for a greener tomorrow

MITSUBISHI ELECTRIC
Changes for the Better

General-Purpose AC Servo MELSERVO-JE Series Ethernet Compatible Servo Amplifier MR-JE-C 0.1 kW to 3 kW

August 2017

New Product Release
SV1703-2E-A

CC-Link IE Field Network Basic Compatible Servo Amplifier MR-JE-C

- CC-Link IE Field Network Basic realizes easier network integration, as its cyclic communications stack is software-based, without requiring a dedicated ASIC. Moreover, the MR-JE-C servo amplifiers make it easy to implement "e-F@ctory," Mitsubishi Electric's integrated solution to optimize factories.
- MR-JE-C has the basic performance and advanced ease-of-use of the MR-JE series. MR-JE-C is compatible with both pulse train command and analog voltage command, and supports absolute position detection system.
- MR-JE-C supports MODBUS®/TCP network* which enables the master device to drive machines. Ver.UP
- A capacity of 2 kW and 3 kW is newly added. MR-JE-C covers the capacity range of 0.1 kW to 3 kW in the 200 V class. NEW

* MODBUS®/TCP network is supported by MR-JE-C servo amplifier with software version A3 or later.

CC-Link IE Field Network Basic

Ethernet-based open network

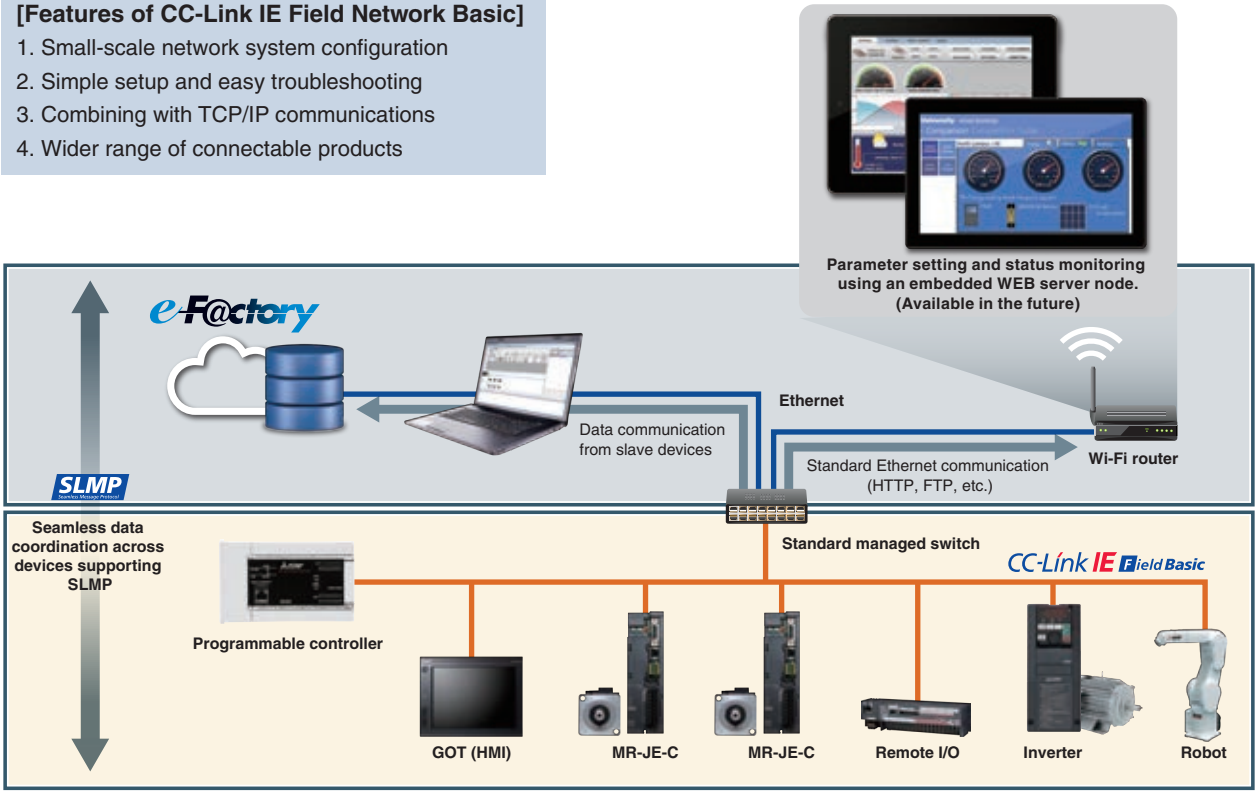
e-F@ctory with MR-JE-C

CC-Link IE Field Basic

CC-Link IE Field Network Basic realizes easier network integration, as its cyclic communications stack is software-based, without requiring a dedicated ASIC. The network operates on the standard Ethernet protocol stack, which can be used together with TCP/IP communications (such as HTTP, FTP). This feature allows CC-Link IE Field Network Basic compatible products and Ethernet compatible products to be connected on the same Ethernet communications line, enabling a highly-flexible and low-cost system.

[Features of CC-Link IE Field Network Basic]

1. Small-scale network system configuration
2. Simple setup and easy troubleshooting
3. Combining with TCP/IP communications
4. Wider range of connectable products



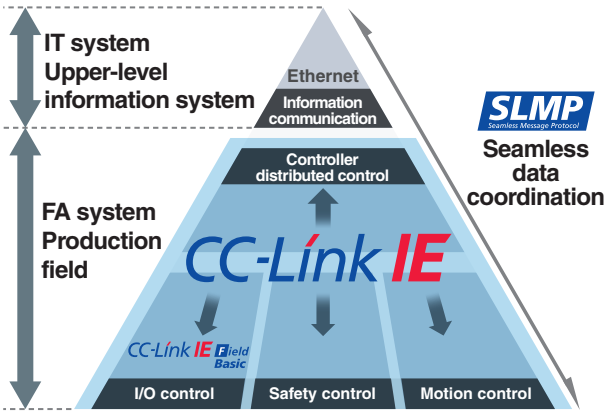
Seamless data coordination

Transparent Communications with Seamless Data Coordination

SLMP

Transparent communications are achieved by utilizing SLMP* that enables seamless connectivity within all levels of manufacturing.
For example, power consumption and a result of machine diagnosis can be checked in the upper-level information system.

* Seamless Message Protocol



Features of MR-JE-C

Profile mode

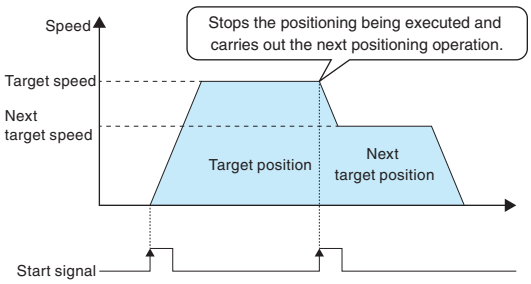
CiA 402 Drive Profile Operation

MR-JE-C servo amplifier supports CiA 402 drive profile.

- Profile position mode: pp
- Profile velocity mode: pv
- Profile torque mode: tq
- Homing mode: hm

The servo amplifier generates a command to a target position based on the target position and speed set in the master station, and starts positioning operation with a start signal.

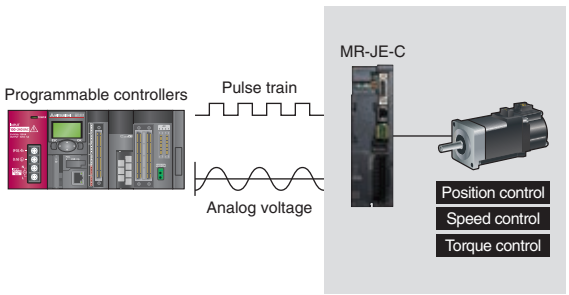
[Continuous operation example of profile position mode]



Pulse train command/analog voltage command

Positioning Module

MR-JE-C supports Positioning modules (both differential and open-collector types) and enables position control by pulse train command and speed/torque control by analog voltage command.



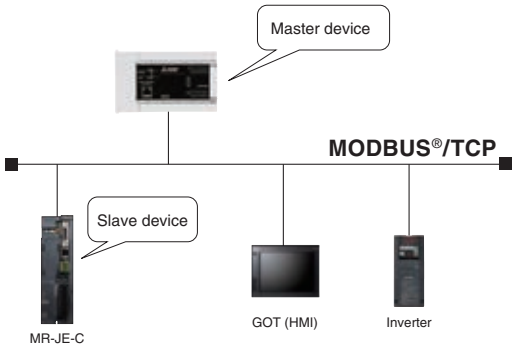
MODBUS®/TCP

MODBUS®/TCP Network

Ver.UP

In addition to CC-Link IE Field Network Basic and SLMP, MODBUS®/TCP network is supported by MR-JE-C, and enables the master device to drive machines.

* MODBUS®/TCP network is supported by MR-JE-C with software version A3 or later.



Multi-axis System with MR-JE-C

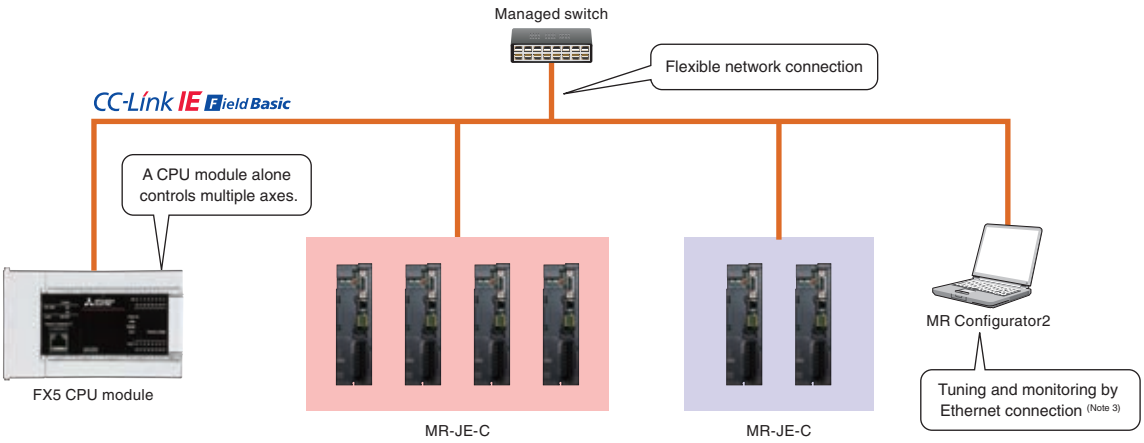
Multi-axis system

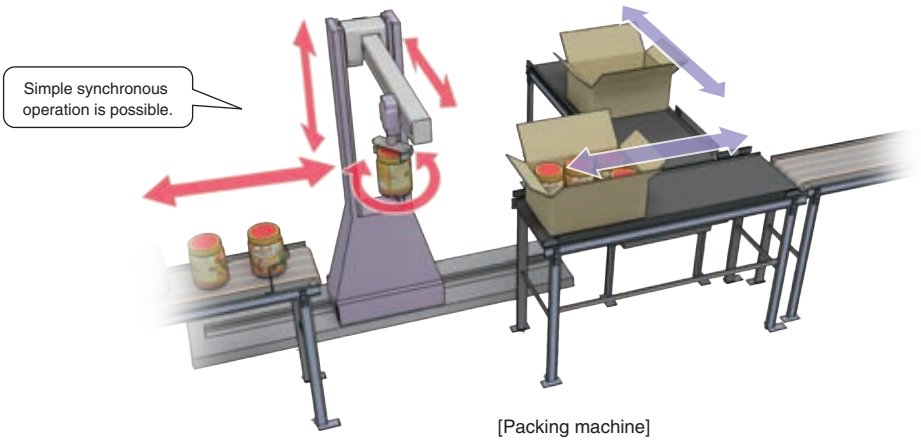
Configuring Multi-axis System Easily

CC-Link IE Field Basic

A system configured with CC-Link IE Field Network Basic has following features:

- Flexible network connection is configured easily using a managed switch.
  (Network topology: Star topology, Maximum station-to-station distance: 100 m (Note 1))
- An FX5 CPU module alone controls multiple axes. (Up to 6 axes are connectable. (Note 2))
- Simple synchronous operations including horizontal, vertical, and rotational movements are possible with a start signal to all axes via cyclic transmission.
- Tuning, monitoring, diagnosing, reading/writing parameters, and test operations are enabled with a personal computer (MR Configurator2) connected via Ethernet. (Note 3) Ver.UP





[Packing machine]

[Application examples]
Packing machines, packaging machines, material handling systems, and parts assembly machines

Notes: 1. For the maximum station-to-station distance, contact manufacturers of the managed switch to be used.
2. For the maximum number of axes to be connected, refer to the relevant instruction manuals of the master station to be used.
3. Ethernet communication is supported by MR-JE-C servo amplifier with software version A3 or later and MR Configurator2 with software version 1.68W or later.

