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MITSUBISHI ELECTRIC
Changes for the Better

General-Purpose AC Servo MELSERVO-J4 Series
Power Regeneration Converter Unit MR-CV_
SSCNET III/H Compatible Drive Unit MR-J4-DU_B_(-RJ)

January, 2017

New Product Release
SV1701-3E

MITSUBISHI SERVO AMPLIFIERS & MOTORS
MELSERVO J4

Energy-conservation with Power Regeneration System and Common DC Bus Connection

Product lines

- MR-CV_ Power Regeneration Converter Unit
  Capacity range: 11 kW to 55 kW in 200 V class
  11 kW to 75 kW in 400 V class
- MR-J4-DU_B_(-RJ) SSCNET III/H Compatible Drive Unit
  Capacity range: 9 kW to 37 kW in 200 V class
  9 kW to 55 kW in 400 V class
  Capacity of 9 kW to 22 kW is newly added in 200 V/400 V class.

Features

- Effective use of regenerative power with power regeneration system and common DC bus connection
- Space-saving and reduced wiring by configuring a multi-axis system with a combination of the power regeneration converter unit and drive units.

Energy-conservation with Power Regeneration System and Common DC Bus Connection

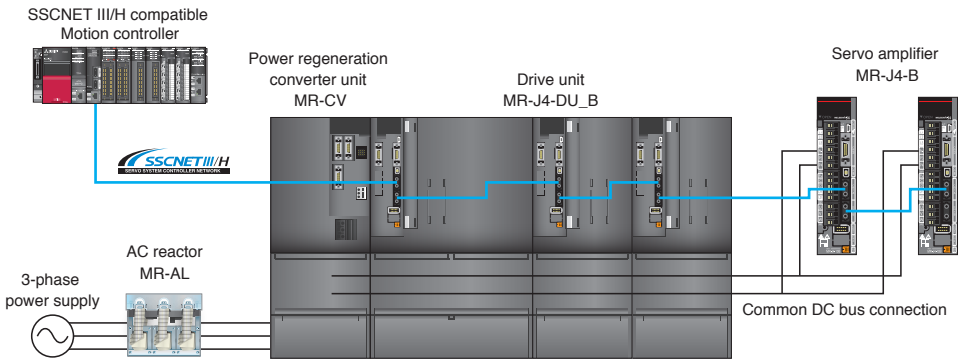
▶MR-CV Power Regeneration Converter Unit

The MR-CV power regeneration converter unit enables regenerative power to be returned back to the power supply and to be reused. When multiple servo amplifiers and drive units are connected to the MR-CV, the regenerative power can be used efficiently. In addition, use of a regenerative option is not required with the MR-CV, decreasing the total heat generation in a system and saving space.
The MR-CV power regeneration converter units are available in a capacity range of 11 kW to 55 kW in 200 V class and 11 kW to 75 kW in 400 V.

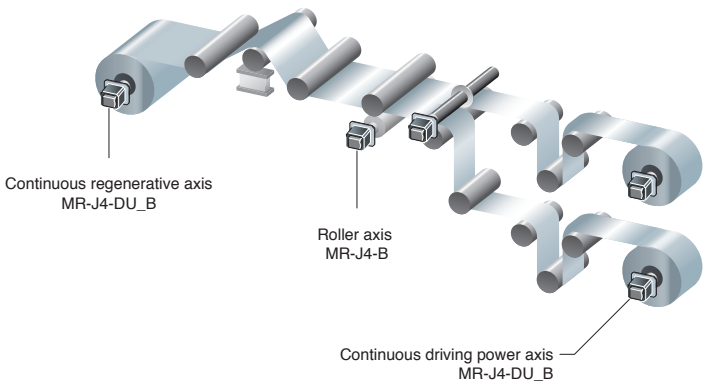
▶MR-J4-DU_B Drive Unit

As drive units supporting SSCNET III/H, MR-J4-DU_B is added to the product line in a capacity range of 9 kW to 22 kW in 200 V and 400 V classes. Thus, in this capacity range, the servo amplifier (converter integration type) and the drive unit (converter separation type) are selectable according to your system. The drive units enable energy-saving systems such as a multi-axis system.

