

MR-JE Servo Motors and Amplifiers

MR-JE family of products leverages advanced functionality such as true one-touch auto-tuning, vibration suppression, and machine diagnosis functionality in an easy-to-use servo solution.

MR-JE Amplifiers

Amplifier Selection

MR-JE -

Mitsubishi General Purpose AC Servo Amplifier

Symbol	Interface
A	General Purpose
BF	SSCNET III/H
C	Ethernet

Symbol	Rated Output (kW)
10	0.1
20	0.2
40	0.4
70	0.75
100	1
200	2
300	3

Servo Amplifier Model MR-JE-	10A	20A	40A	70A	100A	200A	300A
Stocked Item	S	S	S	S	S	S	S
Output	Rated Voltage						
	3-phase 170 VAC						
Power Supply Input	Rated Current (A)						
	1.1	1.5	2.8	5.8	6.0	11.0	11.0
	Voltage/Frequency (*1)						
	3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz				3-phase 200 VAC to 240 VAC, 50 Hz/60 Hz		
Interface Power Supply	Rated Current (A) (*7)						
	0.9	1.5	2.6	3.8	5.0	10.5	14.0
	Permissible Voltage Fluctuation						
3-phase or 1-phase 170 VAC to 264 VAC				3-phase 170 VAC to 264 VAC			
Permissible Frequency Fluctuation							
±5% maximum							
Control Method							
24 V DC ± 10% (required current capacity: 0.3 A)							
Control Method							
Sine-wave PWM control/current control method							
Tolerable Regenerative Power of the Built-In Regenerative Resistor (W) (*2, 3)							
-	-	10	20	20	100	100	
Dynamic Brake							
Built-in (*4)							
Communication Function							
USB: Connect a personal computer (MR Configurator2 compatible) RS-422: Connect a controller (1:n communication up to 32 axes) (*6)							
Encoder Output Pulse							
Compatible (A/B/Z-phase pulse)							
Analog Monitor							
2 channels							
Position Control Mode	Maximum Input Pulse Frequency						
	4 Mpulses/s (when using differential receiver), 200 kpulses/s (when using open-collector)						
	Positioning Feedback Pulse						
	Encoder resolution: 131072 pulses/rev						
	Command Pulse Multiplying Factor						
	Electronic gear A/B multiple, A: 1 to 16777215, B: 1 to 16777215, 1/10 < A/B < 4000						
Speed Control Mode	Positioning Complete Width Setting						
	0 pulse to ±65535 pulses (command pulse unit)						
	Error Excessive						
	±3 rotations						
	Torque Limit						
	Set by parameters or external analog input (0 V DC to +10 V DC/maximum torque)						
Torque Control Mode	Speed Control Range						
	Analog speed command 1:2000, internal speed command 1:5000						
	Analog Speed Command Input						
	0 V DC to ±10 VDC/rated speed (Speed at 10 V is changeable with [Pr. PC12].)						
Servo Function	Speed Fluctuation Rate						
	±0.01% maximum (load fluctuation 0% to 100%), 0% (power fluctuation: ±10%) ±0.2% maximum (ambient temperature: 25 °C ± 10 °C) only when using analog speed command						
	Torque Limit						
Set by parameters or external analog input (0 V DC to +10 V DC/maximum torque)							
Analog Torque Command Input							
0 VDC to ±8 VDC/maximum torque (input impedance: 10 kΩ to 12 kΩ)							
Speed Limit							
Set by parameters or external analog input (0 V DC to ± 10 V DC/rated speed)							
Protective Functions							
Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection							
Compliance to Standards							
EN 61800-3, EN 61800-5-1, RoHS compliant, UL: UL 508C, KC compliant							
Structure (IP Rating)							
Natural cooling, open (IP20)					Force cooling, open (IP20)		
Close Mounting							
Possible (*5)							
Environment	Ambient Temperature						
	0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)						
	Ambient Humidity						
	90 %RH maximum (non-condensing), storage: 90 %RH maximum (non-condensing)						
Ambience							
Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
Altitude							
1000 m or less above sea level							
Vibration Resistance							
5.9 m/s ² at 10 Hz to 55 Hz (directions of X, Y and Z axes)							
Weight (kg)							
0.8	0.8	0.8	1.5	1.5	2.1	2.1	

Notes:

- Rated output and speed of a Servo Motor are applicable when the servo amplifier, combined with the Servo Motor, is operated within the specified power supply voltage and frequency.
- Select the most suitable regenerative option for your system with our capacity selection software.
- Refer to "Regenerative Option" in this catalog for the tolerable regenerative power [W] when regenerative option is used.
- When using the built-in dynamic brake, refer to "MR-JE- A Servo Amplifier Instruction Manual" for the permissible load to motor inertia ratio.
- When the servo amplifiers are closely mounted, keep the ambient temperature within 0 °C to 45 °C, or use them with 75% or less of the effective load ratio.
- RS-422 communication function is available with the servo amplifiers manufactured on December 2013 or later. Refer to "MR-JE- A Servo Amplifier Instruction Manual" for how to verify the manufacturing date of the products.
- This value is applicable when a 3-phase power supply is used.