Compliance with Global Standard and Regulations

Use the MR-JE-C servo amplifiers globally. The servo amplifiers and the servo motors comply with global standards as standard.

Servo amplifier

European EC directive	Low voltage directive	EN 61800-5-1
	EMC directive	EN 61800-3 Category C3
	RoHS directive	EN 50581
UL standard		UL 508C
CSA standard		CSA C22.2 No.14
Measures for Administration of the Pollution Control of Electronic Information Products (Chinese RoHS)		Compliant (Names and the content of hazardous substances are described in Instruction Manuals.)
China Compulsory Certification (CCC)		N/A
Korea Radio Wave Law (KC)		Compliant
Certification system of the Eurasian Economic Union (EAC)		Compliant

Rotary servo motor

European EC directive	Low voltage directive	EN 60034-1
	EMC directive	EN 61800-3 Category C3
	RoHS directive	EN 50581
UL standard		UL 1004-1 / UL 1004-6
CSA standard		CSA C22.2 No.100
Measures for Administration of the Pollution Control of Electronic Information Products (Chinese RoHS)		Compliant (Names and the content of hazardous substances are described in Instruction Manuals.)
China Compulsory Certification (CCC)		N/A
Korea Radio Wave Law (KC)		N/A
Certification system of the Eurasian Economic Union (EAC)		Compliant

Related Catalogs

Servo Amplifiers & Motors
MELSERVO-JE Catalog
L(NA)03086ENG

CC-Link IE
Field Network Basic
Compatible Products
N001ENG-A

Model Designation for Servo Amplifier

M R - J E - 1 0 C

Mitsubishi Electric general-purpose AC servo amplifier MELSERVO-JE Series

Symbol	Interface
C	Ethernet

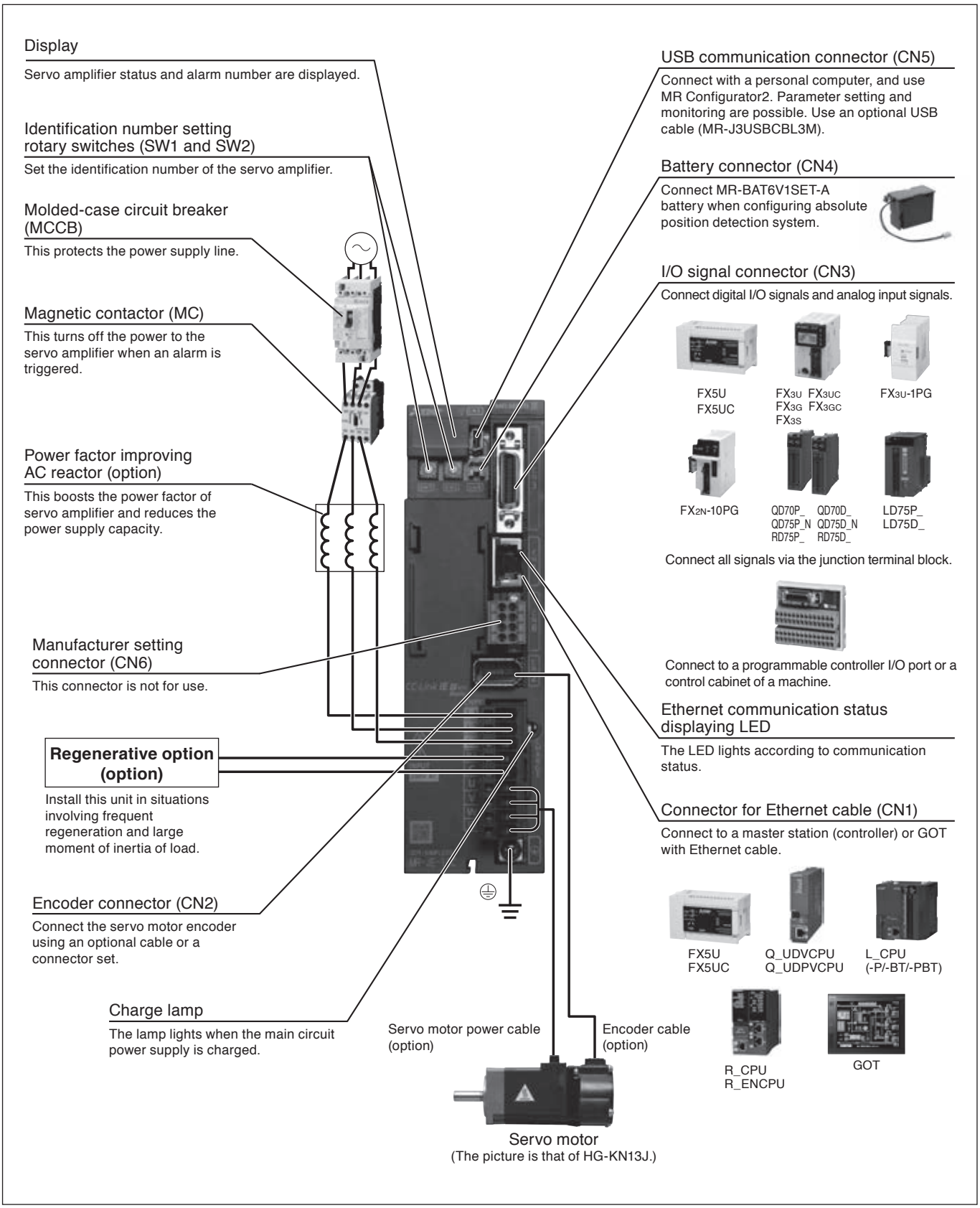
Symbol	Rated output [kW]
10	0.1
20	0.2
40	0.4
70	0.75
100	1
200	2
300	3

Combinations of Servo Amplifier and Servo Motor

Servo amplifier	Servo motor	
	HG-KN series	HG-SN series
MR-JE-10C	HG-KN13(B)J	-
MR-JE-20C	HG-KN23(B)J	-
MR-JE-40C	HG-KN43(B)J	-
MR-JE-70C	HG-KN73(B)J	HG-SN52(B)J
MR-JE-100C	-	HG-SN102(B)J
MR-JE-200C	-	HG-SN152(B)J, HG-SN202(B)J
MR-JE-300C	-	HG-SN302(B)J

MR-JE-C Connections with Peripheral Equipment (Note 1)

Peripheral equipment is connected to MR-JE-C as described below. Connectors, cables, options, and other necessary equipment are available so that users can set up the servo amplifier easily and start using it right away.



Notes: 1. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for the actual connections.

MR-JE-C (Ethernet Interface) Specifications

Servo amplifier model MR-JE-			10C	20C	40C	70C	100C	200C	300C
Output	Rated voltage		3-phase 170 V AC						
	Rated current	[A]	1.1	1.5	2.8	5.8	6.0	11.0	11.0
Power supply input	Voltage/frequency (Note 1)		3-phase or 1-phase 200 V AC to 240 V AC, 50 Hz/60 Hz				3-phase or 1-phase 200 V AC to 240 V AC, 50 Hz/60 Hz (Note 7)		3-phase 200 V AC to 240 V AC, 50 Hz/60 Hz
	Rated current (Note 6)	[A]	0.9	1.5	2.6	3.8	5.0	10.5	14.0
	Permissible voltage fluctuation		3-phase or 1-phase 170 V AC to 264 V AC				3-phase or 1-phase 170 V AC to 264 V AC (Note 7)		3-phase 170 V AC to 264 V AC
	Permissible frequency fluctuation		±5% maximum						
Interface power supply			24 V DC ± 10% (required current capacity: 0.3 A)						
Control method			Sine-wave PWM control/current control method						
Permissible regenerative power of the built-in regenerative resistor (Note 2, 3)		[W]	-	-	10	20	20	100	100
Dynamic Brake (Note 4)			Built-in						
Communication function	Ethernet (Note 8)		Connect a master station (controller), a personal computer, etc. (MR Configurator2 compatible)						
	USB		Connect a personal computer (MR Configurator2 compatible)						
Encoder output pulse			Compatible (A/B/Z-phase pulse)						
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						
	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)						
Speed control mode	Speed control range		Analog speed command 1:2000, internal speed command 1:5000						
	Analog speed command input		0 V DC to ±10 V DC/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 V DC to +10 V DC/maximum torque)						
Torque control mode	Analog torque command input		0 V DC to ±8 V DC/maximum torque (input impedance: 10 kΩ to 12 kΩ)						
	Speed limit		Set by parameters						

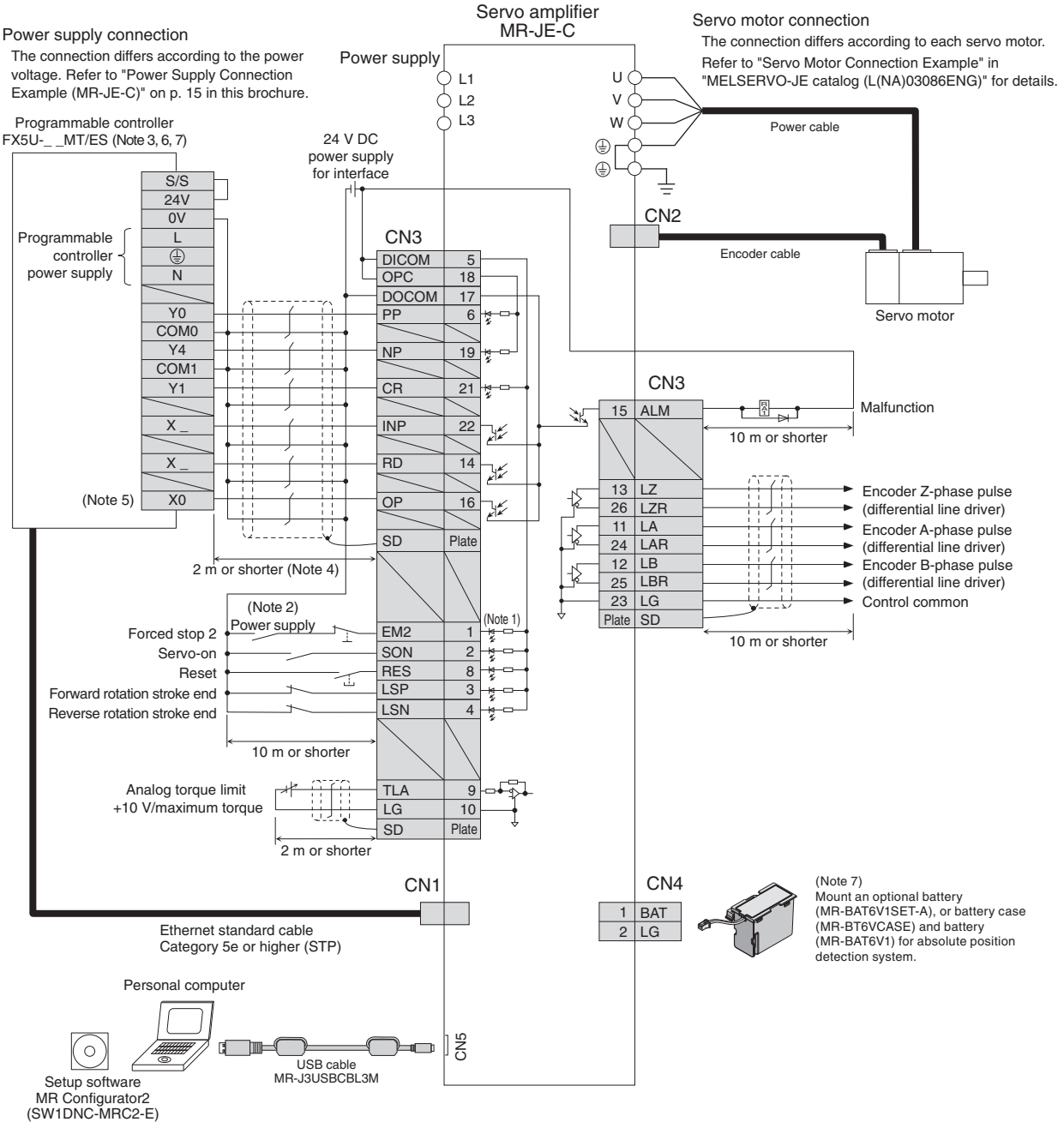
MR-JE-C (Ethernet Interface) Specifications