▶System Configuration Examples

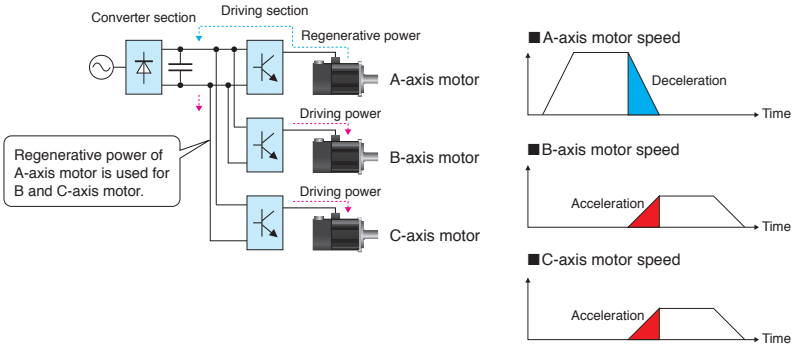


Application examples: injection molding machines, press machines, and film slitting machines



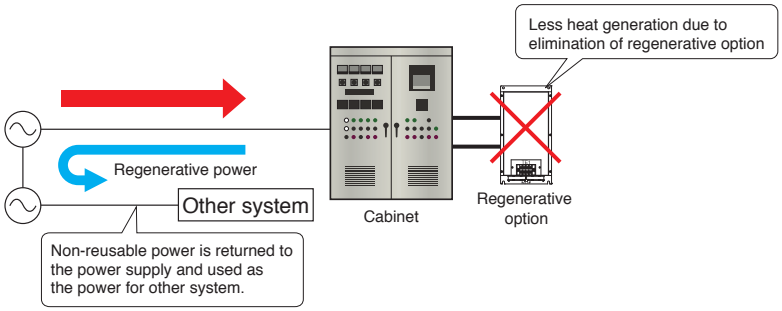
Energy-conservation with Common DC Bus Connection

When multiple servo amplifiers and drive units are connected to the MR-CV power regeneration converter unit by a common DC bus connection, the regenerative power of one axis is used for driving other axes, contributing to energy-conservation.



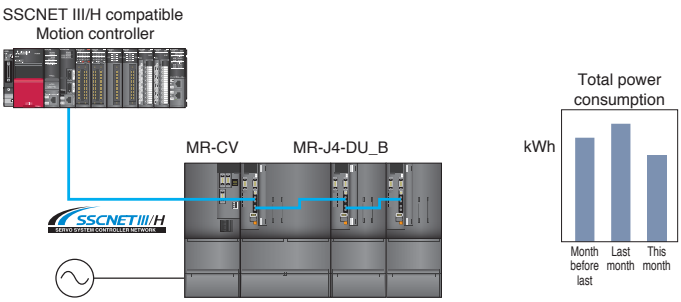
Further Energy-conservation with Power Regeneration System

The MR-CV power regeneration converter unit has a power regeneration system which returns the regenerative power back to the power supply, enabling the regenerative power to be used for other systems for further energy-conservation.
In addition, when the MR-CV power regeneration converter unit is used, a regenerative option is not required, and thus, the total heat generation in a system will be decreased.



Managing System Power Consumption by Controller

Power consumption and total power consumption of the power regeneration converter unit, drive unit, and servo amplifier can be checked easily with a controller.

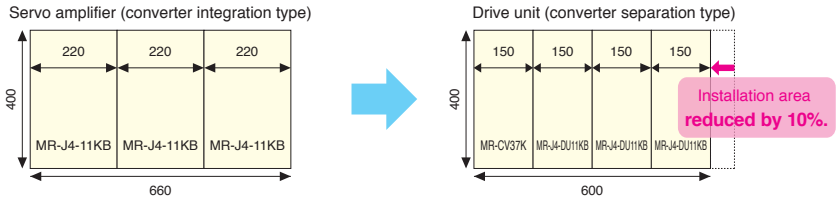


Space-saving and Reduced Wiring

With the drive units sharing a common converter section by using the power regeneration converter unit, less installation space is required. For example, in comparison of installing three units of 11 kW rating servo amplifiers and drive units, a combination of the power regeneration converter unit and three drive units requires 10% less installation space* than three servo amplifiers. Moreover, the drive units use a common power supply, reducing the number of molded-case circuit breakers, magnetic contactors, and wiring.

*AC reactor (MR-AL) is not included.

Configuration example of installation of three units of 11 kW



[Unit: mm]

Compliance with Global Standards and Regulations

MELSERVO-J4 series complies with global standards.

Servo amplifier

European EC directive	Low voltage directive	EN 61800-5-1
	EMC directive	EN61800-3 Category C3
	Machinery directive	EN ISO 13849-1 Category 3 PL e/ EN 62061 SIL CL 3 / EN 61800-5-2
	RoHS directive	Compliant
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
China Compulsory Certification		N/A
Korea Radio Wave Law (KC)		Compliant
Certification system of the Eurasian Economic Union (EAC)		Compliant

Model Designation for Drive Unit

MR-J4-DU900B__-__

Mitsubishi Electric general-purpose AC servo amplifier MELSERVO-J4 Series

Symbol	Power supply
None	3-phase 200 V AC
4	3-phase 400 V AC

Symbol	Interface
B	SSCNET III/H

Symbol	Rated output [kW]
900	9
11K	11
15K	15
22K	22
30K	30 (Note 3)
37K	37 (Note 3)
45K	45 (Note 3, 4)
55K	55 (Note 3, 4)

