

9000-XBAY

External IDE Expansion Bay

Installation Guide

Revision	Description	Date
A	Manual Released	8/03

Part Number 143055 (A)

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United States FCC Part 15, Subpart B, Class A EMI Compliance Statement:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

For European Users - WARNING:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

INSTALLATION: Electromagnetic Compatibility WARNING:

The connection of non-shielded equipment interface cables to this equipment will invalidate FCC EMI and European Union EMC compliance and may result in electromagnetic interference and/or susceptibility levels which are in violation of regulations applying to the legal operation of this device. It is the responsibility of the system integrator and/or user to apply the following directions relating to installation and configuration:

All interface cables must include shielded cables. Braid/foil type shields are recommended. Communication cable connectors must be metal, ideally zinc die-cast backshell types, and provide 360-degree protection about the interface wires. The cable shield braid must be terminated directly to the metal connector shell, ground drain wires alone are not adequate.

Protective measures for power and interface cables as described within this manual must be applied. Do not leave cables connected to unused interfaces or disconnected at one end. Changes or modifications to this device not expressly approved by the manufacturer could void the user's authority to operate the equipment.

EMC compliance is, in part, a function of PCB design. Third party add-on AT/XT peripheral PCB assemblies installed within this apparatus may void EMC compliance. FCC/CE compliant PCB assemblies should always be used where possible. XYCOM AUTOMATION can accept no responsibility for the EMC performance of this apparatus after system integrator/user installation of PCB assemblies not manufactured and/or expressly tested and approved for compliance by XYCOM AUTOMATION. It is the responsibility of the system integrator/user to ensure that installation and operation of such devices does not void EMC compliance.

Installing the 9000-XBAY

The rugged design of the 9000-XBAY allows it to be installed in most industrial environments. The system is generally placed in a NEMA 4/4X/12 enclosure to protect against contaminants such as dust, moisture, etc. Metal enclosures also help minimize the effects of electromagnetic radiation that nearby equipment can generate.

System Power

Using isolation transformers on the incoming AC power line to the system is always good practice. An isolation transformer is especially desirable in cases in which heavy equipment is likely to introduce noise onto the AC line. The isolation transformer can also serve as a step-down transformer to reduce the incoming line voltage to a desired level. The transformer should have a sufficient power rating (units of volt-amperes) to supply the load adequately.

Proper grounding is essential to all safe electrical installations. Refer to the relevant federal, state/provincial, and local electric codes, which provide data such as the size and types of conductors, color codes and connections necessary for safe grounding of electrical components. The code specifies that a grounding path must be permanent (no solder), continuous, and able to safely conduct the ground-fault current in the system with minimal impedance (minimum wire required is 18 AWG, 1 mm).

Observe the following practices:

- Separate ground wires (P.E. or Protective Earth) from power wires at the point of entry to the enclosure. To minimize the ground wire length within the enclosure, locate the ground reference point near the point of entry for the plant power supply.
- All electrical racks or chassis and machine elements should be Earth Grounded in installations where high levels of electrical noise can be expected. The rack/chassis should be grounded with a ground rod or attached to a nearby Earth structure such as a steel support beam. Connect each different apparatus to a single Earth Ground point in a “star” configuration with low impedance cable. Scrape away paint and other nonconductive material from the area where a chassis makes contact with the enclosure. In addition to the ground connection made through the mounting bolt or stud, use a one-inch metal braid or size #8 AWG wire to connect between each chassis and the enclosure at the mounting bolt or stud.

Electrical Noise

Electrical noise is seldom responsible for damaging components, unless extremely high energy or high voltage levels are present. However, noise can cause temporary malfunctions, which can result in hazardous machine operation in certain applications. Noise may be present only at certain times, may appear as widely spread intervals, or in some cases may exist continuously.

Noise commonly enters through input, output, and power supply lines and may also be coupled through the capacitance between these lines and the noise signal carrier lines. This usually results from the presence of high voltage or long, close-spaced conductors. When control lines are closely spaced with lines carrying large currents, the coupling of magnetic fields can also occur. Use shielded cables to help minimize noise. Potential noise generators include switching components relays, solenoids, motors, and motor starters.

Refer to the relevant Federal, State/Provincial, and local electric codes, which provide data such as the size and types of conductors, color codes and connections necessary for safe grounding of electrical components. It is recommended that high- and low-voltage cabling be separated and dressed apart. In particular, AC cables and switch wiring should not be in the same conduit with all communication cables.

