

INSTRUCTION SHEET

Thank you for purchasing an OMRON product. Read this thoroughly and familiarize yourself with the functions and characteristics of the product before using it. Keep this instruction sheet for future reference.



OMRON Corporation

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Option Board Description

The 3G3AX-MX2-EIO15-E is an option board that can be attached to an MX2-A□ series inverter. The 3G3AX-MX2-EIO15-E provides extra inputs and outputs to the inverter:

- 1x Analog Voltage Input
- 1x Analog Current Input
- 1x Analog Voltage Output
- 8x Discrete Logic Inputs
- 4x Discrete Logic Outputs

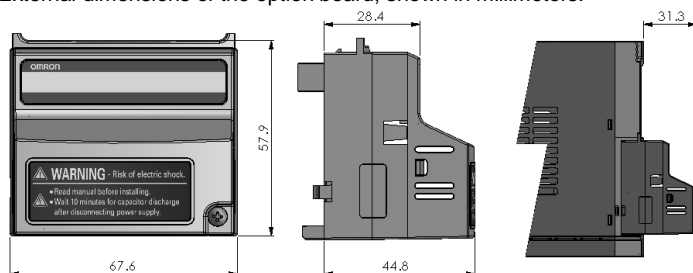
Controlling, monitoring and configuration of the extra inputs and outputs can be done via the MX2 Drive programming (EzSQ).

General Specifications

Item	Specifications
Ambient operating temperature	See MX2 series User's manual.
Ambient operating humidity	See MX2 series User's manual.
Storage temperature	-20 °C to 65 °C
Weight	170g

External Dimensions

External dimensions of the option board, shown in millimeters:



General Precautions

The user must operate the product according to the performance specifications described in this instruction sheet and in the operation manual of the inverter.

Before using the product under conditions which are not described in the inverter manual or applying the product to nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment, amusement machines, safety equipment, and other systems, machines, and equipment that may have a serious influence on lives and property if used improperly, consult your OMRON representative.

Make sure that the ratings and performance characteristics of the product are sufficient for the systems, machines, and equipment, and be sure to provide the systems, machines, and equipment with double safety mechanisms.

- The MX2-A□ inverter with a mounted 3G3AX-MX2-EIO15-E option board is a general purpose product combination. It is a system component and is used in conjunction with other items of industrial equipment such as PLCs.
- A detailed system analysis and job safety analysis should be performed by the system designer or system integrator before including the inverter option board combination in any new or existing system. Consult your OMRON representative for application specific system integration information if required.
- The product will be used to control an adjustable speed drive connected to high voltage sources and rotating machinery that is inherently dangerous if not operated safely. Interlock all energy sources, hazardous locations, and guards in order to restrict the exposure of personnel to hazards. The adjustable speed drive may start the motor without warning. Signs on the equipment installation must be posted to this effect. A familiarity with auto-restart settings is a requirement when controlling adjustable speed drives. Failure of external or ancillary components may cause intermittent system operation, i.e., the system may start the motor without warning or may not stop on command. Improperly designed or improperly installed system interlocks and permissives may render a motor unable to start or stop on command.
- This Instruction Sheet does not contain illustrations of the product with protective covers removed from the MX2-A□ inverter. Make sure that these protective covers are on the inverter before use.

Safety Precautions

Definition of Precautionary Information

- WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. Additionally, there may be severe property damage.
- Caution** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury, or property damage.

Warnings and Cautions

- WARNING** Do not attempt to take an option board apart or touch any internal parts while the power is being supplied. Doing so may result in electric shock.
- WARNING** Do not touch the conductive parts such as the internal PCB or connector while power is being supplied. Doing so may result in electrical shock.
- WARNING** Do not attempt to disassemble, repair, or modify an option board. Any attempt to do so may result in malfunction, fire, or electric shock.
- WARNING** Wiring, maintenance or inspection must be performed by authorized personnel. Not doing so may result in electrical shock or fire.
- WARNING** Turn OFF the power supply before performing wiring, maintenance or inspection. Wait for the time specified on the Inverter front cover for the capacitors to discharge. Not doing so may result in electrical shock.
- WARNING** Provide safety measures in external circuits, i.e. not in the option board. This ensures safety in the system if an abnormality occurs due to malfunction of the option board or another external factor affecting the option board operation. Not doing so may result in serious accidents.

