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New Product Release

May 2025 [SV2505-1E]

AC Servo System MELSERVO-J5

Simple Converter MR-CM08K1

Features

■The 200 V servo amplifiers (up to three axes) can be used in 100 V.

■Energy is saved by efficiently using regenerative power through a common bus connection.

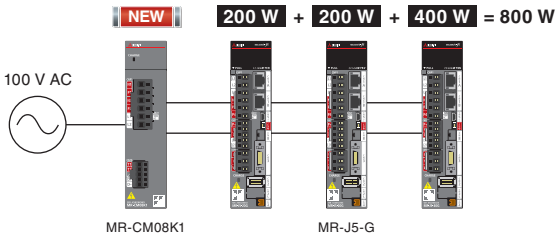
■The tolerance against instantaneous power failure of the servo amplifiers is expected to improve compared to that of the previous MR-J4 series models (100 V).

Driving 200 V Servo Amplifiers in 100 V

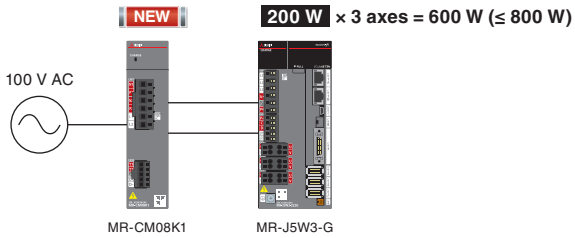
Up to 3 axes
Total capacity 800 W

A single MR-CM08K1 simple converter can drive up to three axes of servo amplifiers in 100 V.
Any combination of servo amplifiers is possible as long as the total rated capacity is 800 W or less.

Connecting 1-Axis Servo Amplifiers



Connecting Multi-Axis Servo Amplifiers



Combinations of Simple Converters and Servo Amplifiers

Servo Amplifiers

●: Supported –: Not supported

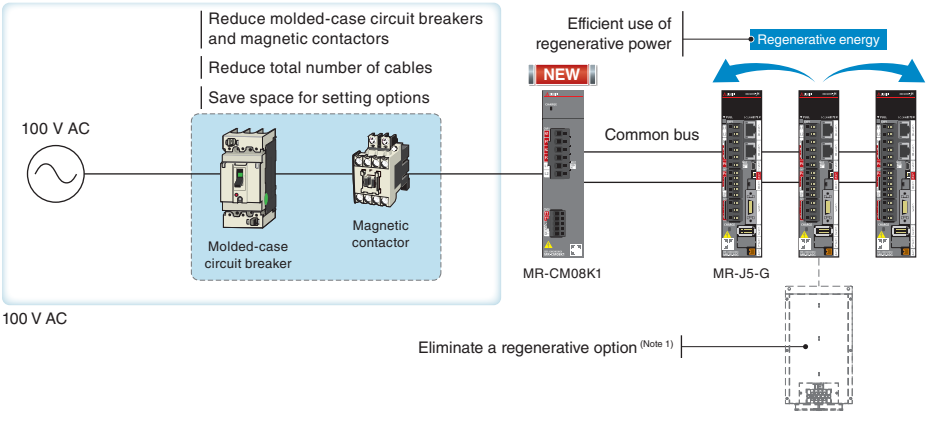
Model	Power supply specifications	Capacity	Compatible servo motors		
			Rotary (Note 1)	Linear	Direct drive
MR-J5-G/B/A	200 V AC	0.1 kW to 0.75 kW	●	–	–
MR-J5W2-G/B		0.2 kW to 0.4 kW	●	–	–
MR-J5W3-G/B		0.2 kW	●	–	–

0.1 kW

Notes: 1. The 400 W or smaller rotary servo motors are compatible. Refer to "Combinations of Rotary Servo Motors and Servo Amplifiers" in this brochure for details.