Symbol	Special specification
None	Standard
RJ	Fully closed loop control four-wire type/ load-side encoder A/B/Z-phase input compatible/ Functional safety unit compatible (Note 1)
EB	MR-J4-DU_B_ with a special coating specification (3C2) (Note 2)
KS	MR-J4-DU_B_-RJ with a special coating specification (3C2) (Note 2)

Notes: 1. When using MR-D30 functional safety unit, use MR-J4-DU_B_-RJ drive unit with software version B5 or later.
2. The special coating (JIS C60721-3-3/IEC 60721-3-3 classification 3C2) is applied to the circuit board of the drive unit. This type is available in the drive unit of 30 kW or larger. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for details.
3. The drive unit of 30 kW or larger had been released prior to 22 kW or smaller. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for details.
4. Available only with the drive unit of 400 V.

Model Designation for Power Regeneration Converter Unit (Note 1)

MR-CV11K__

Symbol	Power supply
None	3-phase 200 V AC
4	3-phase 400 V AC

Symbol	Capacity [kW]
11K	11
18K	18
30K	30
37K	37
45K	45
55K	55
75K	75 (Note 2)

Notes: 1. The power regeneration converter unit is supported only by MR-J4-DU_B(4)(-RJ) drive unit. It is not supported by MR-J4-DU_A(4)(-RJ) drive unit. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the combination with the servo amplifiers.
2. Available only with the power regeneration converter unit of 400 V.

Combinations of Drive Unit and Servo Motor (Note 1)

MR-J4-DU_B/MR-J4-DU_B-RJ (200 V)

Drive unit	Rotary Servo Motor	Linear servo motor (primary side)
MR-J4-DU900B(-RJ)	HG-SR702 HG-JR503 (Note 2), 703, 903, 601, 801, 701M	LM-FP2F-18M-1SS0 LM-FP4D-24M-1SS0
MR-J4-DU11KB(-RJ)	HG-JR12K1, 11K1M	LM-FP4F-36M-1SS0
MR-J4-DU15KB(-RJ)	HG-JR15K1, 15K1M	LM-FP4H-48M-1SS0
MR-J4-DU22KB(-RJ)	HG-JR20K1, 25K1, 22K1M	-
MR-J4-DU30KB(-RJ)	HG-JR30K1, 30K1M	-
MR-J4-DU37KB(-RJ)	HG-JR37K1, 37K1M	-

MR-J4-DU_B4/MR-J4-DU_B4-RJ (400 V)

Drive unit	Rotary Servo Motor	Linear servo motor (primary side)
MR-J4-DU900B4(-RJ)	HG-SR7024 HG-JR5034 (Note 2), 7034, 9034, 6014, 8014, 701M4	-
MR-J4-DU11KB4(-RJ)	HG-JR12K14, 11K1M4	-
MR-J4-DU15KB4(-RJ)	HG-JR15K14, 15K1M4	-
MR-J4-DU22KB4(-RJ)	HG-JR20K14, 25K14, 22K1M4	LM-FP5H-60M-1SS0
MR-J4-DU30KB4(-RJ)	HG-JR30K14, 30K1M4	-
MR-J4-DU37KB4(-RJ)	HG-JR37K14, 37K1M4	-
MR-J4-DU45KB4(-RJ)	HG-JR45K1M4	-
MR-J4-DU55KB4(-RJ)	HG-JR55K1M4	-

Notes: 1. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the torque characteristics.
2. The maximum torque can be increased from 300% to 400% of the rated torque with this combination.

Selection of Power Regeneration Converter Unit, Drive Unit, and Servo Amplifier

Select a power regeneration converter unit which meets the following conditions. When all the conditions are fulfilled, multiple drive units can be connected to one power regeneration converter unit. When connecting the multiple drive units, install the drive units in descending order of capacity, from the right side of the power regeneration converter unit. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for details of the selection.

