



Instructions and Cautions for Safe Use of AC Servos

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2.3 Correct use
Use the MR-J4 servo amplifiers within specifications. Refer to each instruction manual for specifications such as voltage, temperature, etc. Mitsubishi Electric Co. accepts no claims for liability if the equipment is used in any other way or if modifications are made to the device, even in the context of mounting and installation.

WARNING If you need to get close to the moving parts of the machine for inspection or others, ensure safety by confirming the power off, etc. Otherwise, it may cause an accident. 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. 274.

Table 2. Recommended wires

Servo amplifier (Note 7)	75°C/160 °C stranded wire [AWG] (Note 2)		Symbol	Crimp terminal (Note 2)	Applicable tool	Manufacturer
	L1/L2/L3	P+/-C				
MR-J4-03A6	19/- (Note 5)	19/- (Note 5)		PV05-S-4	YNI-P120S	Mitsubishi Electric
MR-J4-03B6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03C6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03D6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03E6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03F6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03G6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03H6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03I6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03J6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03K6	14/14	14/14		PV05-S-4	YNI-P120S	
MR-J4-03L6	14/14	14/14		PV05-S-4	YNI-P120S	

1. To correct these models to a term block, be sure to use the screws that come with the terminal block.
2. The alphabetical letters in the table indicate the symbols of the recommended crimp terminals. Refer to Table 2 for recommended crimp terminals.
3. Select wire sizes depending on the rated output of the servo motors. The values in the table are sizes based on rated output of the servo amplifier.
4. Use the crimp terminal or the P/E terminal of the servo amplifier.
5. This value is of 240V/50Hz for MR-J4-03A6 and MR-J4W2-0303B6.
6. This value is of 110V/60Hz for MR-J4-03A6 and MR-J4W2-0303B6.
7. '1S' means 1-phase 200 V AC power input and '1T' means 3-phase 200 V AC power input in the table.

Selection examples of MCCB and fuse
Use T class fuses or molded-case circuit breaker (UL 489 Listed MCCB) as the following table. The T class fuses and molded-case circuit breakers in the table are selected examples based on rated I/O of the servo amplifiers. When you select a smaller capacity servo motor to connect it to the servo amplifier, you can also use smaller capacity T class fuses or molded-case circuit breaker than ones in the table. For selected other than Class T fuses and molded-case circuit breakers below and selecting a Type E Combination motor controller, refer to each servo amplifier instruction manual.

