Safety Precautions

Safety Statement

1. When installing, operating, or maintaining the product, please read and comply with the precautions first.
2. To ensure personal and equipment safety, please follow all safety precautions specified in the product markings and manuals during product installation, operation, and maintenance.
3. The "Caution", "Warning", and "Danger" items in the manual do not represent all safety items that should be complied with, but only serve as a supplement to all safety precautions.
4. This product should be used in an environment that meets the requirements of the design specifications; otherwise, it may cause malfunctions. Functional abnormalities or component damage caused by non-compliance with relevant regulations are not covered by the product's Quality Assurance.
5. Our company will not assume any legal liability for personal safety accidents, property losses, etc. caused by the illegal operation of products.

Security Level Definition

	• **If not operated according to regulations, it is likely to cause dangerous conditions such as death, serious injury, and fire.**
	• **If not operated according to regulations, it may lead to dangerous conditions such as death, serious injury, and fire.**

	• **indicates that failure to operate in accordance with regulations may lead to medium or minor injuries and dangerous situations such as fires.**

❗ **Safety Precautions, please ensure compliance to guarantee safety.**

Overall Precautions

	• To ensure the safe use of the product, please be sure to read this manual. • Please keep this manual properly and ensure it is delivered to the end user. • Do not remove the outer cover, cables, connectors, or optional equipment while the servo unit is powered on. Otherwise, it may lead to electric shock, product shutdown, or burnout.
	• Please use under the power supply specifications (DC, voltage, current) that match the product, Otherwise, it may cause product burnout, electric shock, or fire. • Be sure to connect the grounding terminals of the servo unit and servo motor to the grounding electrode, Otherwise, it may cause electric shock or fire. • Do not disassemble, repair, or modify the product, Otherwise, it may lead to a fire or malfunction. Products that have been disassembled, repaired, or modified are not covered by the warranty. • Please have it correctly and standardly installed by a skilled technician, Otherwise, it may lead to electric shock or injury. • When starting operation after mechanical connection, please ensure that the equipment is in a state where it can be stopped immediately in case of an emergency. Otherwise, it may lead to injury. • Please absolutely do not touch the inside of the product, Otherwise, it may lead to electric shock.



- When power is on or just after the power is cut off, the heat sink of the servo unit, external regenerative resistor, servo motor, etc. may be in a high-temperature state. Please avoid accidental contact between your hands and the components.
- For the power cord, please use equipment with double insulation or reinforced insulation.

Otherwise, it may lead to electric shock.

- Do not damage or forcefully pull the cable, and do not subject the cable to excessive stress.

Otherwise, it may lead to malfunctions, damage, or electric shock.

- Do not use this product in places where water may splash, corrosive environments, flammable gas environments, or near combustibles.

Otherwise, it may lead to malfunctions, damage, or electric shock.

- Please set up an emergency stop circuit externally to ensure that the power is cut off and operation stops immediately when an abnormality occurs.
- When using in the case of poor power supply conditions, please install protective equipment (such as reactors) to ensure that the input power is supplied within the specified voltage fluctuation range.

Otherwise, it may cause damage to the servo unit.

- Please use noise filters or other means to reduce the impact of electromagnetic interference,

Otherwise, it may cause electromagnetic interference to electronic devices used near the servo unit.

- The servo unit and servo motor should be used in the specified combination.
- Do not touch the servo unit and servo motor with wet hands,

Otherwise, it will lead to product failure.

Unboxing and acceptance inspection



- If damage, rust, signs of use, or other issues are found on the product and its accessories during unpacking, do not install them.
- Do not install the product if water ingress, missing components, or damaged components are found inside the product during unpacking.
- Please carefully check the packing list. If you find that the packing list does not match the product name, do not install.



- Before unpacking, please check whether the outer packaging of the product is intact, and whether there are any signs of damage, soaking, moisture, deformation, etc.
- Please open the package according to the connection sequence of the outer box, and violent beating is strictly prohibited.
- When unpacking, please check the surfaces of the product and its accessories for any damage, corrosion, scratches, etc.
- After unpacking, please carefully check against the packing list to verify whether the quantity of the product, product accessories, and materials are complete.