Energy Saving and Simple Wiring (100 V)

The MR-CM08K1 simple converter saves energy by efficiently using regenerative power through a common bus connection and eliminates a regenerative option by dispersing regenerative energy to each servo amplifier. (Note 1)
In addition, the simple converter reduces the number of molded-case circuit breakers and magnet contactors, resulting in simple wiring.
Using daisy chain power connectors for passing wiring simplifies the wiring for the bus and the control circuit power supply.
The tolerance against instantaneous power failure is expected to improve compared to that of the 100 V servo amplifiers of the previous MR-J4 series models.



Notes: 1. A regenerative option can be eliminated depending on the operation pattern and the system configuration.

Combinations of Rotary Servo Motors and Servo Amplifiers (Note 1, 2)

The 200 V servo amplifiers can be used with a 100 V AC input by using MR-CM08K1.
The torque characteristics of the servo motor differ from those with a 3-phase 200 V AC input. Refer to "Rotary Servo Motor User's Manual (For MR-J5)".

Servo amplifier (200 V)

◯: Standard torque ◎: Torque increased

Rotary servo motor			Servo amplifier MR-J5-					Servo amplifier MR-J5W2-		Servo amplifier MR-J5W3-
			10G/B/A	20G/B/A	40G/B/A	60G/B/A	70G/B/A	22G/B	44G/B	222G/B
HK-KT_W	40 × 40	HK-KT053W	◯	◎	◎	-	-	◎	◎	◎
		HK-KT13W	◯	◎	◎	-	-	◎	◎	◎
	60 × 60	HK-KT23W	-	◯	◎	◎	-	◯	◎	◯
		HK-KT43W	-	-	◯	◯	◎	-	◯	-
HK-MT_W	40 × 40	HK-MT053W	◯	◎	◎	-	-	◎	◎	◎
		HK-MT13W	◯	◎	◎	-	-	◎	◎	◎
	60 × 60	HK-MT23W	-	◯	◎	-	-	◯	◎	◯
		HK-MT43W	-	-	◯	-	◎	-	◯	-

Notes: 1. Use the servo amplifiers with firmware version F0 or later.
2. Supported rotary servo motors will be expanded sequentially.

MR-CM08K1 Specifications (100 V) (Note 1)