Servo amplifier model MR-JE-			10C	20C	40C	70C	100C	200C	300C
Profile mode	Profile position mode	Command position range	Set by objects Setting range of feed length: -2147483648 to 2147483647 [pulse], Setting range of rotation angle: -360.000 to 360.000 [degree]						
		Command multiplying factor	Electronic gear A/B multiple, A: 1 to 16777215, B: 1 to 16777215, 1/27649 < A/B < 8484						
		Positioning complete width setting	0 pulse to ±65535 pulses (command pulse unit)						
		Error excessive	±3 rotations						
		Torque limit	Set by parameters or objects						
	Profile velocity mode	Command speed range	-21474836.48 to 21474836.47 r/min (Fixed to the permissible speed)						
		Torque limit	Set by parameters or objects (Fixed to the maximum torque)						
	Profile torque mode	Command torque range	-3276.8 to 3276.7% (Fixed to the maximum torque)						
		Speed limit	Set by parameters or objects (Fixed to the permissible speed)						
	Homing mode	Mitsubishi Electric original method	Dog type, count type, data set type, stopper type, home position ignorance (servo-on position as home position), dog type rear end reference, count type front end reference, dog cradle type, dog type adjacent Z-phase reference, dog type front end reference, dogless Z-phase reference						
		CiA 402 method	Homing on positive home switch and index pulse (method 3, 4), Homing on negative home switch and index pulse (method 5, 6), Homing on home switch and index pulse (method 7, 8, 11, 12), Homing without index pulse (method 19, 20, 21, 22, 23, 24, 27, 28), Homing on index pulse (method 33, 34), Homing on current position (method 35, 37)						
Servo functions			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, lost motion compensation 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						
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 5 in this brochure.						
Structure (IP rating)			Natural cooling, open (IP20)					Force cooling, open (IP20)	
Close mounting (Note 5)		3-phase power supply input	Possible						
		1-phase power supply input	Possible				Not possible		
Environment		Ambient temperature	Operation: 0 °C to 55 °C (non-freezing), storage: -20 °C to 65 °C (non-freezing)						
		Ambient humidity	Operation/storage: 5 %RH to 90 %RH (non-condensing)						
		Ambience	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust						
		Altitude	2000 m or less above sea level (Note 9)						
		Vibration resistance	5.9 m/s^2 at 10 Hz to 55 Hz (directions of X, Y, and Z axes)						
Mass		[kg]	0.8	0.8	0.8	1.5	1.5	2.1	2.1

Notes: 1. Rated output and speed of a servo motor are applicable when the servo amplifier is operated within the specified power supply voltage and frequency.
2. Select the most suitable regenerative option for your system with our capacity selection software.
3. Refer to "Regenerative Option" in this brochure for the permissible regenerative power [W] when a regenerative option is used.
4. When using the dynamic brake, refer to "MR-JE-_C Servo Amplifier Instruction Manual" for the permissible load to motor inertia ratio.
5. When the servo amplifiers are closely mounted, keep the ambient temperature within 0 °C to 45 °C, or use the servo amplifiers with 75% or less of the effective load ratio.
6. This value is applicable when a 3-phase power supply is used.
7. When a 1-phase 200 V AC to 240 V AC power supply is used, use the servo amplifiers with 75% or less of the effective load ratio.
8. CC-Link IE field network Basic, SLMP, and MODBUS®/TCP are supported. MR Configurator2 is also connectable.
9. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for the restrictions when using the servo amplifiers at altitude exceeding 1000 m and up to 2000 m above sea level.

MR-JE-C Standard Wiring Diagram Example: Position Control Operation

Connecting to FX5U-_ _MT/ES

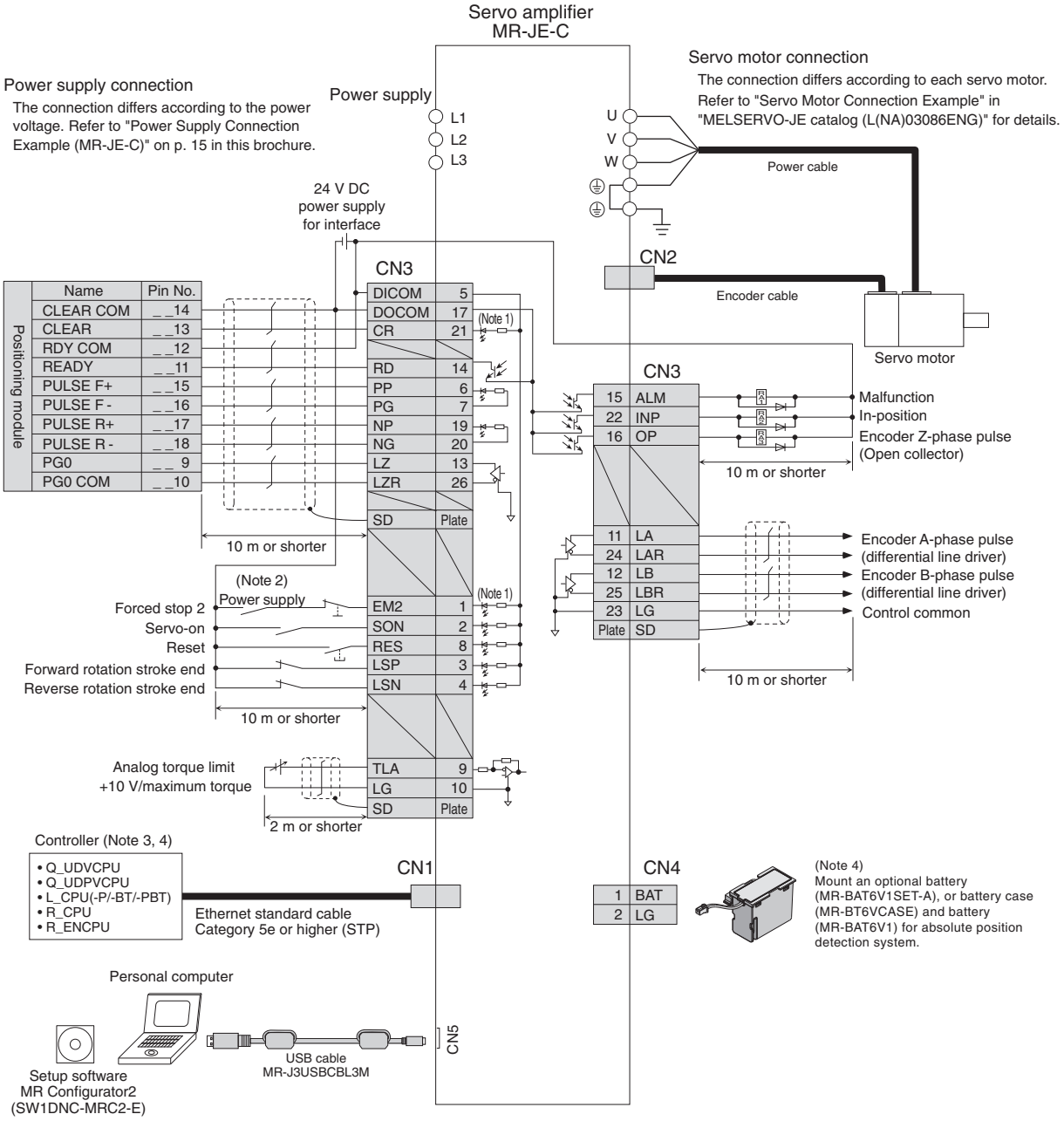


Notes: 1. This is for sink wiring. Source wiring is also possible.
2. To prevent an unexpected restart of the servo amplifier, create a circuit to turn off EM2 (Forced stop 2) when the power is turned off.
3. Select the number of input/output points of the programmable controller according to your system.
4. It is recommended that the connection be 2 m or shorter because an open-collector system is used.
5. Select from the range of X0 to X7.
6. For details such as setting the controllers, refer to programming manual or user's manual for the controllers.
7. When the absolute position detection system is used, absolute position data is read with the Ethernet communication. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for details.

⚠ Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

MR-JE-C Standard Wiring Diagram Example: Position Control Operation

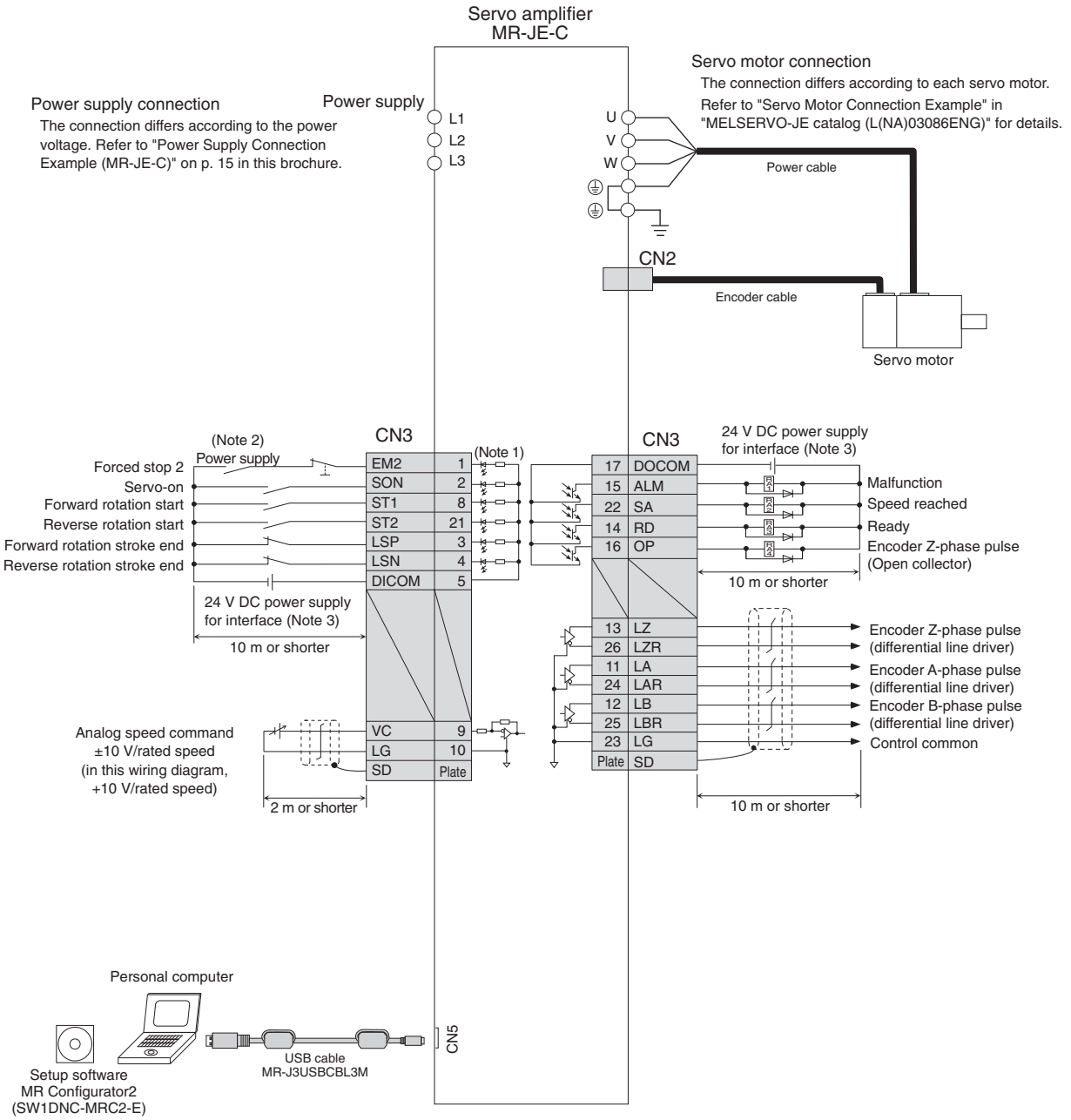
Connecting to QD75D/LD75D/RD75D



Notes: 1. This is for sink wiring. Source wiring is also possible.
2. To prevent an unexpected restart of the servo amplifier, create a circuit to turn off EM2 (Forced stop 2) when the power is turned off.
3. For details such as setting the controllers, refer to programming manual or user's manual for the controllers.
4. When absolute position detection system is used, absolute position data is read with the Ethernet communication. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for details.