During storage



- Do not overload this product (please follow the instructions),

Otherwise, it may lead to injury or malfunction.

- Please store and install in the following environment:
  - Places without direct sunlight
  - Places where the ambient temperature does not exceed the product specifications
  - Places where the relative humidity does not exceed the product specifications
  - A place where condensation does not occur due to sudden changes in temperature difference
  - Locations without corrosive or flammable gases
  - Location with no combustibles nearby
  - Places with less dust, dirt, salt, and metal powder
  - Places without splashing of water, oil, drugs, etc.
  - Locations where vibration or shock will not affect the product (locations exceeding the product specifications)
  - There are no devices generating strong magnetic fields nearby
  - Places not exposed to radiation

Storage or installation in environments other than those mentioned above may lead to product malfunction or damage.

- Avoid storing the product for more than 3 months. When the storage time is too long, please implement more rigorous protection and necessary inspections.

During transportation



- Do not overload this product (please follow the instructions),

Otherwise, it may lead to injury or malfunction.

- Please use the correct method for handling according to the product weight.
- When operating the servo unit and servo motor, please be aware of sharp parts such as the corners of the equipment.

Otherwise, it may lead to injury.

- **Both the servo unit and servo motor are precision equipment. Do not let them drop or subject them to strong impacts.**

Otherwise, it may lead to malfunctions or damage.

- Do not apply impact to the connector part.

Otherwise, it may lead to poor connection or malfunction.

- **Under all circumstances during transportation, the product shall not be exposed to environments containing halogens (fluorine, chlorine, bromine, iodine, etc.).**

Otherwise, it may lead to malfunctions or damage.

- **When wooden materials for packaging (including wooden frames, plywood, shelves, etc.) need to be disinfected and dewormed, please be sure to use methods other than fumigation.**

Example: Heat treatment (core temperature above 56°C for more than 30 minutes).

Additionally, disinfection and pest control treatments must be carried out at the material stage before packaging, and overall treatment after packaging is not allowed.

When using fumigated wood materials to package electrical products (stand-alone or products mounted on machinery, etc.), the gases and vapors generated by such wood materials can cause fatal damage to electronic components. In particular, halogen-based disinfectants (fluorine, chlorine, bromine, iodine, etc.) may lead to internal corrosion of capacitors.

- Do not overtighten the lifting bolts of the servo unit and servo motor, as using tools to forcefully tighten them may cause damage to the screw holes.
- Please strictly package the products before transporting them by vehicle, and a closed container must be used for long-distance transportation.
- It is strictly prohibited to transport this product together with equipment or items that may have an impact on or cause damage to this product.
- When the equipment is being hoisted by heavy tools, it is strictly prohibited for personnel to stand or stay under the equipment.

During installation



- Non-professionals are strictly prohibited from installing, wiring, maintaining, inspecting, or replacing components of the product.
- Installation, wiring, maintenance, inspection, or component replacement of this product can only be carried out by professionals who have received relevant training in electrical equipment and have sufficient electrical knowledge.
- Installers must be familiar with the product installation requirements and relevant technical documentation.
- When installing equipment that generates strong electromagnetic wave interference, such as transformers, please install shielding protection devices to prevent malfunction of this product.



- Before installation, please be sure to carefully read the product instruction manual and safety precautions.
- Modifying this product is strictly prohibited.
- It is strictly prohibited to turn the fixing bolts of product components and parts, as well as the bolts marked in red.
- Do not install this product in areas with strong electric fields or strong electromagnetic wave interference.
- When this product is installed in a cabinet or end point device, the cabinet or end point device shall provide corresponding protective devices such as fireproof enclosures, electrical protective enclosures, and mechanical protective enclosures, and the protection level shall comply with relevant IEC standards and local laws and regulations.
- Do not step on this product or place heavy objects on it.

Otherwise, it may lead to malfunctions, damage, or injury.