(1) Maximum capacity [kW] of MR-J4-DU_ connected to MR-CV_ ≤ Maximum capacity [kW] of MR-J4-DU_ drivable with MR-CV_
(2) Effective value of total output power of servo motors ≤ Continuous rating [kW] of MR-CV_
(3) Maximum value [kW] of total output power of servo motors × 1.2 ≤ Instantaneous maximum rating [kW] of MR-CV_
(4) Total widths of MR-J4-DU_ ≤ 800 mm

		MR-CV_ (200 V)						MR-CV_ (400 V)						
		11K	18K	30K	37K	45K	55K	11K4	18K4	30K4	37K4	45K4	55K4	75K4
Maximum capacity of MR-J4-DU_ drivable with MR-CV_	[kW]	11	15	30	37	37	37	11	15	30	37	45	55	55
Continuous rating	[kW]	7.5	11	20	22	22	37	7.5	11	20	25	25	55	55
Instantaneous maximum rating	[kW]	39	60	92	101	125	175	39	60	92	101	125	175	180
Total widths of MR-J4-DU_		800 mm or shorter												

	MR-J4-DU_ (200 V)						MR-J4-DU_ (400 V)							
	900B	11KB	15KB	22KB	30KB	37KB	900B4	11KB4	15KB4	22KB4	30KB4	37KB4	45KB4	55KB4
Unit width [mm]	150		240		300		150		240				300	

When one drive unit is connected to one power regeneration converter unit, the drive unit is driven at the rated output with the following combinations.

Power regeneration converter unit	Drive unit
MR-CV18K	MR-J4-DU900B(-RJ), MR-J4-DU11KB(-RJ)
MR-CV30K	MR-J4-DU15KB(-RJ)
MR-CV37K	MR-J4-DU22KB(-RJ)
MR-CV55K	MR-J4-DU30KB(-RJ), MR-J4-DU37KB(-RJ)
MR-CV18K4	MR-J4-DU900B4(-RJ), MR-J4-DU11KB4(-RJ)
MR-CV30K4	MR-J4-DU15KB4(-RJ)
MR-CV37K4	MR-J4-DU22KB4(-RJ)
MR-CV55K4	MR-J4-DU30KB4(-RJ), MR-J4-DU37KB4(-RJ), MR-J4-DU45KB4(-RJ), MR-J4-DU55KB4(-RJ)

Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the combinations of MR-CV_ and MR-J4-_B_(-RJ).

MR-J4-DU_B/MR-J4-DU_B-RJ (SSCNET III/H Interface) Specifications (200 V) (Note 7)

Drive unit model MR-J4-_(-RJ)			DU900B	DU11KB	DU15KB	DU22KB
Compatible power regeneration converter unit model			MR-CV_			
Output	Rated voltage		3-phase 170 V AC			
	Rated current	[A]	54	68	87	126
Main circuit power supply input			Main circuit power is supplied from the power regeneration converter unit to the drive unit.			
Control circuit power supply input	Voltage/frequency		1-phase 200 V AC to 240 V AC, 50 Hz/60 Hz			
	Rated current	[A]	0.3			
	Permissible voltage fluctuation		1-phase 170 V AC to 264 V AC			
	Permissible frequency fluctuation		±5% maximum			
	Power consumption	[W]	45			
Interface power supply			24 V DC ± 10% (required current capacity: 0.3 A (including CN8 connector signals))			
Control method			Sine-wave PWM control/current control method			
Dynamic Brake (Note 8)			External option (Note 4)			
SSCNET III/H command communication cycle (Note 3)			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			
Fully closed loop control	MR-J4-DU_B		Two-wire type communication method			
	MR-J4-DU_B-RJ		Two-wire/four-wire type communication method			
Load-side encoder interface	MR-J4-DU_B		Mitsubishi Electric high-speed serial communication			
	MR-J4-DU_B-RJ		Mitsubishi Electric high-speed serial communication, A/B/Z-phase differential input signal			
Servo functions			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, scale measurement function, J3 compatibility mode, super trace control, lost motion compensation			
Protective functions			Overcurrent shut-off, overload shut-off (electronic thermal), servo motor overheat protection, encoder error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection			
Functional safety			STO (IEC/EN 61800-5-2)			
Safety performance	Standards certified by CB (Note 6)		EN ISO 13849-1 Category 3 PL e, IEC 61508 SIL 3, EN 62061 SIL CL 3, EN 61800-5-2			
	Response performance		8 ms or less (STO input OFF → energy shut-off)			
	Test pulse input (STO) (Note 2)		Test pulse interval: 1 Hz to 25 Hz, test pulse off time: 1 ms maximum			
	Mean time to dangerous failure (MTTFd)		MTTFd ≥ 100 [years] (314a)			
	Diagnostic coverage (DC)		DC = Medium, 97.6 [%]			
	Probability of dangerous Failure per Hour (PFH)		PFH = 6.4×10^{-9} [1/h]			
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 4 in this brochure.			
Structure (IP rating)			Force cooling, open (IP20) (Note 1)			
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 5)			
	Vibration resistance		5.9 m/s^2 at 10 Hz to 55 Hz (directions of X, Y and Z axes)			
Mass		[kg]	9.9	9.9	15.2	15.2