Servo amplifier (100 V class)	Molded-case circuit breaker (120 V AC)	Fuse (300 V)
MR-J4-10 (1)MR-J4-20 (1)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (2)MR-J4-20 (2)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (3)MR-J4-20 (3)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (4)MR-J4-20 (4)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (5)MR-J4-20 (5)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (6)MR-J4-20 (6)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (7)MR-J4-20 (7)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (8)MR-J4-20 (8)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (9)MR-J4-20 (9)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (10)MR-J4-20 (10)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (11)MR-J4-20 (11)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (12)MR-J4-20 (12)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (13)MR-J4-20 (13)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (14)MR-J4-20 (14)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (15)MR-J4-20 (15)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (16)MR-J4-20 (16)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (17)MR-J4-20 (17)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (18)MR-J4-20 (18)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (19)MR-J4-20 (19)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (20)MR-J4-20 (20)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (21)MR-J4-20 (21)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (22)MR-J4-20 (22)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (23)MR-J4-20 (23)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (24)MR-J4-20 (24)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (25)MR-J4-20 (25)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (26)MR-J4-20 (26)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (27)MR-J4-20 (27)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (28)MR-J4-20 (28)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (29)MR-J4-20 (29)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (30)MR-J4-20 (30)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (31)MR-J4-20 (31)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (32)MR-J4-20 (32)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (33)MR-J4-20 (33)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (34)MR-J4-20 (34)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (35)MR-J4-20 (35)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (36)MR-J4-20 (36)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (37)MR-J4-20 (37)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (38)MR-J4-20 (38)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (39)MR-J4-20 (39)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (40)MR-J4-20 (40)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (41)MR-J4-20 (41)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (42)MR-J4-20 (42)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (43)MR-J4-20 (43)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (44)MR-J4-20 (44)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (45)MR-J4-20 (45)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (46)MR-J4-20 (46)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (47)MR-J4-20 (47)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (48)MR-J4-20 (48)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (49)MR-J4-20 (49)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (50)MR-J4-20 (50)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (51)MR-J4-20 (51)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (52)MR-J4-20 (52)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (53)MR-J4-20 (53)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (54)MR-J4-20 (54)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (55)MR-J4-20 (55)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (56)MR-J4-20 (56)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (57)MR-J4-20 (57)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (58)MR-J4-20 (58)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (59)MR-J4-20 (59)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (60)MR-J4-20 (60)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (61)MR-J4-20 (61)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (62)MR-J4-20 (62)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (63)MR-J4-20 (63)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (64)MR-J4-20 (64)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (65)MR-J4-20 (65)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (66)MR-J4-20 (66)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (67)MR-J4-20 (67)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (68)MR-J4-20 (68)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (69)MR-J4-20 (69)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (70)MR-J4-20 (70)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (71)MR-J4-20 (71)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (72)MR-J4-20 (72)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (73)MR-J4-20 (73)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (74)MR-J4-20 (74)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (75)MR-J4-20 (75)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (76)MR-J4-20 (76)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (77)MR-J4-20 (77)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (78)MR-J4-20 (78)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (79)MR-J4-20 (79)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (80)MR-J4-20 (80)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (81)MR-J4-20 (81)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (82)MR-J4-20 (82)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (83)MR-J4-20 (83)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (84)MR-J4-20 (84)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (85)MR-J4-20 (85)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (86)MR-J4-20 (86)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (87)MR-J4-20 (87)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (88)MR-J4-20 (88)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (89)MR-J4-20 (89)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (90)MR-J4-20 (90)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (91)MR-J4-20 (91)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (92)MR-J4-20 (92)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (93)MR-J4-20 (93)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (94)MR-J4-20 (94)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (95)MR-J4-20 (95)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (96)MR-J4-20 (96)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (97)MR-J4-20 (97)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (98)MR-J4-20 (98)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (99)MR-J4-20 (99)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (100)MR-J4-20 (100)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A

Servo amplifier (200 V class) (Note)	Molded-case circuit breaker (240 V AC)	Fuse (300 V)
MR-J4-10 (1)MR-J4-20 (1)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (2)MR-J4-20 (2)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (3)MR-J4-20 (3)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (4)MR-J4-20 (4)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (5)MR-J4-20 (5)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (6)MR-J4-20 (6)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (7)MR-J4-20 (7)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (8)MR-J4-20 (8)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (9)MR-J4-20 (9)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (10)MR-J4-20 (10)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (11)MR-J4-20 (11)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (12)MR-J4-20 (12)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (13)MR-J4-20 (13)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (14)MR-J4-20 (14)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (15)MR-J4-20 (15)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (16)MR-J4-20 (16)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (17)MR-J4-20 (17)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (18)MR-J4-20 (18)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (19)MR-J4-20 (19)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (20)MR-J4-20 (20)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (21)MR-J4-20 (21)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (22)MR-J4-20 (22)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (23)MR-J4-20 (23)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (24)MR-J4-20 (24)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (25)MR-J4-20 (25)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (26)MR-J4-20 (26)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (27)MR-J4-20 (27)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (28)MR-J4-20 (28)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (29)MR-J4-20 (29)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (30)MR-J4-20 (30)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (31)MR-J4-20 (31)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (32)MR-J4-20 (32)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A
MR-J4-10 (33)MR-J4-20 (33)MR-J4-40	NF50-SVF-U-15A (50 A frame 15 A)	20 A