⚠ Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

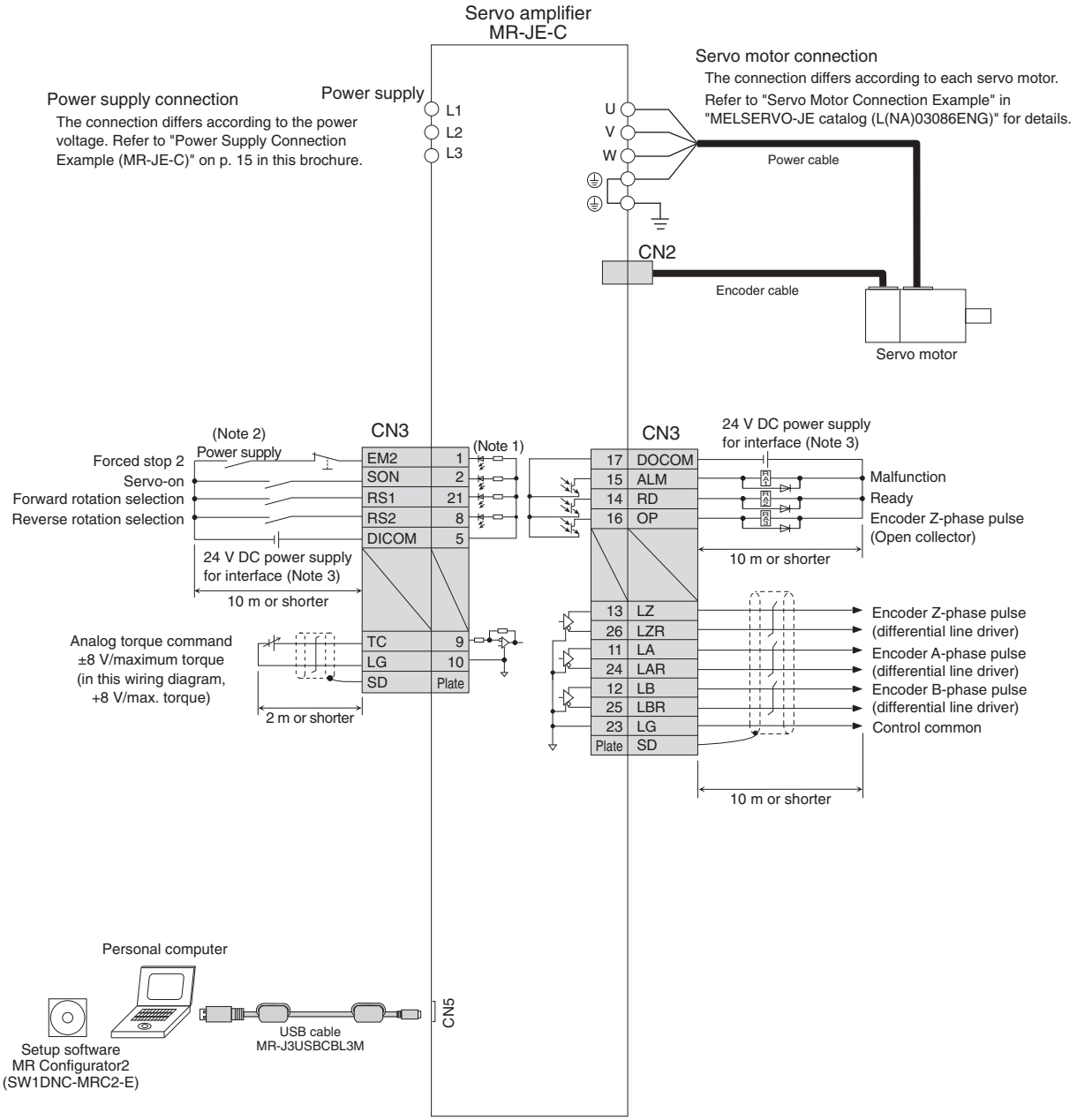
MR-JE-C Standard Wiring Diagram Example: Speed Control Operation



Notes: 1. This is for sink wiring. Source wiring is also possible.
2. To prevent an unexpected restart of the servo amplifier, create a circuit to turn off EM2 (Forced stop 2) when the power is turned off.
3. For convenience of illustration, the diagram shows separate 24 V DC power supplies for input and output signals. However, the input and output signals can share a common power supply.

⚠ Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

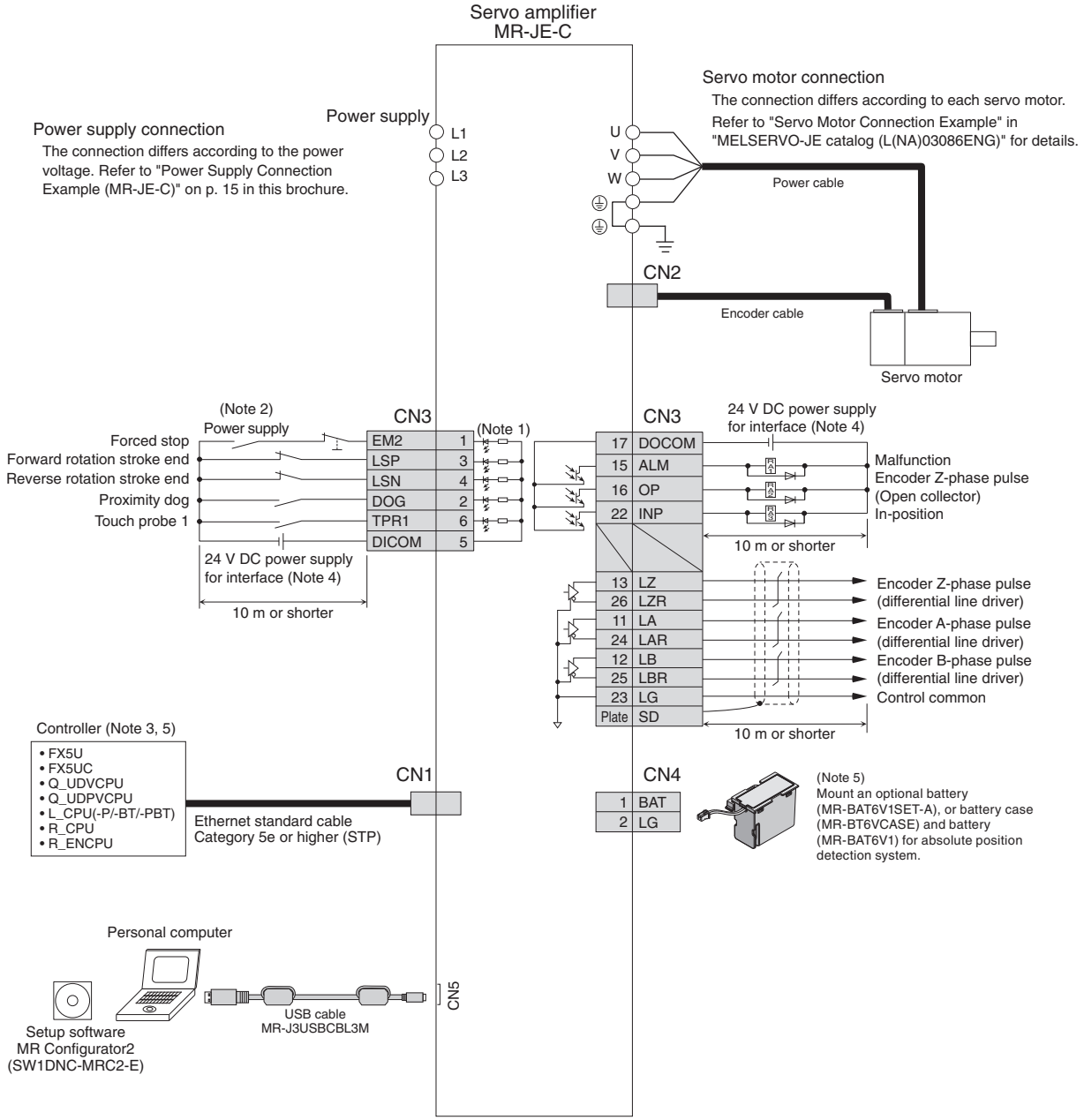
MR-JE-C Standard Wiring Diagram Example: Torque Control Operation



Notes: 1. This is for sink wiring. Source wiring is also possible.
2. To prevent an unexpected restart of the servo amplifier, create a circuit to turn off EM2 (Forced stop 2) when the power is turned off.
3. For convenience of illustration, the diagram shows separate 24 V DC power supplies for input and output signals. However, the input and output signals can share a common power supply.

⚠ Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

MR-JE-C Standard Wiring Diagram Example: Profile (Position/Velocity/Torque) Operation

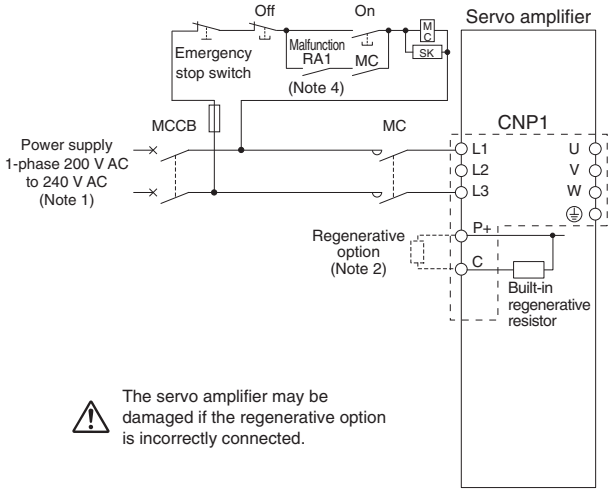


Notes: 1. This is for sink wiring. Source wiring is also possible.
2. To prevent an unexpected restart of the servo amplifier, create a circuit to turn off EM2 (Forced stop 2) when the power is turned off.
3. For details such as setting the controllers, refer to programming manual or user's manual for the controllers.
4. For convenience of illustration, the diagram shows separate 24 V DC power supplies for input and output signals. However, the input and output signals can share a common power supply.
5. Refer to "MR-JE-_C Servo Amplifier Instruction Manual (Profile Mode)" when using absolute position detection system.

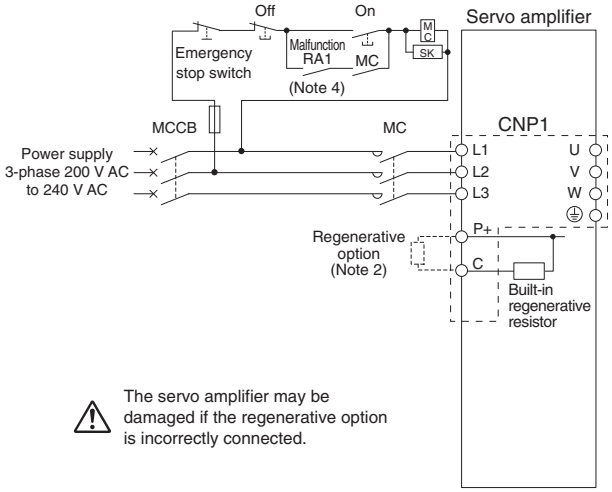
⚠ Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

Power Supply Connection Example (MR-JE-C)

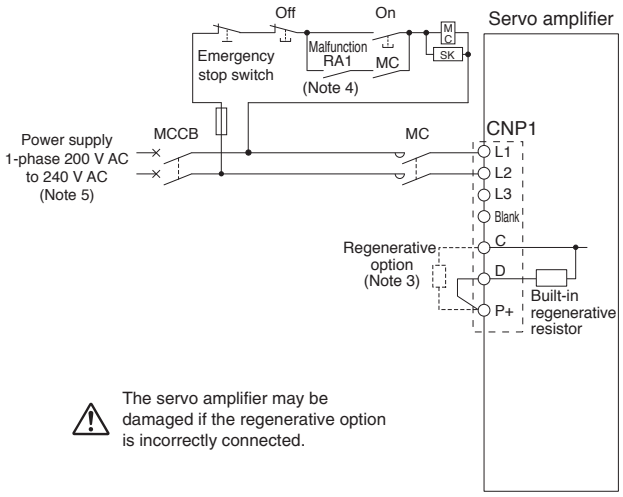
●For 1-phase 200 V AC, 1 kW or smaller



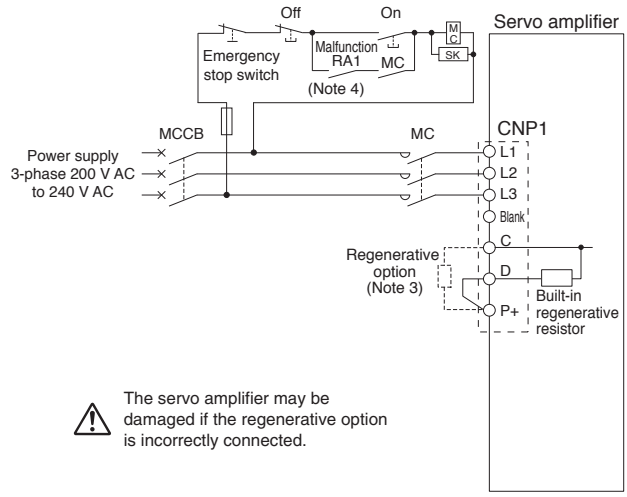
●For 3-phase 200 V AC, 1 kW or smaller



●For 1-phase 200 V AC, 2 kW



●For 3-phase 200 V AC, 2 kW and 3 kW



Notes: 1. For 1-phase 200 V AC to 240 V AC, connect the power supply to L1 and L3 terminals. Do not connect anything to L2.
2. Disconnect the wires for the built-in regenerative resistor (P+ and C), and remove the resistor when connecting the regenerative option externally.
3. Disconnect a short-circuit bar between P+ and D when connecting the regenerative option externally.
4. Create a power circuit to turn off the magnetic contactor when ALM (Malfunction) is off (alarm occurrence).
5. For 1-phase 200 V AC to 240 V AC, connect the power supply to L1 and L2 terminals. Do not connect anything to L3.

