

MR-J4-B(1)/MR-J4-B(1)-RJ (SSCNET III/H Interface) Specifications (200V/100V)

Servo Amplifier Model MR-J4_(-RJ)		10B	20B	40B	60B	70B	100B	200B	350B	500B	700B	11KB	15KB	22KB	10B1	20B1	40B1	
Stocked Item		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	
Output	Rated Voltage	3-phase 170 VAC																
	Rated Current (A)	1.1	1.5	2.8	3.2	5.8	6.0	11.0	17.0	28.0	37.0	68.0	87.0	126.0	1.1	1.5	2.8	
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase or 1-phase 200 VAC to 240 VAC, 50 Hz/60 Hz						3-phase 200 VAC to 240 VAC, 50/60 Hz						1-phase 100 V AC to 120 V AC, 50 Hz/60 Hz				
	Rated Current (A) (*15)	0.9	1.5	2.6	3.2 (*8)	3.8	5.0	10.5	16.0	21.7	28.9	46.0	64.0	95.0	3.0	5.0	9.0	
	Permissible Voltage Fluctuation	3-phase or 1-phase 170 VAC to 264 VAC						3-phase 170 VAC to 264 VAC						1-phase 85 VAC to 132 VAC				
	Permissible Frequency Fluctuation	±5% maximum																
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 VAC to 240 VAC, 50/60 Hz												1-phase 100 VAC to 120VAC, 50Hz/60Hz				
	Rated Current (A)	0.2									0.3			0.4				
	Permissible Voltage Fluctuation	1-phase 170 VAC to 264 VAC												1-phase 85 VAC to 132 VAC				
	Permissible Frequency Fluctuation	±5% maximum																
	Power Consumption (W)	30									45			30				
Interface Power Supply		24 VDC ±10% (required current capacity: 0.3 A (including CN8 connector signals))																
Control Method (*8)		Sine-wave PWM control/current control method																
Tolerable Regenerative Power	Built-in Regenerative Resistor (*2, *3) (W)	-	10	10	10	20	20	100	100	130	170	-	-	-	-	10	10	
	External Regenerative Resistor (W) (Standard Accessory) (*2, 3, 11, 12)	-	-	-	-	-	-	-	-	-	-	500 (800)	850 (1300)	850 (1300)	-	-	-	
Dynamic Brake		Built-in (*4)										External option (*13)			Built-in (*4)			
SSCNET III/H Command Communication Cycle (*10)		0.222 ms, 0.444 ms, 0.888 ms																
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible)																
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)																
Analog Monitor		2 channels																
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 control, machine diagnosis function, power monitoring function, master-slave operation function (*14), scale measurement function (*14), J3 compatibility mode, super trace control (*16), lost motion compensation (*16)																
Fully Closed Loop Control	MR-J4-B(1)	Two-wire type communication method (*9)																
	MR-J4-B(1)-RJ	Two-wire/four-wire type communication method																
Load-Side Encoder Interface	MR-J4-B(1)	Mitsubishi high-speed serial communication																
	MR-J4-B(1)-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal																
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, magnetic pole detection protection, linear servo control fault protection																
Safety Function (*10)		STO (IEC/EN 61800-5-2)																
Safety Performance	Standards Certified by CB	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2																
	Response Performance	8 ms or less (STO input OFF - energy shut-off)																
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum																
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer																
	Diagnostic Coverage (DC)	Medium (90% to 99%)																
	Probability of Dangerous Failure Per Hour (PFH)	1.68 x 10 ⁻¹⁰ [1/h]																
Compliance to Standards		CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C																
Structure (IP Rating)		Natural cooling, open (IP20)					Force cooling, open (IP20)					Force cooling, open (IP20) (*5)					Natural cooling, open (IP20)	
Close Mounting		Possible (*6)									Not possible							Possible (*6)
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	1.0	1.0	1.4	1.4	2.1	2.3	4.0	6.2	13.4	13.4	18.2	0.8	0.8	1.0	

Notes: For MR-J4 Amplifier notes, please go to page 259.

MR-J4-A(1)/MR-J4-A(1)-RJ (General-purpose Interface) Specifications (200V/100V)