- Please store and install in the following environment:
  - Places without direct sunlight
  - Places where the ambient temperature does not exceed the product specifications
  - Places where the relative humidity does not exceed the product specifications
  - A place where condensation does not occur due to sudden changes in temperature difference
  - Locations without corrosive or flammable gases
  - Location with no combustibles nearby
  - Places with less dust, dirt, debris, and metal powder
  - Places without splashing of water, oil, drugs, etc.

- Locations where vibration or shock will not affect the product (locations exceeding the product specifications)
- There are no devices generating strong magnetic fields nearby
- Places not exposed to radiation

Installation in environments other than those mentioned above may lead to product failure or damage.

- In all installation scenarios, the product must not be exposed to environments containing halogens (fluorine, chlorine, bromine, iodine, etc.), otherwise it may lead to malfunctions or damage.
- When installing, please ensure good air circulation, and the spacing between drives should be no less than 10mm.

When wiring



- Do not change the wiring during the energization process,

Otherwise, it may lead to electric shock or injury.

- It is strictly prohibited to reverse the connection of the positive and negative poles of the power supply.

Otherwise, it may lead to drive damage or fire hazard.

- Installation, wiring, maintenance, inspection, or component replacement of equipment by non-professionals is strictly prohibited.
- Do not perform wiring work while the power is on, otherwise there is a risk of electric shock.
- Before wiring, please cut off the power supply of all equipment. After cutting off the power, the internal capacitors of the equipment may have residual voltage. Please wait at least 15 minutes before performing operations such as wiring. It is prohibited to perform live plugging and unplugging, which is a violation of regulations.
- Please ensure that the equipment and products are properly grounded; otherwise, there is a risk of electric shock.
- Please follow the steps specified in the electrostatic discharge (ESD) prevention measures and wear an ESD wrist strap when performing operations such as wiring to avoid damaging the internal circuits of the equipment or product.
- Prevent metal objects from falling or misoperation that could cause a short circuit between the power supply and PE, which may lead to drive fault alarms or device damage.

- Please have wiring or inspection work carried out by professional technicians,



Otherwise, it may lead to electric shock or product failure.

- It is strictly prohibited to connect the input power supply to the output terminal of the device or product, otherwise it may cause device damage and even fire.
- The output circuit may experience a short-circuit fault due to wiring errors or the application of abnormal voltage. When the above faults occur, the brake does not operate (remains in a non-operating state), which may lead to mechanical damage or casualties.
- When connecting the drive device to the motor, ensure that the phase sequence of the drive and motor terminals is accurately consistent to avoid causing the motor to rotate in the reverse direction.
- The wiring cables must meet the requirements for corresponding wire diameter, shielding, etc. The shielding layer of shielded cables shall be reliably grounded at one end.
- After wiring is completed, please ensure that there are no dropped screws or exposed cables inside the equipment and product.
- Please perform wiring and practice run operations in accordance with the precautions and steps recorded in this manual.
- Please ensure that the wires of the power supply terminals and motor connection terminals are tightened and securely connected according to the standard torque.

When not fully tightened, poor contact may cause the wires and terminal blocks to heat up and lead to a fire.

- For input and output signal cables and encoder cables, please use shielded twisted pair wires or multi-core twisted pair wires with overall shielding.
- When inserting wires, do not allow the burrs of the core wires to come into contact with adjacent wires, which could cause a short circuit.
- Please install safety devices such as circuit breakers for wiring to prevent short circuits in external wiring,

Otherwise, it may lead to a fire or malfunction.

- When using under poor power supply conditions, please ensure that the input power can be supplied within the specified voltage fluctuation range.

Otherwise, it may cause damage to the drive.

- When using in the following locations, please take appropriate shielding measures:
  - Places where strong electric or magnetic fields are generated when interference occurs due to static electricity
  - Places that may be exposed to radiation
  - Places near power lines

Otherwise, it may cause machine damage.