Line Voltage Variation

The power supply section of the unit is built to sustain line fluctuations of 90-250 VAC and still allow the system to function within its operating margin. As long as the incoming voltage is adequate, the power supply provides all the logic voltages necessary to support the processor, memory, and I/O.

When the installation is subject to unusual AC line variations, use a constant voltage transformer to prevent the system from shutting down too often. However, a first step toward the solution of the line variations is to correct any possible feed problem in the distribution system. If this correction does not solve the problem, use a constant voltage transformer.

The constant voltage transformer stabilizes the input voltage to the systems by compensating for voltage changes at the primary in order to maintain a steady voltage at the secondary. When using a constant voltage transformer, check that the power rating is sufficient to supply the unit.

Mounting Considerations

Once you have established a location for the unit, consider the following when selecting an enclosure:

- Select a NEMA-rated enclosure, and place the unit to allow easy access to the system ports.
- Account for the unit's depth when choosing the depth of the enclosure.
- If the NEMA mounting option is chosen, provide a NEMA 4 seal by mounting the unit in an approved enclosure that has a 14 gauge (0.075"/1.9 mm thick) steel or (0.125"/3.2 mm thick) aluminum front face.
- Mount the unit in an upright position.
- Place the unit at a comfortable working level.
- Consider locations of accessories such as AC power outlets and lighting (interior lighting and windows) for installation and maintenance convenience.

- Prevent condensation by installing a thermostat-controlled heater or air conditioner.
- Avoid obstructing the airflow to allow for maximum cooling.
- Place any fans or blowers close to the heat-generating devices. If using a fan, make sure that outside air is not brought inside the enclosure unless a fabric or other reliable filter is used. This filtration prevents conductive particles or other harmful contaminants from entering the enclosure.
- Do not select a location near equipment that generates excessive electromagnetic interference (EMI) or radio frequency interface (RFI) (equipment such as high- power welding machines, induction heating equipment, and large motor starters).
- Do not place incoming power line devices (such as isolation or constant voltage transformers, local power disconnects, and surge suppressers) near the system. The proper location of incoming line devices keeps power wire runs as short as possible and minimizes electrical noise transmitted to the unit.
- Make sure the location does not exceed the unit's shock, vibration, and temperature specifications.
- Install the unit in the panel in such a way as to ensure that it does not cause a hazard from uneven mechanical loading.
- Incorporate a readily accessible disconnect device in the fixed wiring on permanently connected equipment.
- Avoid overloading the supply circuit.

Mounting the Unit

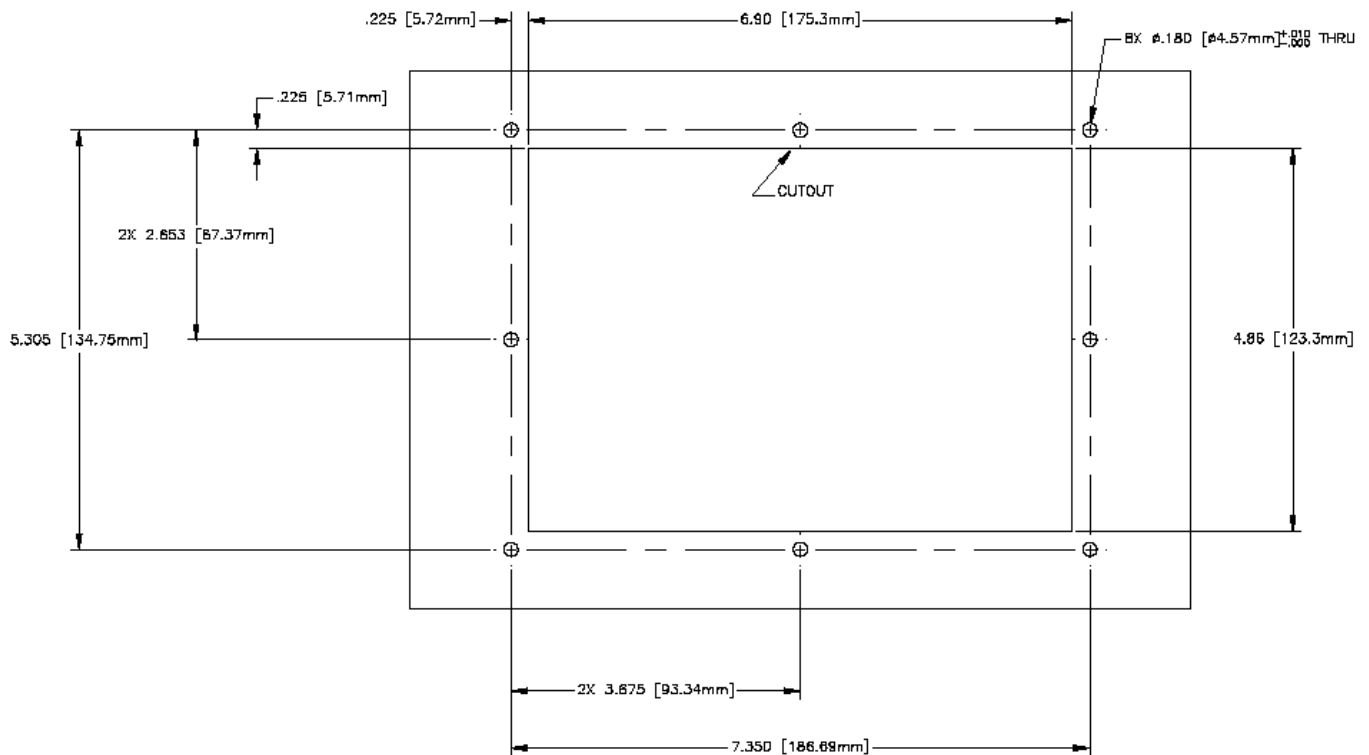
The 9000-XBAY can be mounted in a variety of ways. Once the conditions in the preceding sections have been met, perform the following steps for your mounting preference:

