL4220
		0.1 kW	0.2 kW	3G3AX-AL2025
		0.2 kW	0.4 kW	
		0.4 kW	0.75 kW	
		0.75 kW	1.1 kW	
AC Reactor	3-phase 200 VAC	1.5 kW	2.2 kW	3G3AX-AL2055
		2.2 kW	3.0 kW	3G3AX-AL2110
		3.7 kW	5.5 kW	3G3AX-AL2110 *
		5.5 kW	7.5 kW	3G3AX-AL2220
		7.5 kW	11 kW	3G3AX-AL2220 *
		11 kW	15 kW	3G3AX-AL2330
		15 kW	18.5 kW	3G3AX-AL2330
	1-phase 200 VAC	0.1 kW	0.2 kW	3G3AX-AL2025
		0.2 kW	0.4 kW	
		0.4 kW	0.55 kW	
		0.75 kW	1.1 kW	
		1.5 kW	2.2 kW	3G3AX-AL2055 *
		2.2 kW	3.0 kW	3G3AX-AL2110
	3-phase 400 VAC	0.4 kW	0.75 kW	3G3AX-AL4025
		0.75 kW	1.5 kW	3G3AX-AL4055
		1.5 kW	2.2 kW	
		2.2 kW	3.0 kW	
		3.0 kW	4.0 kW	
		4.0 kW	5.5 kW	3G3AX-AL4110
		5.5 kW	7.5 kW	3G3AX-AL4110 *
		7.5 kW	11 kW	3G3AX-AL4220
		11 kW	15 kW	3G3AX-AL4220 *
		15 kW	18.5 kW	3G3AX-AL4330

* Only the CT rating is supported.

Note: When using the Inverter for light load rating, select the model with one size larger capacity (rated current).

External Digital Operator

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

Recommended EtherCAT Communications Cables

Category 5 or higher (100BASE-TX) straight cable with double shielding (aluminum tape and braided shielding) is recommended.

Cabel with Connectors**Wire Gauge and Number of Pairs: AWG22, 2-pair Cable**

Item	Appearance	Recommended manufacturer	Cable length(m)	Model
Cable with Connectors on Both Ends (RJ45/RJ45)		OMRON	0.3	XS5W-T421-AMD-K
			0.5	XS5W-T421-BMD-K
			1	XS5W-T421-CMD-K
			2	XS5W-T421-DMD-K
			5	XS5W-T421-GMD-K
			10	XS5W-T421-JMD-K
Cable with Connectors on Both Ends (M12/RJ45)		OMRON	0.3	XS5W-T421-AMC-K
			0.5	XS5W-T421-BMC-K
			1	XS5W-T421-CMC-K
			2	XS5W-T421-DMC-K
			5	XS5W-T421-GMC-K
			10	XS5W-T421-JMC-K

Note: The cable length 0.3, 0.5, 1, 2, 3, 5, 10 and 15m are available. For details, refer to Cat.No.G019.

Cables / Connectors**Wire Gauge and Number of Pairs: AWG24, 4-pair Cable**

Item	Appearance	Recommended manufacturer	Model
Cables	—	Tonichi Kyosan Cable, Ltd.	NETSTAR-C5E SAB 0.5 x 4P *
	—	Kuramo Electric Co.	KETH-SB *
	—	SWCC Showa Cable Systems Co.	FAE-5004 *
RJ45 Connectors	—	Panduit Corporation	MPS588 *

* We recommend you to use above cable and connector together.

Wire Gauge and Number of Pairs: AWG22, 2-pair Cable

Item	Appearance	Recommended manufacturer	Model
Cables	—	Kuramo Electric Co.	KETH-PSB-OMR *
RJ45 Assembly Connector		OMRON	XS6G-T421-1 *

* We recommend you to use above cable and connector together.

Note: Connect both ends of cable shielded wires to the connector hoods.

Multi-function Compact Inverter 3G3MX2

Software

How to Select Required Support Software for Your Controller

The required Support Software depends on the Controller to connect. Please check the following table when purchasing the Support Software.

Item	Omron PLC System	Omron Machine Automation Controller System
Controller	CS, CJ, CP, and other series	NJ-series
Inverter	Inverter MX2-series Inverter MX2-series with CompoNet Communication Unit Inverter MX2-series with DeviceNet Communication Unit	Inverter MX2-series with EtherCAT Communication Unit
Software	FA Integrated Tool Package CX-One	Automation Software Sysmac Studio

FA Integrated Tool Package CX-One

Product name	Specifications			Model	Standards
		Number of licenses	Media		
FA Integrated Tool Package CX-One Ver. 4.□	The CX-One is a comprehensive software package that integrates Support Software for OMRON PLCs and components. CX-One runs on following OS. OS: Windows XP (Service Pack 3 or higher), Vista or 7 Note: Except for Windows XP 64-bit version. CX-One Version.4.□ includes CX-Drive Ver.2.□. 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).

Automation Software Sysmac Studio

Please purchase a DVD and required number of licenses the first time you purchase the Sysmac Studio. DVDs and licenses are available individually. Each model of licenses does not include any DVD.

Product name	Specifications			Model	Standards
		Number of licenses	Media		
Sysmac Studio Standard Edition Ver.1.□□	The Sysmac Studio provides an integrated development environment to set up, program, debug, and maintain NJ-series Controllers and other Machine Automation Controllers, as well as EtherCAT slaves. Sysmac Studio runs on the following OS. Windows XP (Service Pack 3 or higher, 32-bit version)/ Vista (32-bit version) / 7 (32-bit/64-bit version)	— (Media only)	DVD	SYSMAC-SE200D	—
	The Sysmac Studio Standard Edition DVD includes Support Software to set up EtherNet/IP Units, DeviceNet slaves, Serial Communications Units, and Support Software for creating screens on HMIs (CX-Designer). For details, refer to the Sysmac Integrated Catalogue (P072).	1 license *	—	SYSMAC-SE201L	—

* Multi licenses are available for the Sysmac Studio (3, 10, 30, or 50 licenses).

Related Manuals

Man. No.	Model	Manual
I570	3G3MX2	Multi-function Compact Inverter MX2-series USER'S MANUAL
I574	3G3AX-MX2-ECT	EtherCAT Communication Unit USER'S MANUAL
I581	3G3AX-MX2-DRT-E *	MX2 series DeviceNet Communication Unit USER'S MANUAL
I582	3G3AX-MX2-CRT-E	MX2 series CompoNet Communication Unit USER'S MANUAL
W487	CJ1W-NC□81/CJ1W-NC□82	CJ-series Position Control Unit Operation Manual
W463	CXONE-AL□□C/D-V□	CX-One FA Integrated Tool Package Setup Manual
W446	CXONE-AL□□C-V□/AL□□D-V□	CX-Programmer Operation Manual
W453	CXONE-AL□□C/D-V□/WS02-DRVC01	CX-Drive OPERATION MANUAL
W504	SYSMAC-SE2□□□	Sysmac Studio Version 1 Operation Manual

* MX2-series DeviceNet communication unit is available soon.

Read and Understand this Catalog

Please read and understand this catalog before purchasing the product. Please consult your OMRON representative if you have any questions or comments.

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