When powering on



- Before powering on, please confirm that the equipment and products are installed properly, the wiring is secure, and the motor device allows restarting.
- Before powering on, please confirm that the power supply meets the equipment requirements to avoid causing equipment damage or starting a fire.
- When powering on, the mechanical device of the equipment or product may suddenly move. Please note to stay away from the mechanical device.
- After powering on, do not open the equipment cabinet door or product protective cover plate, otherwise there is a risk of electric shock.
- It is strictly prohibited to touch any wiring terminals of the equipment while it is energized, otherwise there is a risk of electric shock.
- It is strictly prohibited to disassemble any device or component of equipment and products while they are energized, otherwise there is a risk of electric shock.
- It is strictly prohibited to power on beyond the rated voltage range. For example, if the rated voltage range of the power supply is 24-48V, a voltage exceeding 60V will damage the driver and pose a fire hazard (such as a fire).
- Within 1.5 times the product's dimensions, there should be no combustible materials to avoid potential fire hazards caused by open flames from equipment malfunctions.

Runtime



- Before powering on, please confirm that the equipment and products are installed properly, the wiring is secure, and the motor device allows restarting.
- Before powering on, please confirm that the power supply meets the equipment requirements to avoid causing equipment damage or starting a fire.
- When powering on, the mechanical device of the equipment or product may suddenly move. Please note to stay away from the mechanical device.
- After powering on, do not open the equipment cabinet door or product protective cover plate, otherwise there is a risk of electric shock.
- It is strictly prohibited to touch any wiring terminals of the equipment while it is energized, otherwise there is a risk of electric shock.

- It is strictly prohibited to disassemble any device or component of equipment and products while they are energized, otherwise there is a risk of electric shock.
- It is strictly prohibited to power on beyond the rated voltage range. For example, if the rated voltage range of the power supply is 24-48V, a voltage exceeding 60V will damage the driver and pose a fire hazard (such as a fire).
- During operation, avoid other items or metal objects from falling into the equipment, otherwise it may cause equipment damage.
- Do not use the method of switching the contactor on and off to control the start and stop of the equipment, otherwise it may cause damage to the equipment.
- After the drive peak current overload protection is triggered, it is necessary to wait 1 minute for the drive to cool down. If a power outage occurs within 1 minute during the waiting process, the time will be reset, and the time protection will not take effect. Please note this when using.
- Within 1.5 times the product's dimensions, there should be no combustible materials to avoid potential fire hazards caused by open flames from equipment malfunctions.

During maintenance



- Installation, wiring, maintenance, inspection, or component replacement of the equipment by non-professionals is strictly prohibited.
- It is strictly prohibited to perform equipment maintenance while the power is on, otherwise there is a risk of electric shock.
- After turning off the power to all devices, please wait at least 15 minutes before performing operations such as device maintenance.
- Please conduct daily and regular inspections and maintenance on equipment and products in accordance with equipment maintenance and upkeep requirements, and keep good maintenance records.

During maintenance



- Installation, wiring, maintenance, inspection, or component replacement of the equipment by non-professionals is strictly prohibited.
- It is strictly prohibited to perform equipment maintenance while the power is on; otherwise, there is a risk of electric shock.
- After turning off the power to all devices, please wait at least 15 minutes before performing operations such as device inspection and maintenance.

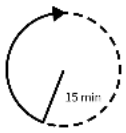
	• Please report device repairs in accordance with the product warranty agreement. • When equipment malfunctions or is damaged, professional personnel shall troubleshoot and repair the equipment and products in accordance with maintenance instructions, and keep maintenance records. • Please replace according to the product's vulnerable parts replacement instructions. • Do not continue to use a damaged machine, otherwise it will cause greater damage. • After replacing the device, please be sure to recheck the device wiring and reset the parameters.

At the time of scrapping

	• Please follow relevant national regulations and standards for the scrapping of equipment and products to avoid property losses or casualties. • Scrapped equipment and products should be disposed of and recycled in accordance with industrial waste treatment standards to avoid environmental pollution.

Safety Sign

	indicates that it is essential to ensure proper grounding of the system and products
	indicates that there may be danger here
	indicates that there is a high-temperature hazard here

	indicates waiting 15 minutes before device operation can be performed