

MR-J4 Servo amplifier

The following servo amplifiers will be available in the future.

Instructions and Cautions for Safe Use of AC Servos

Table with columns for Country/Region, Sales office, and Tel/Fax information for USA, Germany, China, and Korea.

2.2 Applications of the devices
MR-J4 servo amplifiers comply with the following standards.

2.3 Correct use
Always use the MR-J4 servo amplifiers within specifications (voltage, temperature, etc. Refer to each instruction manual for details).

WARNING: It takes 15 minutes maximum for capacitor discharging. Do not touch the unit and terminals immediately after power off.

2.3.1 Peripheral device and power wiring
The following are selected based on IEC/EN 61800-5-1, UL 508C, and CSA C22.2 No.14.

Table 1. Recommended wires
Table 2. Recommended crimp terminals

Table 1. Recommended wires: Lists wire gauges for different servo amplifier models and power classes. Table 2. Recommended crimp terminals: Lists terminal types and crimping methods.

Note: 1. To connect these models to a terminal block, be sure to use the screws that come with the terminal block. 2. Alphabets in the table indicate crimping tools.

(2) Selection example of MCCB and fuse
Use 1 class fuses or molded-case circuit breaker (UL 489 Listed MCCB) as the following table.

Table showing MCCB and fuse selection for various servo amplifier models and power classes.

Table showing MCCB and fuse selection for 100V class, 200V class, and 400V class servo amplifiers.

(3) Power supply
This servo amplifier can be supplied from star-connected supply with grounded neutral point of overvoltage category III (over 150V AC) for 1-phase servo amplifiers.

(4) Grounding
To prevent an electric shock, always connect the protective earth (PE) terminal (marked with a lightning bolt symbol) of the servo amplifier to the protective earth (PE) of the cabinet.

2.3.2 EU compliance
The MR-J4 servo amplifiers are designed to comply with the following directions to meet requirements for mounting, using, and periodic technical inspections.

(1) EMC requirement
MR-J4 servo amplifiers comply with category C3 in accordance with EN 61800-3. As for I/O wires (max. length 10 m), however, 3 m for STO cable for CN8.)

(2) For Declaration of Conformity (DoC)
Hereby, MITSUBISHI ELECTRIC EUROPE B.V., declares that the servo amplifiers are in compliance with the necessary requirements and standards (2006/42/EC, 2004/108/EC and 2006/95/EC).

2.3.3 USA/Canada compliance
This servo amplifier is designed in compliance with UL 508C and CSA C22.2 No.14.

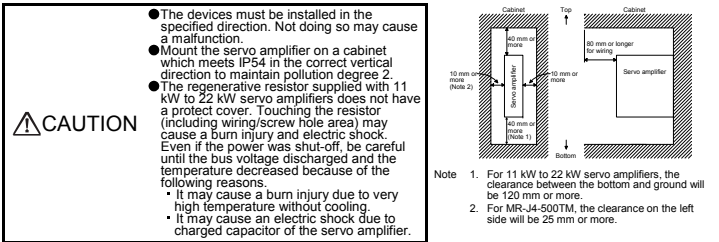
(1) Installation
The minimum cabinet size is 150% of each MR-J4 servo amplifier's volume. Also, design the cabinet so that the ambient temperature in the cabinet is 55 °C or less.

2.3.4 South Korea compliance
This product complies with the Radio Wave Law (KC mark). Please note the following to use the product.

2.4 General cautions for safety protection and protective measures
Observe the following items to ensure proper use of the MR-J4 servo amplifiers.

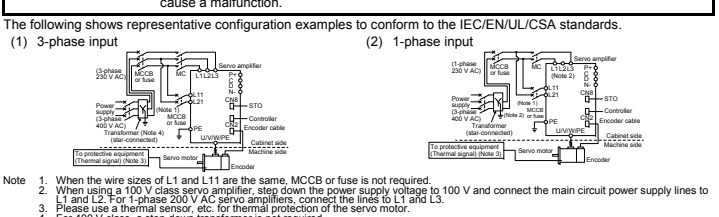
2.5 Residual risk
(1) Be sure that all safety related switches, relays, sensors, etc., meet the required safety standards.
(2) Perform all risk assessments and safety level certification to the machine or the system as a whole.

3. Mounting/dismounting
Installation direction and clearances
The devices must be installed in the specified direction. Not doing so may cause a malfunction.



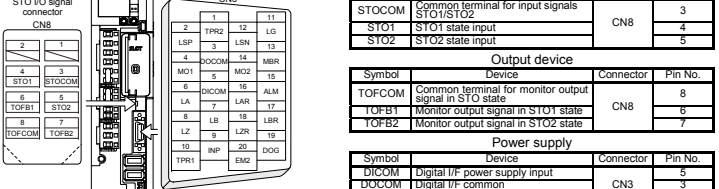
4. Electrical installation and configuration diagram
Turn off the molded-case circuit breaker (MCCB) to avoid electrical shocks or damages to the product before starting the installation or wiring.

CAUTION: The installation complies with IEC/EN 60204-1. The voltage supply to machines must be 20 ms or more of tolerance against instantaneous power failure as specified in IEC/EN 60204-1.



The connectors described by rectangles are safely separated from the main circuits described by circles. The connected motors will be limited as follows.