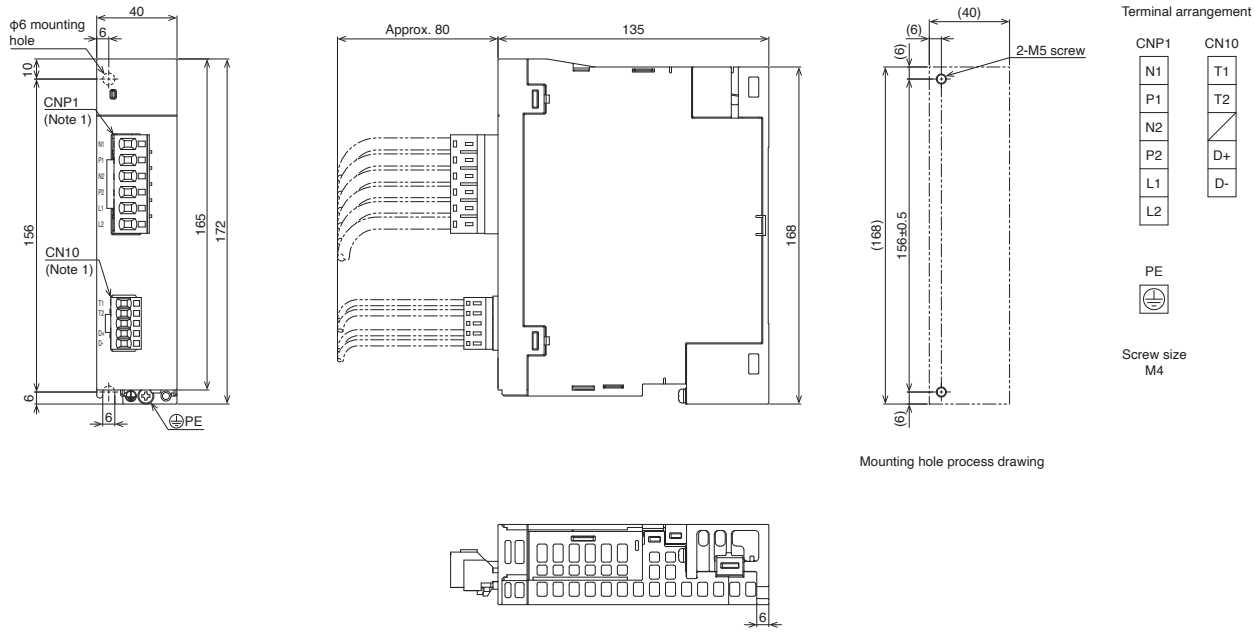
Simple converter unit model			MR-CM08K1 (100 V)
Converter output	Rated voltage		270 V DC to 324 V DC
	Rated current [A]		4.5
Main circuit power supply input	Voltage/frequency		1-phase 100 V AC to 120 V AC, 50 Hz/60 Hz
	Rated current [A]		12.4
	Permissible voltage fluctuation		1-phase 85 V AC to 132 V AC
Overheat detection function	Thermal sensor		The contact between T1 and T2 opens when the thermal sensor detects an abnormal overheat condition.
	Contact specification	Maximum voltage	110 V AC/DC
		Maximum current	0.3 A at 20 V DC
		Minimum current	0.1 mA at 1 V DC
		Maximum capacity	6 VA
Connectable servo amplifier			MR-J5-10_ to MR-J5-70_, MR-J5W2-22_, MR-J5W2-44_, MR-J5W3-222_
Maximum number of axes of connectable servo amplifiers			3 axes (counted as 2 axes for MR-J5W2-_ and 3 axes for MR-J5W3-_)
Total capacity of connectable servo amplifiers [kW]			0.8
Continuous rating [kW]			0.8
Instantaneous maximum rating [kW]			1.5
Structure (IP rating)			IP00
Close mounting			Possible
Environment			The operating environment is the same as that for the servo amplifiers. Refer to "MELSERVO-J5 catalog (L(NA)03179ENG)".
Mass [kg]			0.8
Wire size	L1/L2/PE		2 mm² to 5.5 mm² (AWG 14 to 10)
	P1/N1		2 mm² to 5.5 mm² (AWG 14 to 10)
	P2/N2		2 mm² (AWG 14)
Total wiring length from P1/N1 of simple converter to P4/N- of servo amplifier			5 m or shorter
Total wiring length from P2/N2 of simple converter to L11/L21 of servo amplifier			5 m or shorter

Notes: 1. For MR-CM08K1 connection examples, options, and peripheral equipment such as a molded-case circuit breaker, refer to "MR-J5 User's Manual".

Selecting and connecting servo amplifiers that exceed the conditions may cause serious malfunctions.
Input the RDY signal of all connected servo amplifiers to D+ and D- of MR-CM08K1. Otherwise, MR-CM08K1 may be damaged.
For details of MR-CM08K1 connection examples and connection conditions, refer to "MR-J5 User's Manual".

AC Servo System MELSERVO-J5
Simple Converter MR-CM08K1

Dimensions



[Unit: mm]

Notes: 1. CNP1 and CN10 connectors are supplied with the simple converter.

Product List

Item		Model	Rated output	Main circuit power supply
Simple converter MR-CM	100 V	MR-CM08K1	0.8 kW	1-phase 100 V AC to 120 V AC

Mitsubishi Electric's e-F@ctory concept utilizes both FA and IT technologies, to reduce the total cost of development, production and maintenance, with the aim of achieving manufacturing that is a "step ahead of the times". It is supported by the e-F@ctory Alliance Partners covering software, devices, and system integration, creating the optimal e-F@ctory architecture to meet the end users needs and investment plans.

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