Be sure to read through Instruction Manual for the actual wiring and use. Use the equipment after you have a full knowledge of the equipment, safety information and instructions.

MODBUS®/TCP Specifications

MODBUS®/TCP is a protocol which enables a MODBUS® message to be sent via Ethernet.

Item	Specifications
Communication protocol	MODBUS®/TCP protocol
Port No.	502
Maximum number of connections	3
Waiting time setting	None
Master/slave classification	Slave (server)

MODBUS®/TCP Compatible Function Codes

MR-JE-C servo amplifier is compatible with following function code.

Code	Function name	Description
03h	Read Holding Registers	Reading holding registers Reads data stored in holding registers from a master.
08h	Diagnostics	Functional diagnostics When this function code is sent from a master to slaves, the slaves return the data as it is. This function can be used for checking the communication status.
10h	Preset Multiple Registers	Writing to multiple registers Writes a series of multiple data to holding registers from a master.

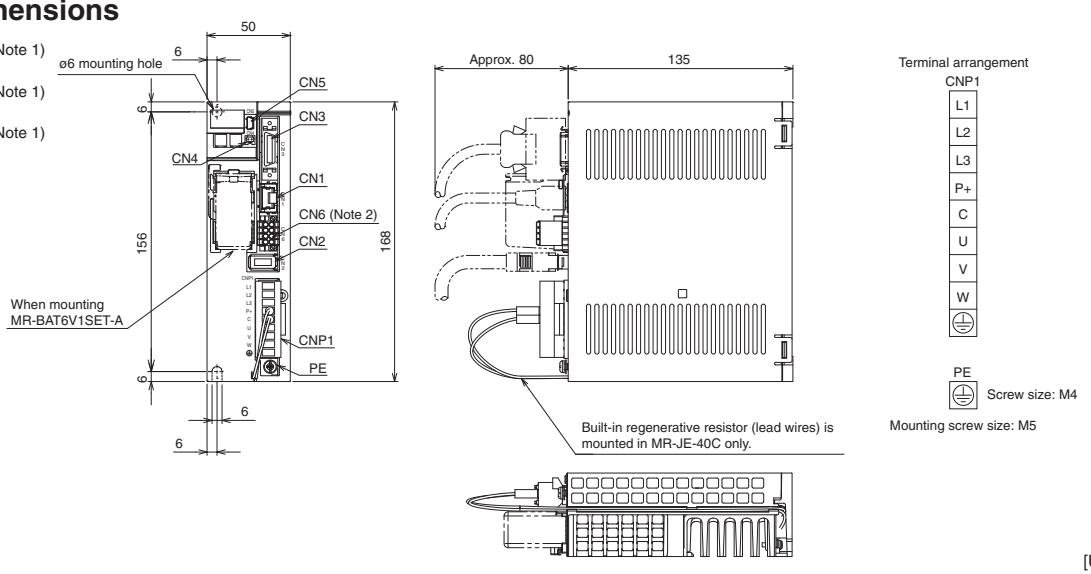
MODBUS®/TCP Functions

The functions of MODBUS®/TCP are as follows. MODBUS®/TCP can operate and maintain the servo amplifier by remote control.

Function	Description
Status monitor	Reads the items of "Display All" in monitor function of MR Configurator 2 such as servo motor speed and droop pulse.
Parameter setting	Reads and writes parameters.
Current alarm reading	Reads an alarm No. currently generated.
Alarm history reading	Reads all 16 alarm histories.
Parameter error No. reading	Reads corresponding parameter No. for parameter error.
Input/output monitor	Reads on/off status of input/output signal and monitor situation of input/output device.
Motor driving	Drives servo motors.

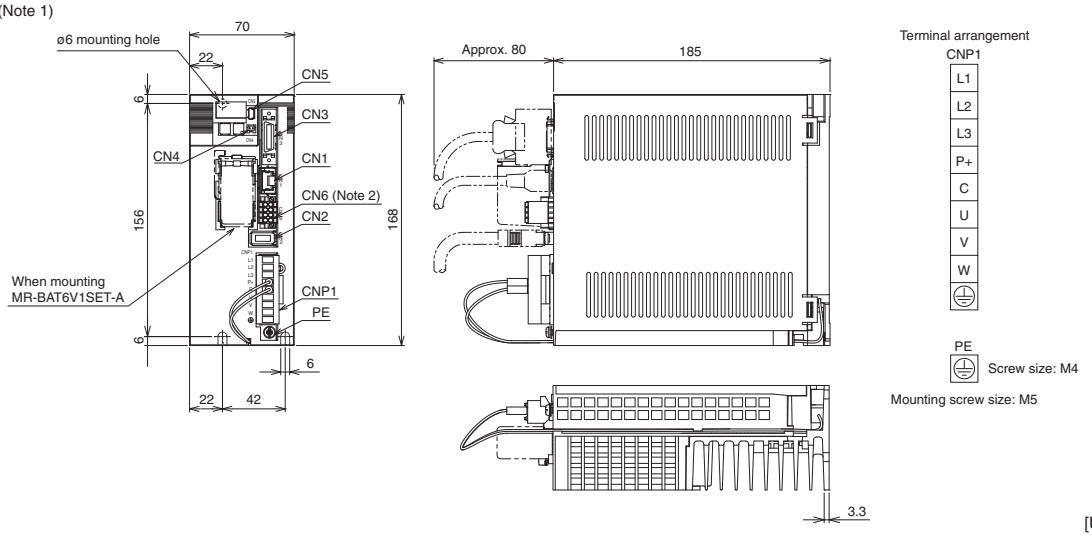
MR-JE-C Dimensions

●MR-JE-10C (Note 1)
●MR-JE-20C (Note 1)
●MR-JE-40C (Note 1)



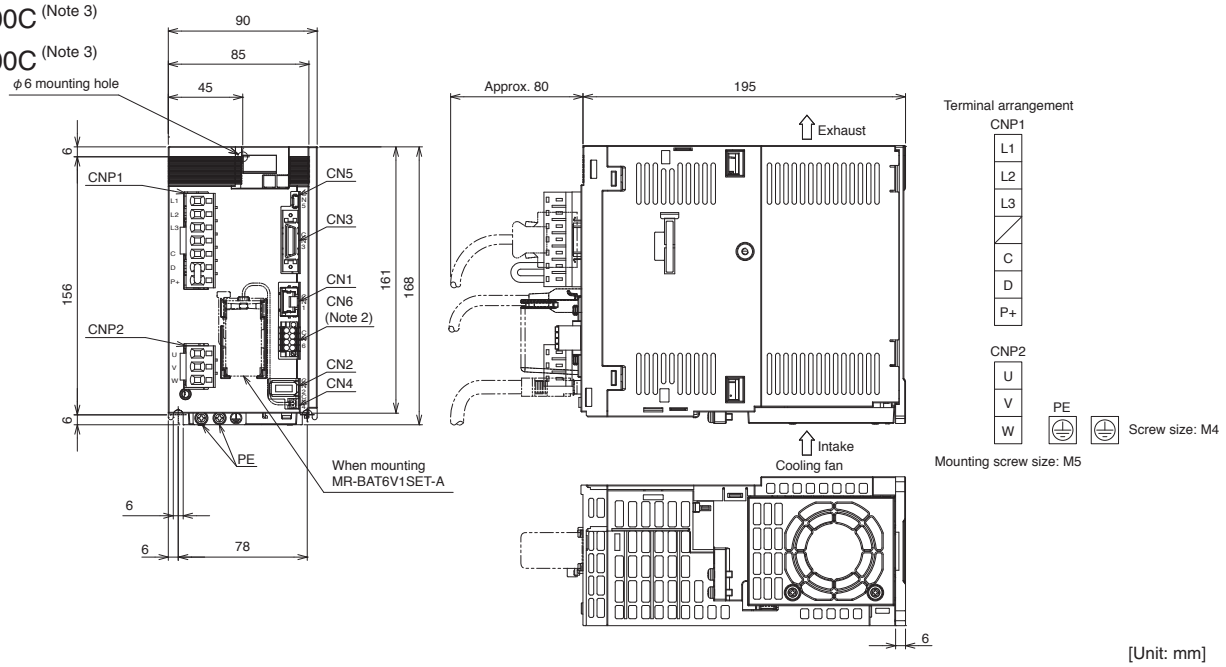
[Unit: mm]

●MR-JE-70C (Note 1)
●MR-JE-100C (Note 1)



[Unit: mm]

●MR-JE-200C (Note 3)
●MR-JE-300C (Note 3)



[Unit: mm]

Notes: 1. CNP1 connector (insertion type) is supplied with the servo amplifier.
2. CN6 connector is for manufacturer setting.
3. CNP1 and CNP2 connectors (insertion type) are supplied with the servo amplifier.

HG-KN Series (Low Inertia, Small Capacity) Specifications

Servo motor model		HG-KN	13(B)J	23(B)J	43(B)J	73(B)J
Compatible servo amplifier model			Refer to "Combinations of Servo Amplifier and Servo Motor" on p. 6 in this brochure.			
Power supply capacity [*1]		[kVA]	0.3	0.5	0.9	1.3
Continuous running duty	Rated output	[W]	100	200	400	750
	Rated torque (Note 3)	[N•m]	0.32	0.64	1.3	2.4
Maximum torque		[N•m]	0.95	1.9	3.8	7.2
Rated speed		[r/min]	3000			
Maximum speed		[r/min]	5000 (6000) (Note 6)			
Permissible instantaneous speed		[r/min]	5750 (6900) (Note 6)			
Power rate at continuous rated torque	Standard	[kW/s]	12.9	18.0	43.2	44.5
	With electromagnetic brake	[kW/s]	12.0	16.4	40.8	41.0
Rated current		[A]	0.8	1.3	2.6	4.8
Maximum current		[A]	2.4	3.9	7.8	14
Regenerative braking frequency [*2, *3]		[times/min]	(Note 4)	(Note 5)	276	159
Moment of inertia J	Standard	[× 10^{-4} kg•m^2]	0.0783	0.225	0.375	1.28
	With electromagnetic brake	[× 10^{-4} kg•m^2]	0.0843	0.247	0.397	1.39
Recommended load to motor inertia ratio (Note 1)			15 times or less			
Speed/position detector			Absolute (Note 7)/incremental 17-bit encoder (resolution: 131072 pulses/rev)			
Oil seal			Installed			
Thermistor			None			
Insulation class			130 (B)			
Structure			Totally enclosed, natural cooling (IP rating: IP65) (Note 2)			
Environment [*4]	Ambient temperature		Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing)			
	Ambient humidity		Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing)			
	Ambience		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Altitude		2000 m or less above sea level (Note 8)			
	Vibration resistance [*5]		X: 49 m/s^2 Y: 49 m/s^2			
Vibration rank			V10 [*7]			
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 5 in this brochure.			
Permissible load for the shaft [*6]	L	[mm]	25	30	30	40
	Radial	[N]	88	245	245	392
	Thrust	[N]	59	98	98	147
Mass	Standard	[kg]	0.57	0.98	1.5	3.0
	With electromagnetic brake	[kg]	0.77	1.4	1.9	4.0

Notes: 1. Contact your local sales office if the load to motor inertia ratio exceeds the value in the table.
2. The shaft-through portion is excluded. Refer to the asterisk 8 of "Annotations for Servo Motor Specifications" on p. 22 in this brochure for the shaft-through portion.
3. When unbalanced torque is generated, such as in a vertical lift machine, keep the unbalanced torque of the machine under 70% of the servo motor rated torque.
4. When the servo motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited. When the servo motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the load to motor inertia ratio is 11 times or less.
5. When the servo motor decelerates to a stop from the rated speed, the regenerative frequency will not be limited if the load to motor inertia ratio is 9 times or less. When the servo motor decelerates to a stop from the maximum speed, the regenerative frequency will not be limited if the load to motor inertia ratio is 3 times or less.
6. The value in brackets is applicable with parameter setting. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for details.
7. When absolute position detection system is used, absolute position data is read with the Ethernet communication. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for details.
8. Refer to "HG-KN HG-SN Servo Motor Instruction Manual" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.

Refer to "Annotations for Servo Motor Specifications" on p. 22 in this brochure for the asterisks 1 to 7.

