

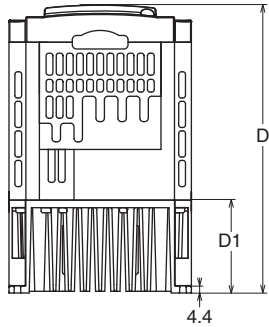
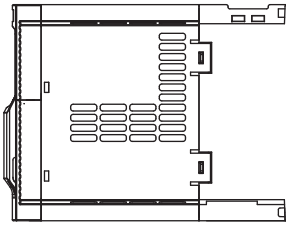
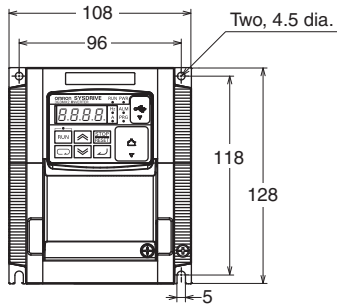
# Multi-function Compact Inverter MX2-Series V1 type

## Function Specifications

Function name		Specifications
<b>Enclosure ratings *1</b>		Open type (IP20)
<b>Control</b>	<b>Control method</b>	Phase-to-phase sinusoidal modulation PWM
	<b>Output frequency range *2</b>	0.10 to 400 Hz (or 580 Hz in the high-frequency mode; restrictions apply)
	<b>Frequency precision *3</b>	Digital command: $\pm 0.01\%$ of the max. frequency, Analog command: $\pm 0.2\%$ of the max. frequency ( $25 \pm 10^\circ\text{C}$ )
	<b>Frequency setting resolution</b>	Digital setting: 0.01 Hz, Analog setting: One-thousandth of the maximum frequency
	<b>Voltage/Frequency characteristics</b>	V/f characteristics (constant/reduced torque) Sensorless vector control, V/f control with speed feedback
	<b>Overload current rating</b>	Heavy load rating (CT): 150%/60 s Light load rating (VT): 120%/60 s
	<b>Instantaneous overcurrent protection</b>	200% of the value of heavy load rating (CT)
	<b>Acceleration/Deceleration time</b>	0.01 to 3600 s (linear/curve selection), acceleration/deceleration 2 setting available
	<b>Carrier frequency adjustment range</b>	2 to 15 kHz (with derating)
	<b>Starting torque</b>	200%/0.5 Hz (sensorless vector control)
	<b>External DC injection braking</b>	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).
<b>Protective functions</b>		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.
<b>Input signal</b>	<b>Frequency settings</b>	Digital Operator External analog input signal: 0 to 10 VDC/4 to 20 mA, Modbus communication (Modbus-RTU)
	<b>RUN/STOP command</b>	Digital Operator External digital input signal (3-wire input supported), Modbus communication (Modbus-RTU)
	<b>Multi-function input</b>	7 points (Selectable from 59 functions)
	<b>Analog input</b>	2 points (Voltage FV terminal: 10 bits/0 to 10 V, Current FI terminal: 10 bits/4 to 20 mA)
	<b>Pulse input</b>	1 point (RP terminal: 32 kHz max., 5 to 24 VDC)
<b>Output signal</b>	<b>Multi-function output</b>	2 points (P1/EDM, P2; selectable from 43 functions)
	<b>Relay output</b>	1 point (1c contact: MC, MA, MB; selectable from 43 functions)
	<b>Analog output (Frequency monitor)</b>	1 point (AM terminal: Voltage 10 bits/0 to 10 V) (Frequency, current selectable)
	<b>Pulse output</b>	1 point (MP terminal: 32 kHz max., 0 to 10 V)
<b>Communications</b>	<b>RS-422</b>	RJ45 connector (for Digital Operator)
	<b>RS-485</b>	Control circuit terminal block, Modbus communication (Modbus-RTU)
	<b>USB</b>	USB1.1, mini-B connector
<b>Drive Programming *4</b>		Calculate, Logic, Control I/O and so on
<b>Other functions</b>		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.
<b>Operating environment</b>	<b>Ambient operating temperature</b>	-10 to 50°C (However, derating is required).
	<b>Ambient storage temperature</b>	-20°C to 65°C
	<b>Ambient operating humidity</b>	20% to 90% RH (with no condensation)
	<b>Vibration resistance</b>	5.9 m/s <sup>2</sup> (0.6G), 10 to 55 Hz
	<b>Application environment</b>	At a maximum altitude of 1,000 m; indoors (without corrosive gases or dust)
<b>Options</b>	<b>EtherCAT Communication Unit</b>	3G3AX-MX2-ECT
	<b>CompoNet Communication Unit</b>	3G3AX-MX2-CRT-E
	<b>DeviceNet Communication Unit</b>	3G3AX-MX2-DRT-E