Servo Amplifier Model MR-J4_-RJ		10A	20A	40A	60A	70A	100A	200A	350A	500A	700A	11KA	15KA	22KA	10A1	20A1	40A1
Stocked Item		S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Output	Rated Voltage	3-phase 170 VAC															
	Rated Current (A)	1.1	1.5	2.8	3.2	5.8	6.0	11.0	17.0	28.0	37.0	68.0	87.0	126.0	1.1	1.5	2.8
Main Circuit Power Supply	Voltage/Frequency (*1)	3-phase or 1-phase 200VAC to 240 VAC, 50/60 Hz						3-phase 200 VAC to 240 VAC, 50/60 Hz						1-phase 100 VAC to 120 VAC, 50 Hz/60 Hz			
	Rated Current (A) (*14)	0.9	1.5	2.6	3.2 (*8)	3.8	5.0	10.5	16.0	21.7	28.9	46.0	64.0	95.0	3.0	5.0	9.0
	Permissible Voltage Fluctuation	3-phase or 1-phase 170 VAC to 264 VAC						3-phase 170 VAC to 264 VAC						1-phase 85 VAC to 132 VAC			
	Permissible Frequency Fluctuation	±5% maximum															
Control Circuit Power Supply	Voltage/Frequency	1-phase 200 VAC to 240 VAC, 50/60 Hz												1-phase 100 VAC to 120 VAC, 50 Hz/60 Hz			
	Rated Current (A)	0.2									0.3			0.4			
	Permissible Voltage Fluctuation	1-phase 170 VAC to 264 VAC												1-phase 85 VAC to 132 VAC			
	Permissible Frequency Fluctuation	±5% maximum															
Power Consumption (W)		30									45			30			
Interface Power Supply		24 VDC ±10% (required current capacity: 0.5 A (including CN8 connector signal))															
Control Method		Sine-wave PWM control/current control method															
Tolerable Regenerative Power	Built-in Regenerative Resistor (*2, *3) (W)	-	10	10	10	20	20	100	100	130	170	-	-	-	-	10	10
	External Regenerative Resistor (Standard Accessory) (*2, 3, 11, 12)	-	-	-	-	-	-	-	-	-	-	500 (800)	850 (1300)	850 (1300)	-	-	-
Dynamic Brake		Built-in (*4)										External option (*13)			Built-in (*4)		
Communication Function		USB: Connect a personal computer (MR Configurator2 compatible); RS-422: 1 : n communication (up to 32 axes) (*28)															
Encoder Output Pulse		Compatible (A/B/Z-phase pulse)															
Analog Monitor		2 channels															
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, magnetic pole detection protection, linear servo control fault protection															
Position Control Mode	Maximum Input Pulse Frequency	4 Mpps (when using differential receiver), 200 kpps (when using open-collector)															
	Positioning Feedback Pulse	Encoder resolution: 22 bits															
	Command Pulse Multiplying Factor	Electronic gear A/B multiple, A: 1 to 16777215, B: 1 to 16777215, 1/10 < A/B < 4000															
	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 VDC to +10 VDC/maximum torque)															
Speed Control Mode	Speed Control Range	Analog speed command 1:2000, internal speed command 1:5000															
	Analog Speed Command Input	0 VDC to ±10 VDC/rated speed (Speed at 10 V is changeable with [Pr. PC12])															
	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 VDC to +10 VDC/maximum torque)															
Torque Control Mode	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 VDC to ± 10 VDC/rated speed)															
Fully Closed Loop Control	MR-J4-A(1)	Two-wire type communication method (*9)															
	MR-J4-A(1)-RJ	Two-wire/four-wire type communication method															
Load-Side Encoder Interface	MR-J4-A(1)	Mitsubishi high-speed serial communication															
	MR-J4-A(1)-RJ	Mitsubishi high-speed serial communication, A/B/Z-phase differential input signal															
Servo Function		Advanced vibration suppression control II, adaptive filter II, robust filter, auto tuning, one-touch tuning, tough drive function, drive recorder function, machine diagnosis function, power monitoring function, super trace control (Note 15), lost motion compensation (*15)															
Functional Safety		STO (IEC/EN 61800-5-2)															
Safety Performance	Standards Certified by CB	EN ISO 13849-1 Category 3 PL d, EN 61508 SIL 2, EN 62061 SIL CL 2, EN 61800-5-2 SIL 2															
	Response Performance	8 ms or less (STO input OFF — energy shut-off)															
	Test Pulse Input (STO) (*7)	Test pulse frequency: 1 Hz to 25 Hz; Test pulse off time: 1 ms maximum															
	Mean Time to Dangerous Failure (MTTFd)	100 years or longer															
	Diagnostic Coverage (DCavg)	Medium (90% to 99%)															
Probability of Dangerous Failure Per Hour (PFH)	1.68 × 10 ⁻¹⁰ [1/h]																
Compliance to Standards		CE: EN 61800-5-1, EN 61800-3, EN ISO 13849-1 Category 3 PL d/EN 61508 SIL 2/ EN 62061 SIL CL 2/EN 61800-5-2 SIL 2; RoHS compliant; UL: UL508C															
Structure (IP Rating)		Natural cooling, open (IP20)						Force cooling, open (IP20)						Force cooling, open (IP20) (*5)			Natural cooling, open (IP20)
Close Mounting		Possible (*6)									Not possible			Possible (*6)			
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	1.0	1.0	1.4	1.4	2.1	2.3	4.0	6.2	13.4	13.4	18.2	0.8	0.8	1.0

Notes: For MR-J4 Amplifier notes, please go to page 259.