5. Signals
5.1 Signal
The following shows MR-J4-10TM signals as a typical example. For other servo amplifiers, refer to each servo amplifier instruction manual.



6. Maintenance and service
WARNING: To avoid an electric shock, only qualified personnel should attempt inspections. For repair and parts replacement, contact your local sales office.

6.1 Inspection items
It is recommended that the following points periodically be checked.

Table with columns for Part name, Life guideline, and inspection items for the servo amplifier.

6.2 Parts having service lives
Service lives of the following parts are listed below. However, the service lives vary depending on operation and environment.

Table showing service life guidelines for various parts like smoothing capacitor, relay, cooling fan, and battery backup time.

7. Transportation and storage
Transport the products correctly according to their mass. Stacking in excess of the limited number of product packages is not allowed.

CAUTION: Do not get oil or put heavy load on the equipment. For detailed information on transportation and handling of the battery, refer to the servo amplifier instruction manual.

Table with columns for Item and Environment, listing operational conditions like ambient temperature, humidity, vibration, and pollution degree.

Table with columns for Item and Environment, listing IP rating, altitude, and transportation conditions.

8. Technical data
8.1 MR-J4 servo amplifier
Table with columns for Item and various servo amplifier models, listing power supply and control methods.

Table with columns for Item and various servo amplifier models, listing control methods and safety observation function.

Table with columns for Item and various servo amplifier models, listing control methods and safety observation function details.

Table with columns for Servo amplifier, Variable dimension table (mm), and Mass (kg), listing dimensions and weights for different models.

Table with columns for Servo amplifier, Variable dimensions (mm), and Screw size, listing dimensions and screw specifications.

Table with columns for Servo amplifier, Variable dimensions (mm), and Screw size, listing dimensions and screw specifications.

9. Check list for user documentation
MR-J4 installation checklist for manufacturer/installer
The following items must be satisfied by the initial test operation at least. The manufacturer/installer must be responsible for checking the standards in the items.

Table with columns for Item, Yes/No, and No, listing check items for user documentation.

[Warranty]
1. Warranty period and coverage
We will repair any failure or defect hereinafter referred to as "failure" in our FA equipment hereinafter referred to as the "Product" arisen during warranty period at no charge due to causes for which we are responsible through the distributor from which you purchased the Product or our service provider.

[Limitations]
(1) You are requested to conduct an initial failure diagnosis by yourself, as a general rule. It can also be carried out by us or our service company upon your request and the actual cost will be charged. However, it will not be charged if we are responsible for the cause of the failure.

(2) This limited warranty applies only when the condition, method, environment, etc. of use are in compliance with the terms and conditions and instructions that are set forth in the instruction manual and user manual for the Product and the caution label affixed to the Product.

(3) Even during the term of warranty, the repair cost will be charged on you in the following cases.

(4) Exclusion of responsibility for compensation against loss of opportunity, secondary loss, etc.
Whether under or after the term of warranty, we assume no responsibility for any damages arisen from causes for which we are not responsible, any losses of opportunity and/or profit incurred by you due to a failure of the Product, any damages, secondary damages or compensation for accidents arisen under a specific circumstance that are unforeseen or unforeseen by our company, any damages to products other than the Product, and also compensation for any replacement work, readjustment, start-up test run of local machines and the Product and any other operations conducted by you.

2. Term of warranty after the stop of production
(1) We may accept the repair at charge for another seven (7) years after the production of the product is discontinued. The announcement of the stop of production for each model can be seen in our Sales and Service, etc.

(2) Please note that the Product (including its spare parts) cannot be ordered after its stop of production.

(3) Service in overseas countries
Our regional FA Center in overseas countries will accept the repair work of the Product. However, the terms and conditions of the repair work may differ depending on each FA Center. Please ask your local FA Center for details.

(4) Exclusion of responsibility for compensation against loss of opportunity, secondary loss, etc.
Whether under or after the term of warranty, we assume no responsibility for any damages arisen from causes for which we are not responsible, any losses of opportunity and/or profit incurred by you due to a failure of the Product, any damages, secondary damages or compensation for accidents arisen under a specific circumstance that are unforeseen or unforeseen by our company, any damages to products other than the Product, and also compensation for any replacement work, readjustment, start-up test run of local machines and the Product and any other operations conducted by you.

5. Change of Product specifications
Specifications listed in our catalogs, manuals or technical documents may be changed without notice.

6. Application and use of the Product
(1) For the use of our General-Purpose AC Servo, its applications should be those that may not result in a serious damage even if any failure or malfunction occurs in General-Purpose AC Servo, and a backup or fail-safe function should operate on an external system to General-Purpose AC Servo when any failure or malfunction occurs.

(2) Our General-Purpose AC Servo is designed and manufactured as a general purpose product for use at general industries. Therefore, applications which may be substantially influential on the public interest for such as atomic power plants and other power plants of electric power companies, and also which require a special quality assurance system, including applications for railway companies and government or public offices are not recommended, and we assume no responsibility for any failure caused by these applications when used.

In addition, applications which may be substantially influential to human lives or properties for such as airlines, medical treatments, railway service, incineration and fuel systems, man-operated material handling equipment, entertainment machines, safety machines, etc. are not recommended, and we assume no responsibility for any failure caused by these applications when used.