- Panel mount with a NEMA 4/4X/12 seal
- Panel mount without a NEMA 4/4X/12 seal
- Wall or shelf mount

Panel mount with a NEMA 4/4X/12 seal

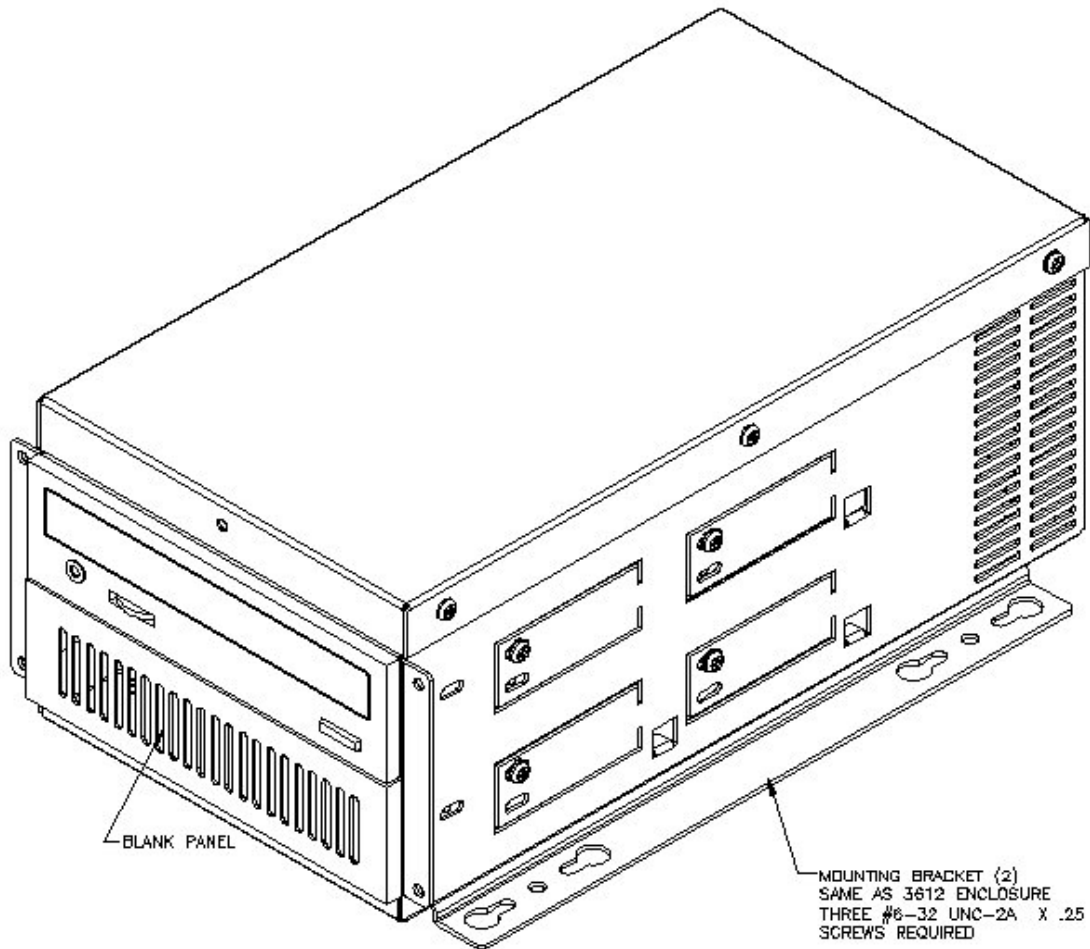
Once the conditions in the preceding sections have been met, follow the instructions below to mount the unit:

1. Locate a position for your system that meets the specifications required.
2. Cut the hole according to the cutout dimensions in the figure below.
3. Make sure the area around the cutout is clean and free from metal burrs.
4. Install the unit.
5. Attach the power cable making sure that the system's enclosure is grounded through the power cable.
6. Tighten the 8-#10 nuts to 25 lbs-inch (2.8 Newton-meters) (28Kgf cm).



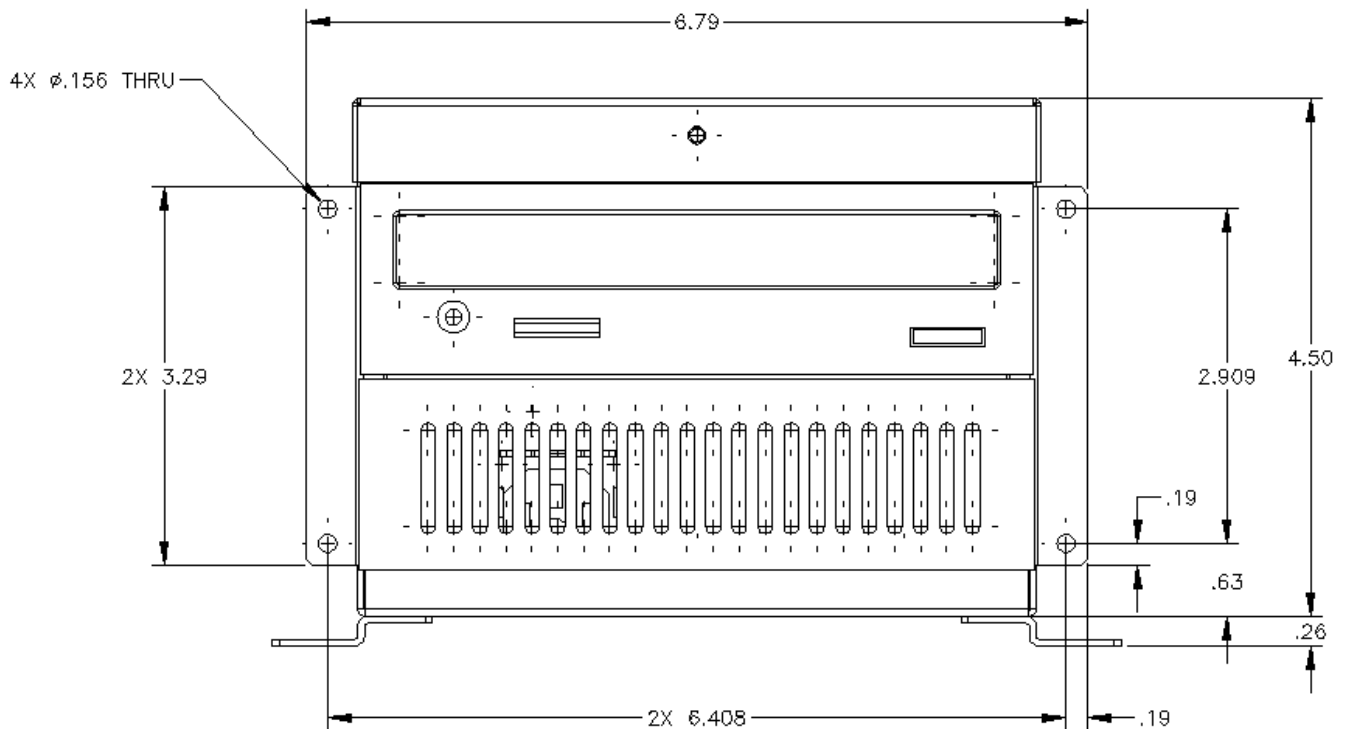
Panel mount without a NEMA 4/4X/12 seal

When the 9000-XBAY is ordered without the NEMA 4/4X/12 option, it is provided with ears for both panel mounted in a cutout, and wall or shelf mounting (see figure below).