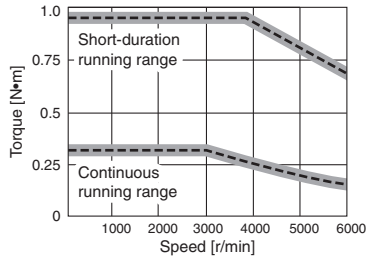
HG-KN Series Electromagnetic Brake Specifications (Note 1)

Servo motor model	HG-KN	13BJ	23BJ	43BJ	73BJ
Type		Spring actuated type safety brake			
Rated voltage		24 V DC $^{0}_{-10}$%			
Power consumption	[W] at 20 °C	6.3	7.9	7.9	10
Electromagnetic brake static friction torque	[N•m]	0.32	1.3	1.3	2.4
Permissible braking work	Per braking [J]	5.6	22	22	64
	Per hour [J]	56	220	220	640
Electromagnetic brake life (Note 2)	Number of braking times	20000	20000	20000	20000
	Work per braking [J]	5.6	22	22	64

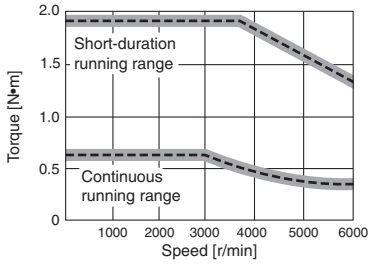
Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

HG-KN Series Torque Characteristics

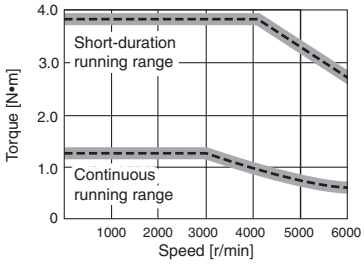
HG-KN13(B)J (Note 1, 2, 3)



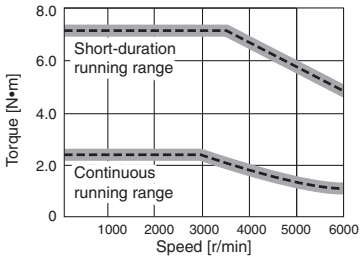
HG-KN23(B)J (Note 1, 2, 3)



HG-KN43(B)J (Note 1, 2, 3)



HG-KN73(B)J (Note 1, 2, 3)



Notes: 1. For 3-phase 200 V AC.
2. For 1-phase 230 V AC.
3. Torque drops when the power supply voltage is below the specified value.

HG-SN Series (Medium Inertia, Medium Capacity) Specifications

Servo motor model HG-SN			52(B)J	102(B)J	152(B)J	202(B)J	302(B)J
Compatible servo amplifier model			Refer to "Combinations of Servo Amplifier and Servo Motor" on p. 6 in this brochure.				
Power supply capacity [*1]		[kVA]	1.0	1.7	2.5	3.5	4.8
Continuous running duty	Rated output	[kW]	0.5	1.0	1.5	2.0	3.0
	Rated torque [(Note 3)]	[N•m]	2.39	4.77	7.16	9.55	14.3
Maximum torque		[N•m]	7.16	14.3	21.5	28.6	42.9
Rated speed		[r/min]	2000				
Maximum speed		[r/min]	3000				2500
Permissible instantaneous speed		[r/min]	3450				2875
Power rate at continuous rated torque	Standard	[kW/s]	7.85	19.7	32.1	19.5	26.1
	With electromagnetic brake	[kW/s]	6.01	16.5	28.2	16.1	23.3
Rated current		[A]	2.9	5.6	9.4	9.6	11
Maximum current		[A]	9.0	17	29	31	33
Regenerative braking frequency [*2, *3]		[times/min]	62	38	139	47	28
Moment of inertia J	Standard	[× 10^{-4} kg•m^2]	7.26	11.6	16.0	46.8	78.6
	With electromagnetic brake	[× 10^{-4} kg•m^2]	9.48	13.8	18.2	56.5	88.2
Recommended load to motor inertia ratio [(Note 1)]			15 times or less				
Speed/position detector			Absolute [(Note 4)]/incremental 17-bit encoder (resolution: 131072 pulses/rev)				
Oil seal			Installed				
Thermistor			None				
Insulation class			155 (F)				
Structure			Totally enclosed, natural cooling (IP rating: IP67) [(Note 2)]				
Environment [*4]	Ambient temperature		Operation: 0 °C to 40 °C (non-freezing), storage: -15 °C to 70 °C (non-freezing)				
	Ambient humidity		Operation: 10 %RH to 80 %RH (non-condensing), storage: 10 %RH to 90 %RH (non-condensing)				
	Ambience		Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Altitude		2000 m or less above sea level [(Note 5)]				
	Vibration resistance [*5]		X: 24.5 m/s^2 Y: 24.5 m/s^2			X: 24.5 m/s^2 Y: 49 m/s^2	
Vibration rank			V10 [*7]				
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 5 in this brochure.				
Permissible load for the shaft [*6]	L	[mm]	55	55	55	79	79
	Radial	[N]	980	980	980	2058	2058
	Thrust	[N]	490	490	490	980	980
Mass	Standard	[kg]	4.8	6.2	7.3	11	16
	With electromagnetic brake	[kg]	6.7	8.2	9.3	17	22

Notes: 1. Contact your local sales office if the load to motor inertia ratio exceeds the value in the table.
2. The shaft-through portion is excluded. Refer to the asterisk 8 of "Annotations for Servo Motor Specifications" on p. 22 in this brochure for the shaft-through portion.
3. When unbalanced torque is generated, such as in a vertical lift machine, keep the unbalanced torque of the machine under 70% of the servo motor rated torque.
4. When absolute position detection system is used, absolute position data is read with the Ethernet communication. Refer to "MR-JE-_C Servo Amplifier Instruction Manual" for details.
5. Refer to "HG-KN HG-SN Servo Motor Instruction Manual" for the restrictions when using the servo motors at altitude exceeding 1000 m and up to 2000 m above sea level.

Refer to "Annotations for Servo Motor Specifications" on p. 22 in this brochure for the asterisks 1 to 7.

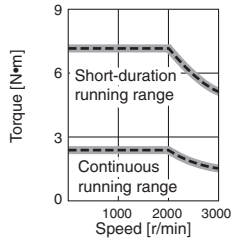
HG-SN Series Electromagnetic Brake Specifications (Note 1)

Servo motor model	HG-SN	52BJ	102BJ	152BJ	202BJ	302BJ
Type		Spring actuated type safety brake				
Rated voltage		24 V DC $^{0}_{-10}$%				
Power consumption	[W] at 20 °C	20	20	20	34	34
Electromagnetic brake static friction torque	[N•m]	8.5	8.5	8.5	44	44
Permissible braking work	Per braking [J]	400	400	400	4500	4500
	Per hour [J]	4000	4000	4000	45000	45000
Electromagnetic brake life (Note 2)	Number of braking times	20000	20000	20000	20000	20000
	Work per braking [J]	200	200	200	1000	1000

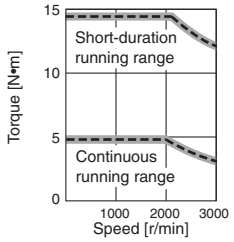
Notes: 1. The electromagnetic brake is for holding. It should not be used for deceleration applications.
2. Brake gap is not adjustable. Electromagnetic brake life is defined as the time period until the readjustment is needed.

HG-SN Series Torque Characteristics

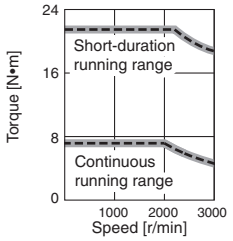
HG-SN52(B)J (Note 1, 2, 3)



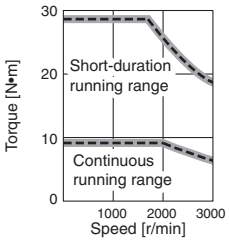
HG-SN102(B)J (Note 1, 2, 3)



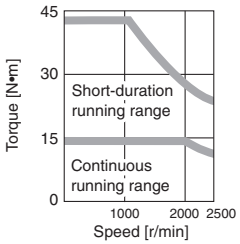
HG-SN152(B)J (Note 1, 2, 3)



HG-SN202(B)J (Note 1, 2, 3)



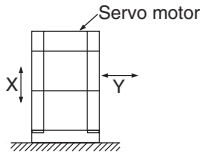
HG-SN302(B)J (Note 1, 3)



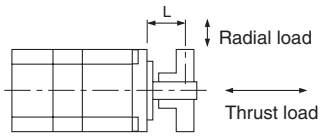
Notes: 1. ——— For 3-phase 200 V AC.
2. - - - - For 1-phase 230 V AC.
3. Torque drops when the power supply voltage is below the specified value.

Annotations for Servo Motor Specifications

*1. The power supply capacity varies depending on the power supply impedance.
*2. The regenerative braking frequency shows the permissible frequency when the servo motor, without a load and a regenerative option, decelerates from the rated speed to a stop. When a load is connected; however, the value will be the table value/(m+1), where m = Moment of inertia of load/Moment of inertia of servo motor.
When the operating speed exceeds the rated speed, the regenerative braking frequency is inversely proportional to the square of (operating speed/rated speed). Take measures to keep the regenerative power [W] during operation below the permissible regenerative power [W]. Use caution, especially when the operating speed changes frequently or when the regeneration is constant (as with vertical feeds). Select the most suitable regenerative option for your system with our capacity selection software.
Refer to "Regenerative Option" in this brochure for the permissible regenerative power [W] when regenerative option is used.
*3. For 400 W or smaller servo amplifiers, the regenerative braking frequency may change affected by the power supply voltage due to the large ratio of the energy charged into the electrolytic capacitor in the servo amplifier.
*4. In the environment where the servo motor is exposed to oil mist, oil and/or water, a standard specification servo motor may not be usable. Contact your local sales office for more details.
*5. The vibration direction is shown in the diagram below. The numerical value indicates the maximum value of the component (commonly the bracket in the opposite direction of the servo motor shaft).
Fretting tends to occur on the bearing when the servo motor stops. Thus, maintain vibration level at approximately one-half of the allowable value.

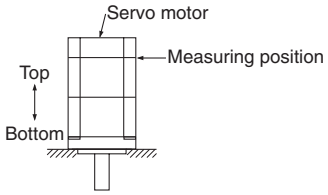


*6. Refer to the diagram below for the permissible load for the shaft. Do not apply a load exceeding the value specified in the table on the shaft. The values in the table are applicable when each load is applied singly.

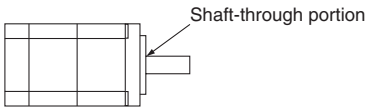


L: Distance between the flange mounting surface and the center of load

*7. V10 indicates that the amplitude of the servo motor itself is 10 µm or less. The following shows mounting posture and measuring position of the servo motor during the measurement:



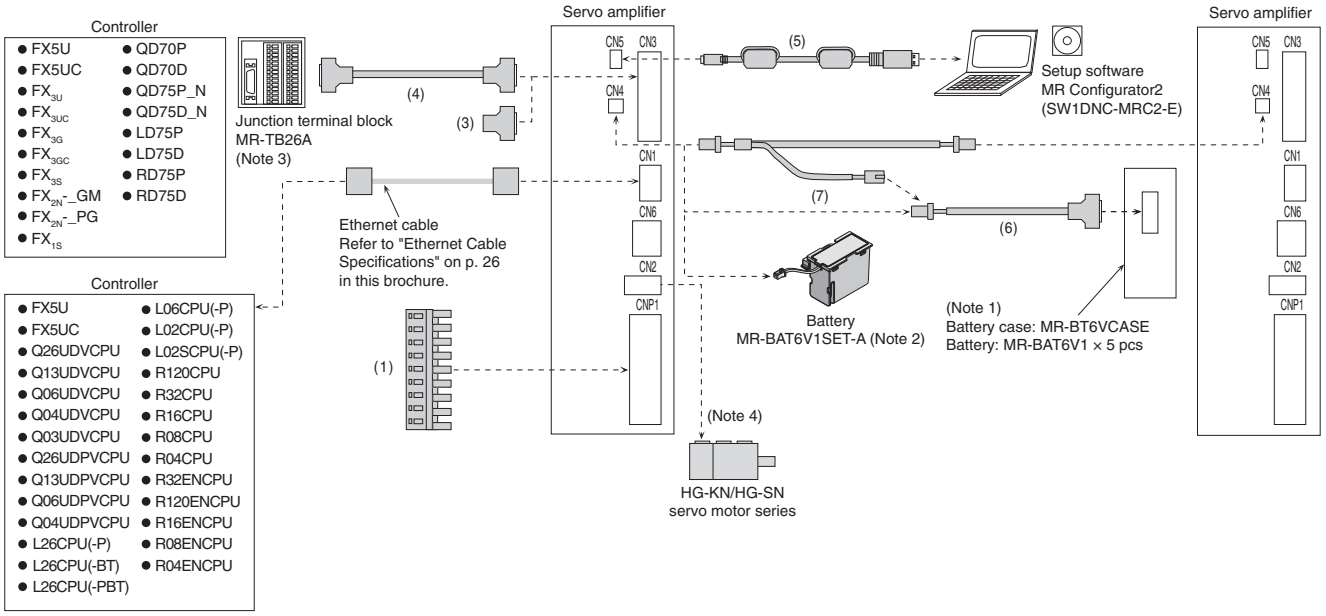
*8. Refer to the diagram below for shaft-through portion.