Notes: 1. Terminal blocks are excluded.
2. The test pulse is a signal for the external circuit to perform self-diagnosis by turning off the signals to the drive unit instantaneously at regular intervals.
3. The command communication cycle depends on the servo system controller specifications and the number of axes connected.
4. Use an optional external dynamic brake with the drive unit. Without the external dynamic brake, a servo motor does not stop immediately at emergency stop and falls in free-run status, causing an accident such as machine collision, etc. Take measures to ensure safety on the entire system when not using the dynamic brake.
5. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the restrictions when using the drive units at altitude exceeding 1000 m and up to 2000 m above sea level.
6. The safety level depends on the setting value of [Pr. PF18 STO diagnosis error detection time] and whether or not STO input diagnosis is performed by TOFB output. Refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual" for details.
7. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for specifications of MR-J4-DU30KB(-RJ) and MR-J4-DU37KB(-RJ).
8. When using the dynamic brake, refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the permissible load to motor inertia ratio and the permissible load to mass ratio.

MR-J4-DU_B4/MR-J4-DU_B4-RJ (SSCNET III/H Interface) Specifications (400 V) (Note 7)

Drive unit model MR-J4-_(-RJ)			DU900B4	DU11KB4	DU15KB4	DU22KB4
Compatible power regeneration converter unit model			MR-CV_4			
Output	Rated voltage		3-phase 323 V AC			
	Rated current	[A]	25	32	41	63
Main circuit power supply input			Main circuit power is supplied from the power regeneration converter unit to the drive unit.			
Control circuit power supply input	Voltage/frequency		1-phase 380 V AC to 480 V AC, 50 Hz/60 Hz			
	Rated current	[A]	0.2			
	Permissible voltage fluctuation		1-phase 323 V AC to 528 V AC			
	Permissible frequency fluctuation		±5% maximum			
	Power consumption	[W]	45			
Interface power supply			24 V DC ± 10% (required current capacity: 0.3 A (including CN8 connector signals))			
Control method			Sine-wave PWM control/current control method			
Dynamic Brake (Note 8)			External option (Note 4)			
SSCNET III/H command communication cycle (Note 3)			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			
Fully closed loop control	MR-J4-DU_B4		Two-wire type communication method			
	MR-J4-DU_B4-RJ		Two-wire/four-wire type communication method			
Load-side encoder interface	MR-J4-DU_B4		Mitsubishi Electric high-speed serial communication			
	MR-J4-DU_B4-RJ		Mitsubishi Electric high-speed serial communication, A/B/Z-phase differential input signal			
Servo functions			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, scale measurement function, J3 compatibility mode, super trace control, lost motion compensation			
Protective functions			Overcurrent shut-off, overload shut-off (electronic thermal), servo motor overheat protection, encoder error protection, undervoltage protection, instantaneous power failure protection, overspeed protection, error excessive protection, magnetic pole detection protection, linear servo control fault protection			
Functional safety			STO (IEC/EN 61800-5-2)			
Safety performance	Standards certified by CB (Note 6)		EN ISO 13849-1 Category 3 PL e, IEC 61508 SIL 3, EN 62061 SIL CL 3, EN 61800-5-2			
	Response performance		8 ms or less (STO input OFF → energy shut-off)			
	Test pulse input (STO) (Note 2)		Test pulse interval: 1 Hz to 25 Hz, test pulse off time: 1 ms maximum			
	Mean time to dangerous failure (MTTFd)		MTTFd ≥ 100 [years] (314a)			
	Diagnostic coverage (DC)		DC = Medium, 97.6 [%]			
	Probability of dangerous Failure per Hour (PFH)		PFH = 6.4×10^{-9} [1/h]			
Compliance with global standards			Refer to "Compliance with Global Standards and Regulations" on p. 4 in this brochure.			
Structure (IP rating)			Force cooling, open (IP20) (Note 1)			
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 5)			
	Vibration resistance		5.9 m/s^2 at 10 Hz to 55 Hz (directions of X, Y and Z axes)			
Mass		[kg]	9.9	9.9	15.2	15.2

Notes: 1. Terminal blocks are excluded.
2. The test pulse is a signal for the external circuit to perform self-diagnosis by turning off the signals to the drive unit instantaneously at regular intervals.
3. The command communication cycle depends on the servo system controller specifications and the number of axes connected.
4. Use an optional external dynamic brake with the drive unit. Without the external dynamic brake, a servo motor does not stop immediately at emergency stop and falls in free-run status, causing an accident such as machine collision, etc. Take measures to ensure safety on the entire system when not using the dynamic brake.
5. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the restrictions when using the drive units at altitude exceeding 1000 m and up to 2000 m above sea level.
6. The safety level depends on the setting value of [Pr. PF18 STO diagnosis error detection time] and whether or not STO input diagnosis is performed by TOFB output. Refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual" for details.
7. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for specifications of MR-J4-DU30KB4(-RJ), MR-J4-DU37KB4(-RJ), MR-J4-DU45KB4(-RJ), and MR-J4-DU55KB4(-RJ).
8. When using the dynamic brake, refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the permissible load to motor inertia ratio and the permissible load to mass ratio.