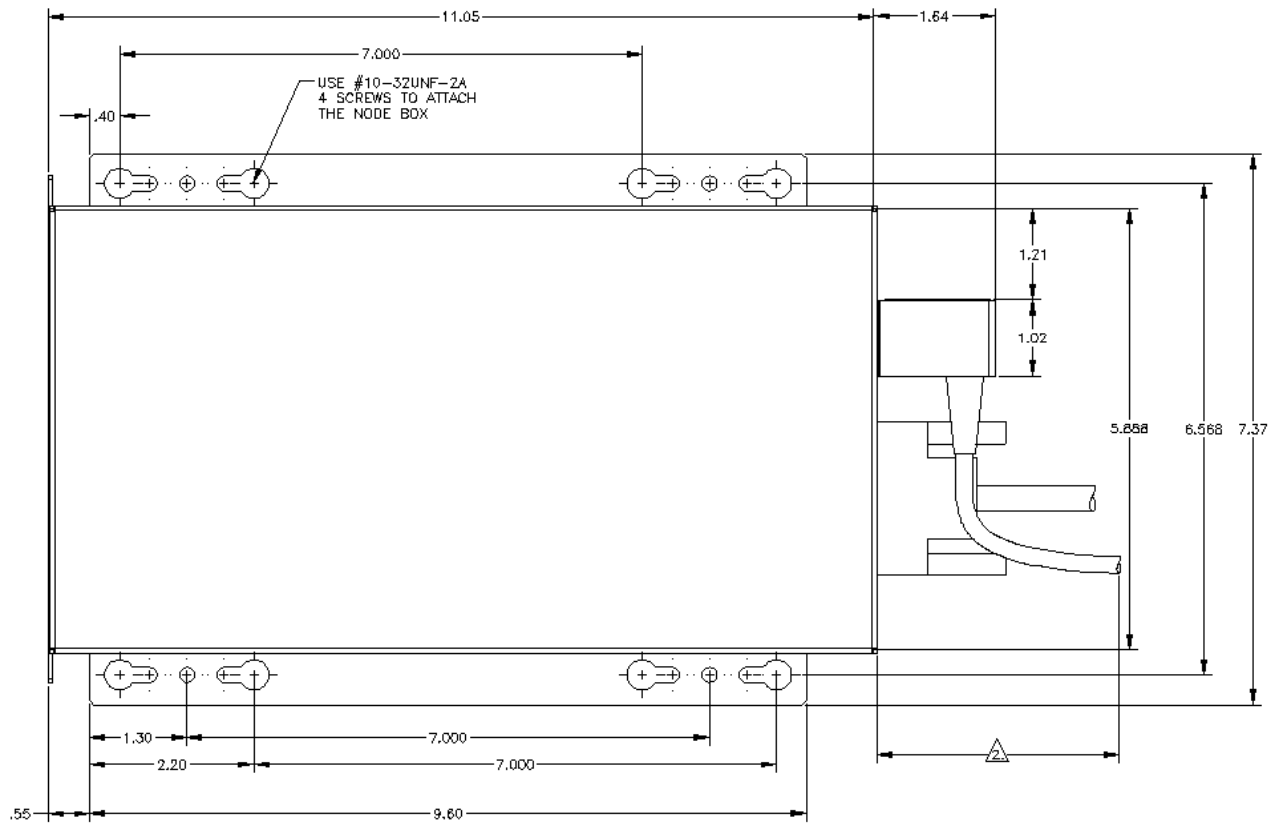
Panel mount without a NEMA 4/4X/12 seal

1. Locate a position for your system that meets the specifications required.
2. Cut the hole according to the cutout dimensions in the figure below.
3. Make sure the area around the cutout is clean and free from metal burrs.
4. Install the unit.
5. Attach the power cable making sure that the system's enclosure is grounded through the power cable.
6. Tighten the 4-#6 screws to 11 lbs-inch.



Wall or shelf mount

1. Locate a position for your system that meets the specifications required.
2. Attach the two wall mounting ears using the six supplied 6-32 screws.
3. Drill the mounting holes according to the dimensions in the figure below.
4. Install the unit.
5. Attach the power cable making sure that the system's enclosure is grounded through the power cable.
6. Tighten the 4-#10 screws to 25 lbs-inch (2.8 Newton-meters) (28Kgf cm).



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