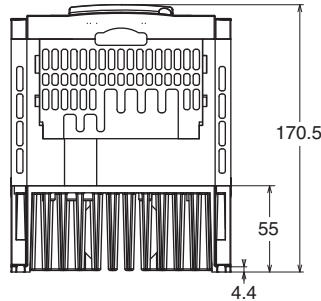
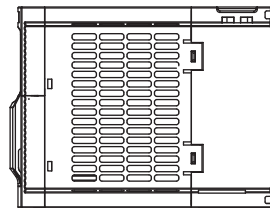
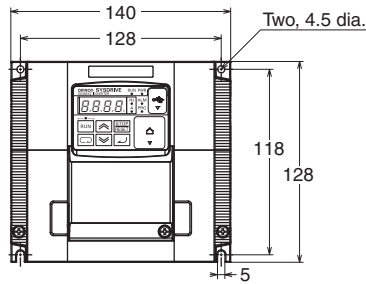
# Multi-function Compact Inverter MX2-Series V1 type

- 3G3MX2-AB007-V1
- 3G3MX2-AB015-V1
- 3G3MX2-AB022-V1
- 3G3MX2-A2015-V1
- 3G3MX2-A2022-V1
- 3G3MX2-A4004-V1
- 3G3MX2-A4007-V1
- 3G3MX2-A4015-V1
- 3G3MX2-A4022-V1
- 3G3MX2-A4030-V1



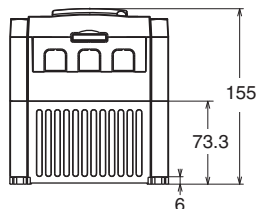
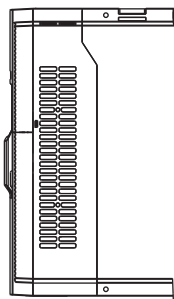
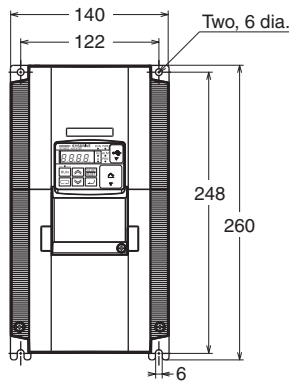
Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
1-phase 200 V	3G3MX2-AB007-V1	108	128	170.5	55
	3G3MX2-AB015-V1				
	3G3MX2-AB022-V1				
3-phase 200 V	3G3MX2-A2015-V1			143.5	28
	3G3MX2-A2022-V1				
	3G3MX2-A4004-V1				
3-phase 400 V	3G3MX2-A4007-V1	170.5	55		
	3G3MX2-A4015-V1				
	3G3MX2-A4022-V1				
	3G3MX2-A4030-V1				

- 3G3MX2-A2037-V1
- 3G3MX2-A4040-V1



Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
3-phase 200 V	3G3MX2-A2037-V1	140	128	170.5	55
3-phase 400 V	3G3MX2-A4040-V1				

- 3G3MX2-A2055-V1
- 3G3MX2-A2075-V1
- 3G3MX2-A4055-V1
- 3G3MX2-A4075-V1



Power supply	Model	W [mm]	H [mm]	D [mm]	D1 [mm]
3-phase 200 V	3G3MX2-A2055-V1	140	260	155	73.3
	3G3MX2-A2075-V1				
3-phase 400 V	3G3MX2-A4055-V1				
	3G3MX2-A4075-V1				

# Multi-function Compact Inverter **MX2-Series V1 type**

## 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, SDO responses, and 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/NX series and the automation software Sysmac Studio.

