



MR-J4-DU30K /MR-J4-DU37K
MR-J4-DU30K_4 to MR-J4-DU55K_4
MR-CR55K/MR-CR55K4

Country/Region Sales office
USA MITSUBISHI ELECTRIC AUTOMATION, INC.
Germany MITSUBISHI ELECTRIC EUROPE B.V.
China MITSUBISHI ELECTRIC AUTOMATION (CHINA) LTD.
Korea MITSUBISHI ELECTRIC AUTOMATION KOREA CO., LTD.

STO function (Refer to IEC 61800-5-2: 2007 4.2.2.2 STO.)
MR-J4 servo amplifiers have the STO function. The STO function shuts down energy to servo motors, thus removing torque.

2. About safety
This chapter explains safety of users and machine operators. Please read the chapter carefully before mounting the equipment.

WARNING
Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
CAUTION
Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.

2.1 Professional engineer
Only professional engineers should mount MR-J4 servo amplifiers.
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 with specifications (voltage, temperature, etc. Refer to each instruction manual for details.)
2.3.1 Selection of peripheral equipment and wire
The followings are selected based on IEC/EN 61800-5-1, UL 508C, and CSA C22.2 No.14.

WARNING
It takes 20 minutes for capacitor discharging. Do not touch the unit and terminals immediately after power off.

Table 1. Recommended wire
Table 2. Recommended crimp terminal

Table with columns: Converter unit, Drive unit, L1/L2/L3, L1/L1/L21, P2/C, U/V/W, I, Symbol, Crimp terminal, Applicable tool, Manufacture ref.

Note 1. To connect these models to a terminal block, be sure to use the screws that come with the terminal block.

(2) Selection example of MCCB and fuse
Use a fuse (T class) or the molded-case circuit breaker (UL 489 Listed MCCB) indicated in the table below.

Table with columns: Converter unit, Drive unit, Molded-case circuit breaker (240 V AC), Fuse (300 V)

(3) Power supply
This servo amplifier can be used on the condition of overvoltage category III set forth in IEC/EN 60664-1.
(4) Grounding
To prevent an electric shock, always connect the protective earth (PE) terminal (marked with the 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.

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.

(2) Short-circuit current rating (SCCR)
Suitable For Use On A Circuit Capable Of Delivering Not More Than 100 kA ms Symmetrical Amperes, 500 Volts Maximum.
(3) Overload protection characteristics
The MR-J4 servo amplifiers have servo motor overload protective function.

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

2.5 Residual risk
(1) Be sure that all safety related switches, relays, sensors, etc., meet the required safety standards.

- (3) If the upper and lower power modules in the servo amplifier are shorted and damaged simultaneously, the servo motor may make a half revolution at a maximum.
(4) Only qualified personnel are authorized to install, start-up, repair or adjust the machines in which these components are installed.

2.6 Disposal
Disposal of unusable or irreparable devices should always occur in accordance with the applicable country-specific waste disposal regulations.

2.7 Lithium battery transportation
To transport lithium batteries, take actions to comply with the instructions and regulations such as the United Nations (UN), the International Civil Aviation Organization (ICAO), and the International Maritime Organization (IMO).

3. Mounting/dismounting
Installation direction and clearances

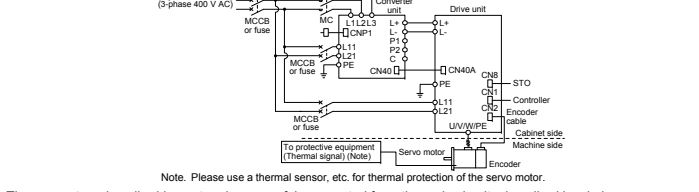
CAUTION
The devices must be installed in the specified direction. Not doing so may cause a malfunction.
Mount the servo amplifier on a cabinet which meets IP54 in the correct vertical direction to maintain pollution degree 2.



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 immunity to instantaneous power failures as specified in IEC/EN 60204-1.

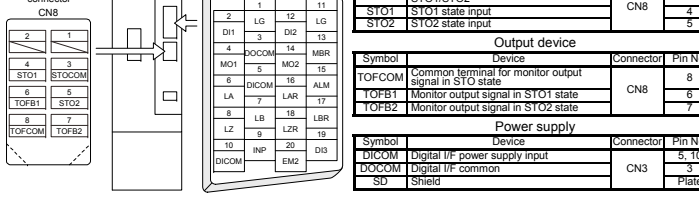
The following shows representative configuration examples to conform to the IEC/EN/UL/CSA standards.



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

- (1) HG/HF/HCH/A series servo motors (Mfg.: Mitsubishi Electric)
(2) Using a servo motor complied with IEC 60034-1 and Mitsubishi Electric encoder (OBA, OSA)

5. Signals
5.1 Signal
The following shows MR-J4-DU30K signals as a typical example.



6. Maintenance and service
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: Part name, Life guideline

- (2) Check servo motor bearings, brake section, etc. for unusual noise.
(3) Check the cables and the like for scratches or cracks. Perform periodic inspection according to operating conditions.

6.2 Parts having service lives
Service lives of the following parts are listed below. However, the service life varies depending on operating methods and environment.

Table with columns: Part name, Life guideline

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
When you keep or use it, please fulfill the following environment.

Table with columns: Item, Environment

Table with columns: Item, MR-CR55K, MR-CR55K4

Table with columns: Item, MR-J4-DU30K, MR-J4-DU37K, MR-J4-DU30K_4, MR-J4-DU37K_4, MR-J4-DU45K_4, MR-J4-DU55K_4

Table with columns: Converter unit/drive unit, Variable dimension table (mm), Mass [kg]



Table with columns: Drive unit, Variable dimensions (mm), Screw size



9. Check list for user documentation
MR-J4-DU/MR-CR installation checklist for manufacturer/installer

Table with columns: Question, Yes/No, No/Yes

[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.

[Term]
The term of warranty for Product is twelve (12) months after your purchase and delivery of the Product to a place designated by you or eighteen (18) months from the date of manufacture whichever comes first ("Warranty Period").

[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.

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.

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.