MR-CV Power Regeneration Converter Unit Specifications (200 V)

Power regeneration converter unit model MR-CV_		11K	18K	30K	37K	45K	55K
Output	Rated voltage	270 V DC to 324 V DC					
	Rated current [A]	41	76	144	164	198	238
Main circuit power supply input	Voltage/frequency (Note 1)	3-phase 200 V AC to 240 V AC, 50 Hz/60 Hz					
	Rated current [A]	35	65	107	121	148	200
	Permissible voltage fluctuation	3-phase 170 V AC to 264 V AC					
	Permissible frequency fluctuation	±3% maximum					
Control circuit power supply input	Voltage/frequency	1-phase 200 V AC to 240 V AC, 50 Hz/60 Hz					
	Rated current [A]	0.2					
	Permissible voltage fluctuation	1-phase 170 V AC to 264 V AC					
	Permissible frequency fluctuation	±3% maximum					
	Power consumption [W]	30					
Interface power supply		24 V DC ± 10% (required current capacity: 0.35 A)					
Capacity [kW]		11	18	30	37	45	55
Protective functions		Undervoltage protection, regenerative error protection, regenerative overvoltage shut-off, MC drive circuit error protection, open-phase detection, inrush current suppression circuit error protection, main circuit device overheat error protection, cooling fan error protection, overload shut-off (electronic thermal)					
Continuous rating [kW]		7.5	11	20	22	22	37
Instantaneous maximum rating [kW]		39	60	92	101	125	175
Compliance with global standards		Refer to "Compliance with Global Standards and Regulations" on p. 4 in this brochure.					
Structure (IP rating)		Force cooling, open (IP20) (Note 2)					
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 3)					
	Vibration resistance	5.9 m/s^2 at 10 Hz to 55 Hz (directions of X, Y and Z axes)					
Mass [kg]		6.1	6.1	12.1	12.1	12.1	25.0

Notes: 1. Rated output and speed of a rotary servo motor, and continuous thrust and maximum speed of a linear servo motor are applicable when the power regeneration converter unit is operated within the specified power supply voltage and frequency.
2. Terminal blocks are excluded.
3. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the restrictions when using the power regeneration converter units at altitude exceeding 1000 m and up to 2000 m above sea level.

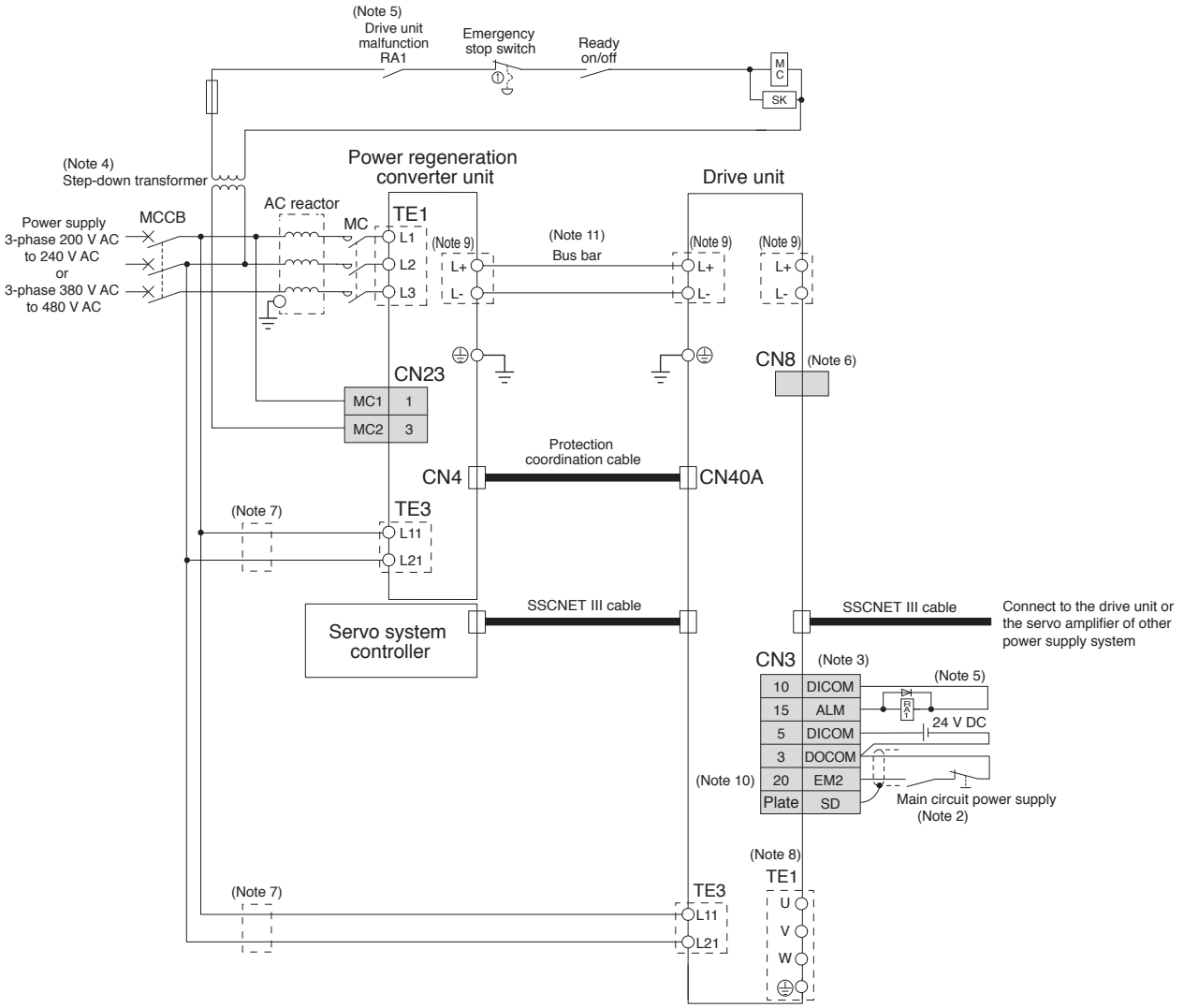
MR-CV Power Regeneration Converter Unit Specifications (400 V)