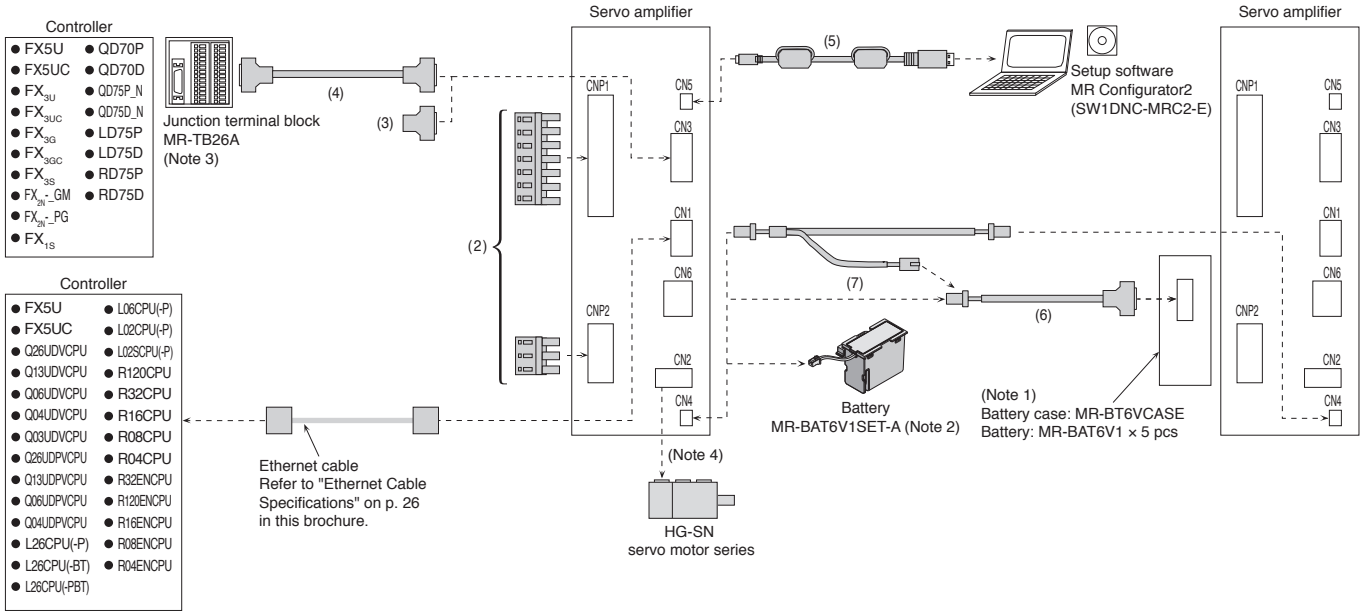
MEMO

Configuration Example for MR-JE-C

1 kW or smaller

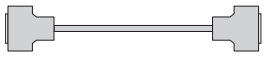
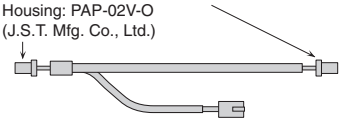


2 kW and 3 kW



Notes: 1. Refer to "Battery Case and Battery" in this brochure. MR-BT6VCASE and MR-BAT6V1 are not required when configuring incremental system with the MR-JE-C servo amplifier.
2. Refer to "Battery" in this brochure. MR-BAT6V1SET-A is not required when configuring incremental system with the MR-JE-C servo amplifier.
3. Refer to "Junction Terminal Block" in this brochure.
4. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for the encoder cable, the power cable, and the electromagnetic cable.

Cables and Connectors for MR-JE-C

		Item	Model	Cable length	IP rating	Application	Description
For CNP1	(1)	Servo amplifier CNP1 power connector (insertion type)	MR-JECNP1-01 (Standard accessory)	-	-	For MR-JE-100C or smaller	 CNP1 connector 09JFAT-SAXGDK-H5.0 Applicable wire size (Note 1): AWG 18 to 14 Insulator OD: 3.9 mm or smaller (J.S.T. Mfg. Co., Ltd.) Open tool J-FAT-OT (N) (J.S.T. Mfg. Co., Ltd.)
For CNP1/CNP2	(2)	Servo amplifier CNP1 power connector (insertion type)	MR-JECNP1-02 (Standard accessory)	-	-	For MR-JE-200C/ MR-JE-300C	 CNP1 connector 06(7-4)JFAT-SAXGFK-XL Applicable wire size (Note 1): AWG 16 to 10 Insulator OD: 4.7 mm or smaller (J.S.T. Mfg. Co., Ltd.)  Open tool J-FAT-OT-EXL (J.S.T. Mfg. Co., Ltd.)
		Servo amplifier CNP2 power connector (insertion type)	MR-JECNP2-02 (Standard accessory)	-	-		 CNP2 connector 03JFAT-SAXGFK-XL Applicable wire size (Note 1): AWG 16 to 10 Insulator OD: 4.7 mm or smaller (J.S.T. Mfg. Co., Ltd.)
For CN3	(3)	Connector set (Qty: 1 pc)	MR-J2CMP2	-	-	For MR-JE-C	 Servo amplifier connector Connector: 10126-3000PE Shell kit: 10326-52F0-008 (3M) or an equivalent product
		Connector set (Qty: 20 pcs)	MR-ECN1	-	-	For MR-JE-C	
	(4)	Junction terminal block cable	MR-TBNATBL05M	0.5 m	-	For connecting MR-JE-C and MR-TB26A	Junction terminal block connector Connector: 10126-6000EL Shell kit: 10326-3210-000 (3M) or an equivalent product Servo amplifier connector Connector: 10126-6000EL Shell kit: 10326-3210-000 (3M) or an equivalent product 
			MR-TBNATBL1M	1 m			
For CN5	(5)	Personal computer communication cable (USB cable)	MR-J3USBCBL3M	3 m	-	For MR-JE-C	Servo amplifier connector mini-B connector (5-pin) Personal computer connector A connector 
For CN4	(6)	Battery cable	MR-BT6V1CBL03M	0.3 m	-	For connecting MR-JE-C and MR-BT6VCASE	Servo amplifier connector Contact: SPHD-001G-P0.5 Housing: PAP-02V-O (J.S.T. Mfg. Co., Ltd.) Battery case connector (Note 2) Connector: 10114-3000PE Shell kit: 10314-52F0-008 (3M) or an equivalent product 
			MR-BT6V1CBL1M	1 m			
	(7)	Junction battery cable	MR-BT6V2CBL03M	0.3 m	-	For MR-JE-C	Servo amplifier connector Contact: SPHD-001G-P0.5 Housing: PAP-02V-O (J.S.T. Mfg. Co., Ltd.)  Junction connector Contact: SPAL-001GU-P0.5 Housing: PALR-02VF-O (J.S.T. Mfg. Co., Ltd.)
			MR-BT6V2CBL1M	1 m			

Notes: 1. The wire size shows wiring specification of the connector. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for examples of wire size selection.
2. This is for solder type. Press bonding type (connector: 10114-6000EL and shell kit: 10314-3210-000) (3M) is also usable. Contact the manufacturer directly.

Ethernet Cable Specifications (Note 1, 2)

Item		Description
Ethernet Cable		Category 5e or higher, (STP) straight cable
	Standard	The cable must meet the following: • IEEE802.3 (1000BASE-T) • ANSI/TIA/EIA-568-B (Category 5e)
	Connector	RJ-45 connector with shield

Notes: 1. Use the cable which meets the above specifications for Ethernet wiring.
2. Cables for CC-Link IE Controller Network cannot be used with CC-Link IE Field Network Basic.

Regenerative Option (Note 1)

Servo amplifier model	Permissible regenerative power [W] (Note 2)					
	Built-in regenerative resistor	Regenerative option				
		MR-RB032	MR-RB12	MR-RB30	MR-RB32	MR-RB50 (Note 3)
		40 Ω	40 Ω	13 Ω	40 Ω	13 Ω
MR-JE-10C	-	30	-	-	-	-
MR-JE-20C	-	30	100	-	-	-
MR-JE-40C	10	30	100	-	-	-
MR-JE-70C	20	30	100	-	300	-
MR-JE-100C	20	30	100	-	300	-
MR-JE-200C	100	-	-	300	-	500
MR-JE-300C	100	-	-	300	-	500

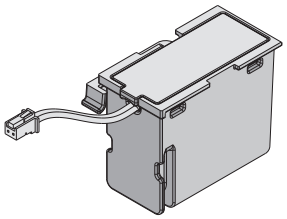
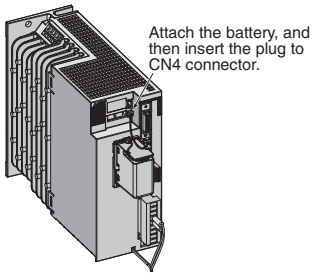
Notes: 1. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for dimensions and connections.
2. The power values in this table are resistor-generated powers, not rated powers.
3. Be sure to cool the unit forcibly with a cooling fan (92 mm × 92 mm, minimum air flow: 1.0 m^3/min). The cooling fan must be prepared by user.

* Cautions when connecting the regenerative option

1. The regenerative option causes a temperature rise of 100 °C or higher relative to the ambient temperature. Fully examine heat dissipation, installation position, wires used before installing the unit. Use flame-retardant wires or apply flame retardant on wires, and keep the wires clear of the unit.
2. Use twisted wires for connecting the regenerative option to the servo amplifier, and keep the wire length to a maximum of 5 m.
3. Use twisted wires for connecting a thermal sensor, and make sure that the sensor does not fail to work properly due to induction noise.

Battery (MR-BAT6V1SET-A) (Note 1)

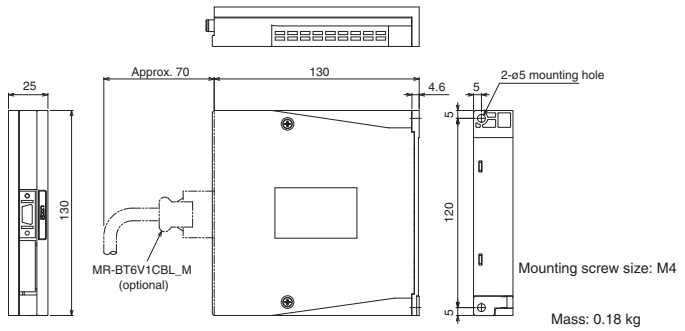
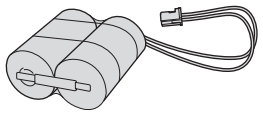
The absolute position data can be retained by mounting the battery on the servo amplifier. When the battery life runs out, please replace the built-in MR-BAT6V1 battery.
MR-BAT6V1SET-A is not required for the incremental system.

Appearance	Mounting method
 Model: MR-BAT6V1SET-A Nominal voltage: 6 V Nominal capacity: 1650 mAh Lithium content: 1.2 g Primary battery: 2CR17335A (CR17335A × 2 pcs. in series) Mass: 55 g	 Attach the battery, and then insert the plug to CN4 connector. * MR-J3BAT battery cannot be used because of the difference in voltage.

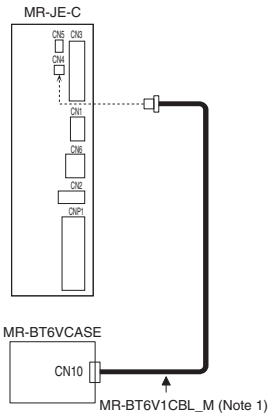
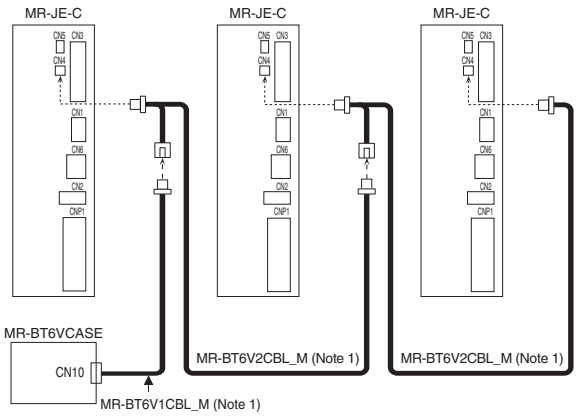
Notes: 1. MR-BAT6V1SET-A is an assembled battery composed of lithium metal batteries of CR17335A. This battery is not subject to the dangerous goods (Class 9) of the UN Recommendations. To transport lithium metal batteries and lithium metal batteries contained in equipment, take actions to comply with the following regulations: the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instruction (ICAO-TI) by the International Civil Aviation Organization (ICAO), and the International Maritime Dangerous Goods Code (IMDG Code) by the International Maritime Organization (IMO). To transport the batteries, check the latest standards or the laws of the destination country and take actions. Contact your local sales office for more details.