- WARNING** Refer to the section "MX2 Inverter Safety (ISO 13849-1)" for details if the safety measures mentioned in the previous warning are to be ensured using the Gate Suppress function of the MX2-A□ inverter.
- WARNING** Emergency stop circuits, interlock circuits, limit circuits, and similar safety measures must be provided in external control circuits.
- WARNING** Fail-safe measures must be taken by the customer to ensure safety in the event of incorrect, missing, or abnormal signals caused by broken signal lines, momentary power interruptions, or other causes. Not doing so may result in serious accidents.
- Caution** The digital outputs of the option board must not be considered as safety related signals. The outputs of the external safety relay must be used for integration into a safety related control/command circuit.
- Caution** Do not touch the inverter during power-on, and immediately after power-off. Hot surface may cause injury.

Operating Environment Precautions

- Caution** Do not operate the MX2-A□ inverter with a mounted 3G3AX-MX2-EIO15-E option board in the following locations (doing so may result in malfunction, electric shock or burning):
 - Locations subject to direct sunlight
 - Locations subject to temperatures or humidity outside the range specified in the specifications
 - Locations subject to condensation as the result of severe changes in temperature
 - Locations subject to corrosive or flammable gases
 - Locations subject to dust (especially iron dust) or salts
 - Locations subject to exposure to water, oil, or chemicals
 - Locations subject to shock or vibration

- Caution** Take appropriate and sufficient countermeasures when installing systems in the following locations (doing so may result in malfunction):
 - Locations subject to static electricity or other forms of noise
 - Locations subject to strong electromagnetic fields
 - Locations subject to possible exposure to radioactivity
 - Locations close to power supplies

- Caution** The operating environment of the MX2-A□ inverter with a mounted 3G3AX-MX2-EIO15-E option board can have a large effect on the longevity and reliability of the system. Improper operating environments can lead to malfunction, failure, and other unforeseeable problems with the system. Make sure that the operating environment is within the specified conditions at installation and remains within the specified conditions during the life of the system.

Application Precautions

- Caution** Failure to abide by the following precautions could lead to faulty operation of the option board or the inverter, or could damage either of the two. Always read these precautions.
 - Wire correctly using recommended cables. Incorrect wiring may result in burning.
 - Be sure that the option board is mounted correctly. Improper mounting may result in malfunction.
 - Be sure to mount the IO Connector correctly. Improper mounting may result in malfunction.
 - When replacing an inverter be sure that all inverter settings and programs of the inverter being replaced are restored to the replacement.
 - Check the inverter's Drive Program and its interaction with the option board before actually running it on the inverter. Not checking the program may result in unexpected operation.

- Disconnect the grounding cable when performing withstand voltage tests. Not disconnecting the grounding cable may result in burning.
- Do not connect an insulation tester (megger) to any terminal of the IO connector. Doing so may damage to option board or the inverter.
- Install external breakers and take other safety measures against short-circuits in external wiring. Not observing this may result in burning.
- Do not allow metal clippings to enter either option board or inverter when wiring or installing the unit.
- Do not use excessive force when connecting or disconnecting the I/O-cable. Do not pull on the I/O-cable.
- Check that the I/O connector is wired correctly before the MX2-A□ inverter is powered on.
- Maintain the voltages and currents of the option board inputs/outputs within specifications. Exceeding the specifications may damage the option board or the inverter.

Handling, Storage and Disposal

- Before touching the option board or inverter, be sure to first touch a grounded metallic object in order to discharge any static built-up. Not doing so may result in malfunction or damage.
- When transporting or storing the option board, cover the PCBs with electrically conductive materials to prevent electronic components from being damaged by static electricity. Also keep the product within the specified storage temperature range.
- Never dispose electrical components by incineration. Contact your state environmental agency for details on disposal of electrical components and packaging in your area.

Compliance with EC Directives

- This product complies with EC Directives when mounted on an MX2-A□ inverter and having connected the grounding cable. For grounding, cable selection, and any other conditions for EMC compliance, refer to the MX2 User's Manual for installation.

MX2 Inverter Safety (ISO 13849-1)

- MX2-A□ inverters provide the Gate Suppress function to perform a safe stop according to the EN60204-1, stop category 0. This option board has been designed not to interfere with this safety function.

References

Please be sure to read the related user manuals to use the 3G3AX-MX2-EIO15-E option board safely and properly. Be sure you are using the most current version of the manual.

Name	Cat No.
MX2 series User's Manual	I570
CX-Drive Operation Manual	W453
Drive Programming User's Manual	I170

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products. Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used. Please know and observe all prohibitions of use applicable to the products. NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM. See also product catalogs for Warranty and Limitations of Liability.