Power regeneration converter unit model MR-CV_		11K4	18K4	30K4	37K4	45K4	55K4	75K4
Output	Rated voltage	513 V DC to 648 V DC						
	Rated current [A]	21	38	72	82	99	119	150
Main circuit power supply input	Voltage/frequency (Note 1)	3-phase 380 V AC to 480 V AC, 50 Hz/60 Hz						
	Rated current [A]	18	35	61	70	85	106	130
	Permissible voltage fluctuation	3-phase 323 V AC to 528 V AC						
	Permissible frequency fluctuation	±3% maximum						
Control circuit power supply input	Voltage/frequency	1-phase 380 V AC to 480 V AC, 50 Hz/60 Hz						
	Rated current [A]	0.1						
	Permissible voltage fluctuation	1-phase 323 V AC to 528 V AC						
	Permissible frequency fluctuation	±3% maximum						
	Power consumption [W]	30						
Interface power supply		24 V DC ± 10% (required current capacity: 0.35 A)						
Capacity [kW]		11	18	30	37	45	55	75
Protective functions		Undervoltage protection, regenerative error protection, regenerative overvoltage shut-off, MC drive circuit error protection, open-phase detection, inrush current suppression circuit error protection, main circuit device overheat error protection, cooling fan error protection, overload shut-off (electronic thermal)						
Continuous rating [kW]		7.5	11	20	25	25	55	55
Instantaneous maximum rating [kW]		39	60	92	101	125	175	180
Compliance with global standards		Refer to "Compliance with Global Standards and Regulations" on p. 4 in this brochure.						
Structure (IP rating)		Force cooling, open (IP20) (Note 2)						
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 3)						
	Vibration resistance	5.9 m/s^2 at 10 Hz to 55 Hz (directions of X, Y and Z axes)						
Mass [kg]		6.1	6.1	12.1	12.1	12.1	25.0	25.0

Notes: 1. Rated output and speed of a rotary servo motor, and continuous thrust and maximum speed of a linear servo motor are applicable when the power regeneration converter unit is operated within the specified power supply voltage and frequency.
2. Terminal blocks are excluded.
3. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for the restrictions when using the power regeneration converter units at altitude exceeding 1000 m and up to 2000 m above sea level.

MR-J4-DU_B/MR-J4-DU_B-RJ Standard Wiring Diagram Example (Note 1)