Battery Case (MR-BT6VCASE), Battery (MR-BAT6V1) (Note 1)

Absolute position data of up to eight axes of the servo motors can be retained by using the battery case and the batteries.
The case stores five batteries by connecting to the connectors. The batteries are not included in the battery case. Please purchase the batteries separately.

Dimensions (assembled) [Unit: mm]	MR-BAT6V1
 Mass: 0.18 kg	 Model: MR-BAT6V1 Nominal voltage: 6 V Nominal capacity: 1650 mAh Lithium content: 1.2 g Primary battery: 2CR17335A (CR17335A × 2 pcs. in series) Mass: 34 g

Notes: 1. MR-BAT6V1 is an assembled battery composed of lithium metal batteries of CR17335A. This battery is not subject to the dangerous goods (Class 9) of the UN Recommendations. To transport lithium metal batteries and lithium metal batteries contained in equipment, take actions to comply with the following regulations: the United Nations Recommendations on the Transport of Dangerous Goods, the Technical Instruction (ICAO-TI) by the International Civil Aviation Organization (ICAO), and the International Maritime Dangerous Goods Code (IMDG Code) by the International Maritime Organization (IMO). To transport the batteries, check the latest standards or the laws of the destination country and take actions. Contact your local sales office for more details.

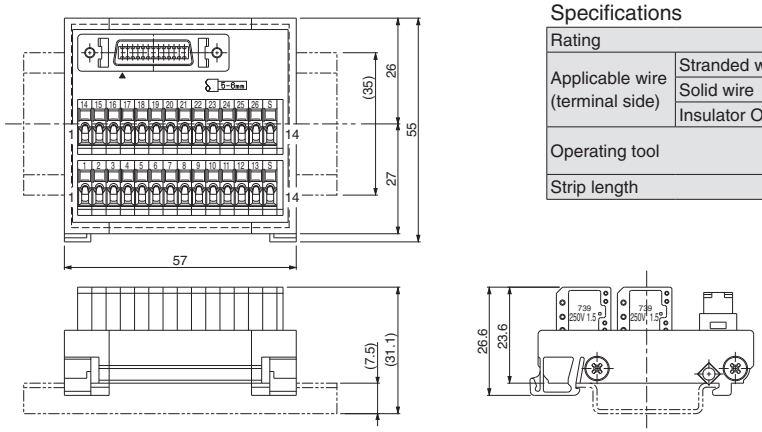
Connections	
For connecting to one unit of servo amplifier	For connecting up to eight servo amplifier axes
 	

Notes: 1. This is an optional cable. Refer to "Cables and connectors for MR-JE-C" in this brochure.

Junction Terminal Block (MR-TB26A)

Connect all signals via the junction terminal block.

Dimensions (Note 1) [Unit: mm]



Specifications

Rating		32 V AC/DC, 0.5A
Applicable wire (terminal side)	Stranded wire	0.08 mm^2 to 1.5 mm^2 (AWG 28 to 14)
	Solid wire	ø0.32 mm to 1.2 mm
	Insulator OD	3.4 mm or shorter
Operating tool		210-619 (WAGO) or an equivalent 210-119SB (WAGO) or an equivalent
Strip length		5 mm to 6 mm

Notes: 1. The lengths in brackets are applicable when the junction terminal block is mounted on a 35 mm wide DIN rail.

EMC Filter (Note 3)

The following filters are recommended as a filter compliant with the EMC directive for the power supply of the servo amplifier.

Servo amplifier model	EMC Filter model (Note 2)	Rated current [A]	Rated voltage [V AC]	Leakage current [mA]	Mass [kg]
MR-JE-10C to MR-JE-100C	HF3010A-UN (Note 1)	10	250	5	3.5
MR-JE-200C, MR-JE-300C	HF3030A-UN (Note 1)	30	250	5	5.5

Notes: 1. Manufactured by Soshin Electric Co., Ltd. A surge protector is separately required to use this EMC filter. Refer to "EMC Installation Guidelines."
2. When using the EMC filter, install one EMC filter for each servo amplifier.
3. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for dimensions and connections.

Power Factor Improving AC Reactor (FR-HAL) (Note 2)

This boosts the power factor of servo amplifier and reduces the power supply capacity.

Servo amplifier model	Power factor improving AC reactor model (Note 1)
MR-JE-10C, MR-JE-20C	FR-HAL-0.4K
MR-JE-40C	FR-HAL-0.75K
MR-JE-70C	FR-HAL-1.5K
MR-JE-100C (3-phase power supply input)	FR-HAL-2.2K
MR-JE-100C (1-phase power supply input)	FR-HAL-3.7K
MR-JE-200C (3-phase power supply input)	FR-HAL-3.7K
MR-JE-200C (1-phase power supply input)	FR-HAL-5.5K
MR-JE-300C	FR-HAL-5.5K

Notes: 1. When using the power factor improving AC reactor, install one reactor for each servo amplifier.
2. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for dimensions and connections.

Servo Support Software
MR Configurator2 (SW1DNC-MRC2-E)

MELSOFT

Specifications

Item	Description
Project	New/Open/Close/Save/Save As/Delete Project, System Setting, Print
Parameter	Parameter Setting
Monitor	Display All, I/O Monitor, Graph, ABS Data Display
Diagnosis	Alarm Display, Alarm Onset Data, Drive recorder, No Motor Rotation, System Configuration, Life Diagnosis, Machine Diagnosis
Test Operation	JOG Operation, Positioning Operation, Motor-Less Operation, DO Forced Output, Program Operation, Test Operation Information
Adjustment	One-touch Tuning, Tuning, Machine Analyzer
Others	Servo Assistant, Update Parameter Setting Range, Switch Display Language, Help

System requirements

Components		MR Configurator2 (Note 3, 4)	
Personal computer (Note 1)	OS (Note 2)	Microsoft® Windows® 10 Education Microsoft® Windows® 10 Enterprise Microsoft® Windows® 10 Pro Microsoft® Windows® 10 Home Microsoft® Windows® 8.1 Enterprise Microsoft® Windows® 8.1 Pro Microsoft® Windows® 8.1 Microsoft® Windows® 8 Enterprise Microsoft® Windows® 8 Pro Microsoft® Windows® 8	Microsoft® Windows® 7 Enterprise Microsoft® Windows® 7 Ultimate Microsoft® Windows® 7 Professional Microsoft® Windows® 7 Home Premium Microsoft® Windows® 7 Starter Microsoft® Windows Vista® Enterprise Microsoft® Windows Vista® Ultimate Microsoft® Windows Vista® Business Microsoft® Windows Vista® Home Premium Microsoft® Windows Vista® Home Basic Microsoft® Windows® XP Professional, Service Pack 3 Microsoft® Windows® XP Home Edition, Service Pack 3
	CPU (recommended)	Desktop PC: Intel® Celeron® processor 2.8 GHz or more Laptop PC: Intel® Pentium® M processor 1.7 GHz or more	
	Memory (recommended)	512 MB or more (32-bit OS), 1 GB or more (64-bit OS)	
	Free hard disk space	1 GB or more	
Browser		Windows® Internet Explorer® 4.0 or later	
Monitor		Resolution 1024 × 768 or more, 16-bit high color, Compatible with above personal computers.	
Keyboard		Compatible with above personal computers.	
Mouse		Compatible with above personal computers.	
Printer		Compatible with above personal computers.	
USB cable		MR-J3USBCBL3M	

Notes: 1. This software may not run correctly, depending on a personal computer being used.
2. For 64-bit operating system, this software is compatible with Windows® 7 or later.
3. Software version 1.63R or later is compatible with MR-JE-C.
4. Ethernet communication is supported by software version 1.68W or later.

Wires, Molded-Case Circuit Breakers and Magnetic Contactors

The following are examples of wire sizes when 600 V grade heat-resistant polyvinyl chloride insulated wires (HIV wires) are used.
The wire size for U, V, W, and ⏚ varies depending on the servo motor. Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for details on wires for each servo motor.

Servo amplifier model	Molded-case circuit breaker (Note 4, 5)	Magnetic contactor (Note 2, 5)	Wire size [mm^2] (Note 4)		
			L1, L2, L3, ⏚	P+, C	U, V, W, ⏚
MR-JE-10C	30 A frame 5 A (30 A frame 5 A)	S-T10	2 (AWG 14)	2 (AWG 14) (Note 1)	AWG 18 to 14 (Note 3)
MR-JE-20C	30 A frame 5 A (30 A frame 5 A)	S-T10			
MR-JE-40C	30 A frame 10 A (30 A frame 5 A)	S-T10			
MR-JE-70C	30 A frame 15 A (30 A frame 10 A)	S-T10			
MR-JE-100C (3-phase power supply input)	30 A frame 15 A (30 A frame 10 A)	S-T10			
MR-JE-100C (1-phase power supply input)	30 A frame 15 A (30 A frame 15 A)	S-T10			
MR-JE-200C (3-phase power supply input)	30 A frame 20 A (30 A frame 20 A)	S-T21			AWG 16 to 10 (Note 3)
MR-JE-200C (1-phase power supply input)	30 A frame 20 A (30 A frame 20 A)	S-T21	3.5 (AWG 12)		
MR-JE-300C	30 A frame 30 A (30 A frame 30 A)	S-T21	2 (AWG 14)		

Notes: 1. Keep the wire length to the regenerative option within 5 m.
2. Be sure to use a magnetic contactor with an operation delay time of 80 ms or less. The operation delay time is the time interval from current being applied to the coil until closure of contacts.
3. The wire size shows applicable size for the servo amplifier connector.
4. When complying with IEC/EN/UL/CSA standard, refer to "MELSERVO-JE Instructions and Cautions for Safe Use of AC Servos" enclosed with the servo amplifier. When using a power improving reactor, use a molded-case circuit breaker listed in the brackets.
5. Install one molded-case circuit breaker and one magnetic contactor for each servo amplifier.

Refer to "MELSERVO-JE catalog (L(NA)03086ENG)" for other options which are not described in this brochure.

Related Material

Related materials are listed below:

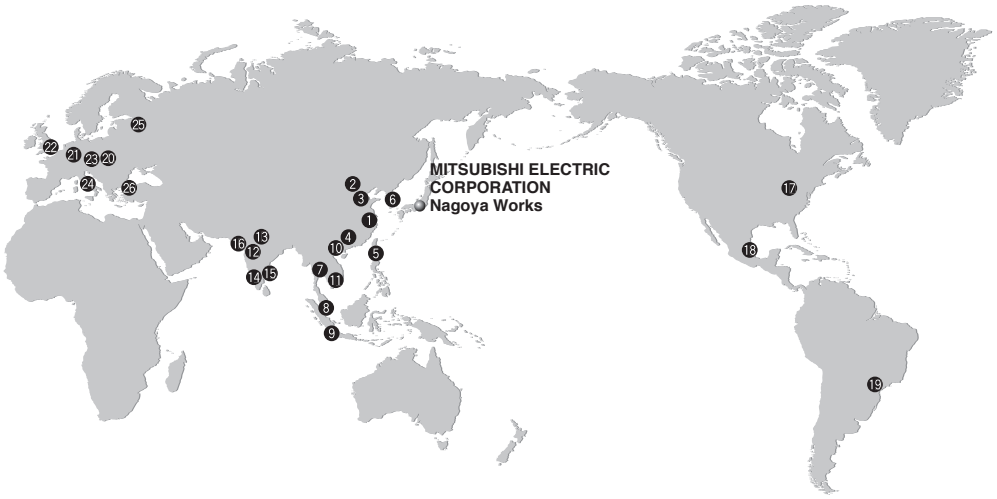
Catalog

Catalog name	Document No.
Servo Amplifiers & Motors MELSERVO-JE Catalog	L(NA)03086ENG

Manual (Instruction Manual)

Manual name	Manual No.
MR-JE-_C Servo Amplifier Instruction Manual	SH-030257ENG
MR-JE-_C Servo Amplifier Instruction Manual (Profile Mode)	SH-030254ENG
MR-JE-_C Servo Amplifier Instruction Manual (CC-Link IE Field Network Basic)	SH-030256ENG
MR-JE-_C Servo Amplifier Instruction Manual (Modbus/TCP)	SH-030269ENG
MELSERVO-JE Servo Amplifier Instruction Manual (Trouble Shooting)	SH-030166ENG
HG-KN HG-SN Servo Motor Instruction Manual	SH-030135ENG

Global FA centers



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EC97J1113 051

ISO 9001 BUREAU VERITAS Certification 008

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SV1703-2E-A 1708 〈IP〉

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