MR-JE-BF (SSCNET III/H Interface) Specifications

Servo Amplifier Model MR-JE-		10BF	20BF	40BF	70BF	100BF	200BF	300BF	
Stocked Item		S	S	S	S	S	S	S	
Output	Rated Voltage	3-phase 170 VAC							
	Rated Current (A)	1.1	1.5	2.8	5.8	6.0	11.0	11.0	
Power supply Input	Voltage/Frequency (*1)	3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz				3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz (*8)		3-phase 200 VAC to 240 VAC, 50 Hz/60 Hz	
	Rated Current (A) (*7)	0.9	1.5	2.6	3.8	5.0	10.5	14.0	
	Permissible Voltage Fluctuation	3-phase or 1-phase 170 VAC to 264 VAC				3-phase or 1-phase 170 VAC to 264 VAC (*8)		3-phase 170 VAC to 264 VAC	
	Permissible Frequency Fluctuation	±5% maximum							
Interface Power Supply		24 VDC ±10% (required current capacity: 0.1 A)							
Control Method		Sine-wave PWM control/current control method							
Tolerable Regenerative Power of the Built-In Regenerative Resistor (W) (*2, *3)		-	-	10	20	20	100	100	
Dynamic Brake		Built-in (*4)							
SSCNET III/H Command Communication Cycle (*6)		0.444 ms, 0.888 ms							
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible)							
Servo Function		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, tightening & press-fit function, machine diagnosis function, power monitoring function, lost motion compensation function, STO and SS1 (*10) (optional) function.							
Protective Functions		Overcurrent shut-off, regenerative overvoltage shut-off, overload shut-off (electronic thermal), Servo Motor overheat protection, encoder error protection, regenerative error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, hotline forced stop function (*9)							
Compliance to Standards		EN 61800-3, EN 61800-5-1, RoHS compliant, UL: UL 508C, KC compliant							
Structure (IP Rating)		Natural cooling, open (IP20)					Force cooling, open (IP20)		
Close Mounting (*5)	3-Phase Power Supply Input	Possible							
	1-Phase Power Supply Input	Possible				Not possible		-	
Environment	Ambient Temperature	0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)							
	Ambient Humidity	Operation/Storage: 90%RH maximum (non-condensing)							
	Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust							
	Altitude	1000 m or less above sea level							
Vibration Resistance		5.9 m/s ² at 10 Hz to 55 Hz (directions of X, Y and Z axes)							
Weight (kg)		0.8	0.8	0.8	1.5	1.5	2.1	2.1	

Notes:

- Rated output and speed of a Servo Motor are applicable when the servo amplifier, combined with the Servo Motor, is operated within the specified power supply voltage and frequency.
- Select the most suitable regenerative option for your system with our capacity selection software.
- Refer to "Regenerative Option" in this catalog for the tolerable regenerative power [W] when regenerative option is used.
- When using the built-in dynamic brake, refer to "MR-JE-_B Servo Amplifier Instruction Manual" for the permissible load to motor inertia ratio.
- When the servo amplifiers are closely mounted, keep the ambient temperature within 0 °C to 45 °C, or use them with 75% or less of the effective load ratio.
- The command communication cycle depends on the controller specifications and the number of axes connected.
- This value is applicable when a 3-phase power supply is used.
- When a 1-phase 200 V AC to 240 VAC power supply is used, use the servo amplifiers with 75% or less of the effective load ratio.
- When an alarm occurs on MR-JE-B servo amplifier, the hot line forced stop signal will be sent to other servo amplifiers through a controller, and all the Servo Motors that are operated normally by MR-JE-B servo amplifiers decelerate to a stop. Refer to "MR-JE-_B Servo Amplifier Instruction Manual" for details.
- For SS1, MR-J3-D05 Safety Logic unit and cable is required. (Refer to MR-J4 section for CN8 section)