## 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 (To connect the NJ Controller)		Version1.05 or higher*	Version1.05 or higher
Compatible Sysmac Studio version (To connect the NX Controller)		Version1.13 or higher*	Version1.13 or higher

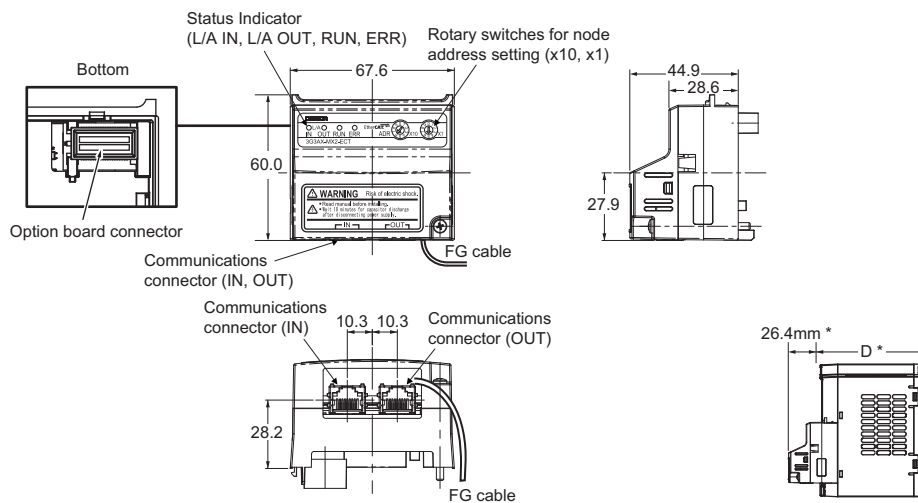
\* The function that was enhanced by the upgrade for Unit version1.1 can not be used. For detail, refer to "Function Support by Unit Version".

## Function Support by Unit Version

Unit	Unit version	Unit version 1.0	Unit version 1.1
Model			
Item			
Store-function of back-up number of parameters		Not supported	Supported
Initializing function as parameters.		Not supported	Supported

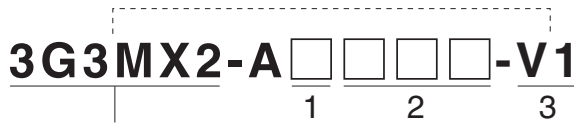
## Dimensions (Unit: mm)

### 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 V1 type USER'S MANUAL (Cat.No.I585))

## Interpreting Model Numbers



MX2 Series V1 type

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

3) Area

-V1	Japan and areas other than China and Europe
-ZV1	China
-E	Europe

## Ordering Information

### 3G3MX2 Inverter Models

**Note:** Inverters with model numbers ending in "-V1" are designed to be used in areas other than China and Europe. Refer to the above "Interpreting Model Numbers" for the model numbers for China and Europe.

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-V1
		0.2 kW	0.4 kW	3G3MX2-A2002-V1
		0.4 kW	0.75 kW	3G3MX2-A2004-V1
		0.75 kW	1.1 kW	3G3MX2-A2007-V1
		1.5 kW	2.2 kW	3G3MX2-A2015-V1
		2.2 kW	3.0 kW	3G3MX2-A2022-V1
		3.7 kW	5.5 kW	3G3MX2-A2037-V1
		5.5 kW	7.5 kW	3G3MX2-A2055-V1
		7.5 kW	11 kW	3G3MX2-A2075-V1
		11 kW	15 kW	3G3MX2-A2110-V1
3-phase 400 VAC	IP20	0.4 kW	0.75 kW	3G3MX2-A4004-V1
		0.75 kW	1.5 kW	3G3MX2-A4007-V1
		1.5 kW	2.2 kW	3G3MX2-A4015-V1
		2.2 kW	3.0 kW	3G3MX2-A4022-V1
		3.0 kW	4.0 kW	3G3MX2-A4030-V1
		4.0 kW	5.5 kW	3G3MX2-A4040-V1
		5.5 kW	7.5 kW	3G3MX2-A4055-V1
		7.5 kW	11 kW	3G3MX2-A4075-V1
		11 kW	15 kW	3G3MX2-A4110-V1
		15 kW	18.5 kW	3G3MX2-A4150-V1
1-phase 200 VAC	IP20	0.1 kW	0.2 kW	3G3MX2-AB001-V1
		0.2 kW	0.4 kW	3G3MX2-AB002-V1
		0.4 kW	0.55 kW	3G3MX2-AB004-V1
		0.75 kW	1.1 kW	3G3MX2-AB007-V1
		1.5 kW	2.2 kW	3G3MX2-AB015-V1
		2.2 kW	3.0 kW	3G3MX2-AB022-V1

## Communication Unit

Name	Model
EtherCAT Communication Unit	3G3AX-MX2-ECT
CompoNet Communication Unit	3G3AX-MX2-CRT-E
DeviceNet Communication Unit	3G3AX-MX2-DRT-E