

1) General Information: the following general precautions for handling must be observed during all phases of operation and service of CAEN equipments. Failure to comply with these precautions or with specific warnings elsewhere in the product manual could result in personal injury or damage to the equipment. The precautions listed below represent warnings of certain dangers of which CAEN is aware. You, as the user of the product, should follow these warnings and all other safety precautions necessary for the safe operation of the equipment in your operating environment.

CAEN shall not be liable for user's failure to comply with these requirements







2) Conventions Used in This Document:

CAUTION indicates a hazard that could damage the equipments. Such damage may invalidate the warranty.

3) Safety Terms and Symbols on the Product: these terms may appear on the product:

- **DANGER:** indicates an injury hazard immediately accessible as you read the marking.
- **WARNING:** indicates an injury hazard not immediately accessible as you read the marking.
- **CAUTION:** indicates a hazard that could damage the product.

The following symbols may appear on the product:

 Caution, risk of danger ¹	 Caution, risk of electric shock	 Productive Conductor Terminal
 Earth (Ground) Terminal	 Alternating Current	 Three-Phase Alternating Current

¹ Refer to product manual.

4) Unpacking and Inspection:

CAUTION: observe precautions for handling electrostatic devices.

- Inspect containers for damage during shipment. Report any damage to the freight carrier for possible insurance claims.
- Check that all the components received match those listed on the enclosed packing list. (CAEN cannot accept responsibility for missing items unless we are notified promptly of any discrepancies.)
- Open shipping containers; be careful not to damage contents.
- Inspect contents and report any damage. The inspection should confirm that there is no exterior damage to the unit such as broken knobs or connectors and that the front panel and display face are not scratched or cracked. Keep all packing material until the inspection has been completed.
- If damage is detected, file a claim with carrier immediately and notify CAEN service.
- If equipment must be returned for any reason, carefully repack equipment in the original shipping container with original packing materials if possible. Please contact CAEN service.
- If equipment is to be installed later, replace equipment in original shipping container and store in a safe place until ready to install

5) ESD precautions: CAEN equipments may be classified as ESD sensitive item².

CAUTION: During long term or temporary storage the items shall be covered by ESD protective bags. Handling of the items without ESD protective covering shall be performed only into approved ESD Protected Area (EPAs); any operator shall be properly grounded (e.g. by wrist-straps) before handling the item. Avoid handling operations if the relative humidity is below 30% or take extra ESD safety precautions (such as redundant ground clips) if such handling is unavoidable.

² Excluded all the devices provided with independent case or chassis. Devices that consist of a circuit board with no case or chassis (e.g. VME, CAMAC, NIM modules or HV/LV Power supply boards) comply with the EMC directive if installed in a CE marked system.

6) Storage: CAEN equipments shall be handled and stored in a clean, dust free environment under the following conditions:

	Minimum	Maximum
Temperature	- 30° C	+ 80° C
RH (non-condensing)	5 %	90 %

7) Handling: CAEN equipments shall be handled only with lint-free gloves (e.g. nitrile); never touch the item with bare, ungloved hands.

CAUTION: do not subject the item to undue shock of vibrations; do not bump, drop or slide shipping containers. Do not leave items or shipping containers unsupervised in areas where untrained personnel may mishandle the items.

8) Cleaning: If required the equipments may be cleaned with isopropyl alcohol or deionised water and air dried. Clean the exterior of the product only. Do not apply cleaner directly to the items or allow liquids to enter or spill on the product.

9) Transport:

CAUTION: CAEN equipments can be safely transported in their original shipping packages.

10) Safety Precautions: exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. **A good safety practice is to expect that hazardous voltage is present in any unknown circuit before operating.** Warning label indicates HV sources which are hazardous to personnel; during test or integration all exposed HV connections shall be insulated or protected.

Before operating an instrument, make sure the line cord is connected to a properly grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided, in close proximity to the equipment and within easy reach of the operator. For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS disconnect power supply from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

CAUTION: The instrument and accessories must be used in accordance with its specifications and operating instructions or the safety of the equipment may be impaired.

CAUTION: Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information.

CAUTION: When fuses are used in a product, replace with same type and rating for continued protection against fire hazard.

11) Ventilation Requirements:

CAUTION: All power supplied CAEN NIM, VME and CAMAC modules must be used only with crates with forced cooling air flow.

CAEN modules without power supply, such as Attenuators and Delay units, do not require crates with forced cooling air flow.

CAUTION: Rack bound CAEN HV Power Supply Systems must be installed with a minimum 10cm space both above and below the system.

12) Medical Use: CAEN equipments are not designed with components and testing procedures that would ensure a level of reliability suitable for use in treatment and diagnosis of humans. These items are not intended to be a substitute for any form of established process or equipment used to monitor or safeguard human health and safety in medical treatment.

13) Installation & Operation: only qualified personnel should carry out installation, operation and maintenance procedures.

14) Operating Environmental Requirements:

	Minimum	Maximum
Temperature	0° C	+ 40° C
RH (non-condensing)	10 %	90 %

15) Installing devices with no case or chassis (e.g. VME, CAMAC, NIM modules or HV/LV Power supply boards):

CAUTION: CAEN strongly recommends that you use an antistatic wrist strap and a conductive foam pad when installing these items. After removing the devices from the system or its protective antistatic wrapper, place the component flat on a grounded, static-free surface (and in the case of a board, component side up). Do not slide the component over any surface. Do not stack units on top of each other.

CAUTION: these items should be inserted in the crate only after turning off the power to the crate³. Otherwise, damage to the module is possible due to momentary misalignment of pins on the card edge connector.

³ Excluded modules supporting live insertion/extraction into/from the crate.

CAUTION: To insert a module in the relative crate follow these steps:

- Choose a convenient I/O station.
- Hold the board firmly with both hands (if HV/LV Power supply boards).
- Align the PCB back side with one crate free slot rails.
- Start sliding gently the board along the rails.
- Pay attention to closer boards: insert the module carefully to avoid contacting boards to the right or left.
- Ensure that correct alignment is kept.
- Continue sliding the board holding it firmly.
- Ensure that sliding is smooth.
- Plug the board into Crate backplane connectors with gentle finger pressure.
- Ensure the correct backplane connectors mating.
- Complete installation by screw-locking the board front panel on the crate.

16) Repairs: may be executed by CAEN service only.