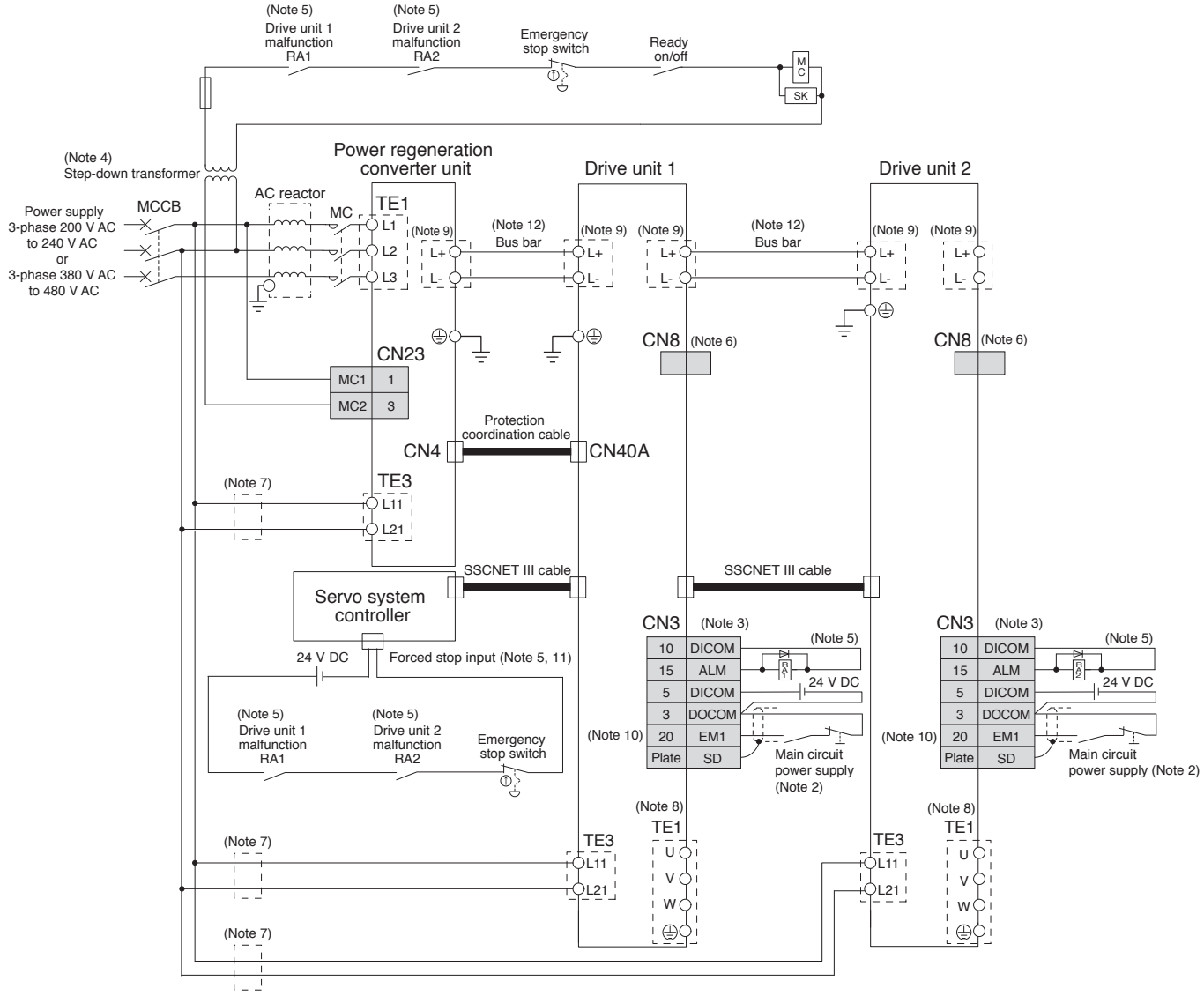
For one-axis connection



Notes: 1. To control main circuit power supply on/off by DC power supply, refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual" for details.
2. To prevent an unexpected restart of the drive unit, create a circuit to turn off EM2 (Forced stop 2) when the main circuit power is turned off.
3. This is for sink wiring. Source wiring is also possible.
4. A step-down transformer is required if the power regeneration converter unit is in 400 V class, and coil voltage of the magnetic contactor is in 200 V class.
5. Create a sequence that shuts off the main circuit power when an alarm occurs.
6. Be sure to attach a short-circuit connector supplied with the drive unit when the STO function is not used. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the connection of CN8 connector.
7. Install an overcurrent protection device (molded-case circuit breaker, fuse, etc.) to protect the branch circuit.
8. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the connection with the servo motor.
9. Terminal varies depending on the capacity of the power regeneration converter unit and the drive unit. Refer to the dimensions of the relevant unit in "MELSERVO-J4 catalog (L(NA)03058)" or this brochure.
10. To stop the servo motors by forcibly decelerating with EM2, parameter setting is required. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for details.
11. The bus bar varies depending on the combination of the power regeneration converter unit and the drive unit. Refer to "Bus Bar (for 200 V)" and "Bus Bar (for 400 V)" on pp. 19 and 20 in this brochure for details.

MR-J4-DU_B/MR-J4-DU_B-RJ Standard Wiring Diagram Example (Note 1)

For multi-axis connection

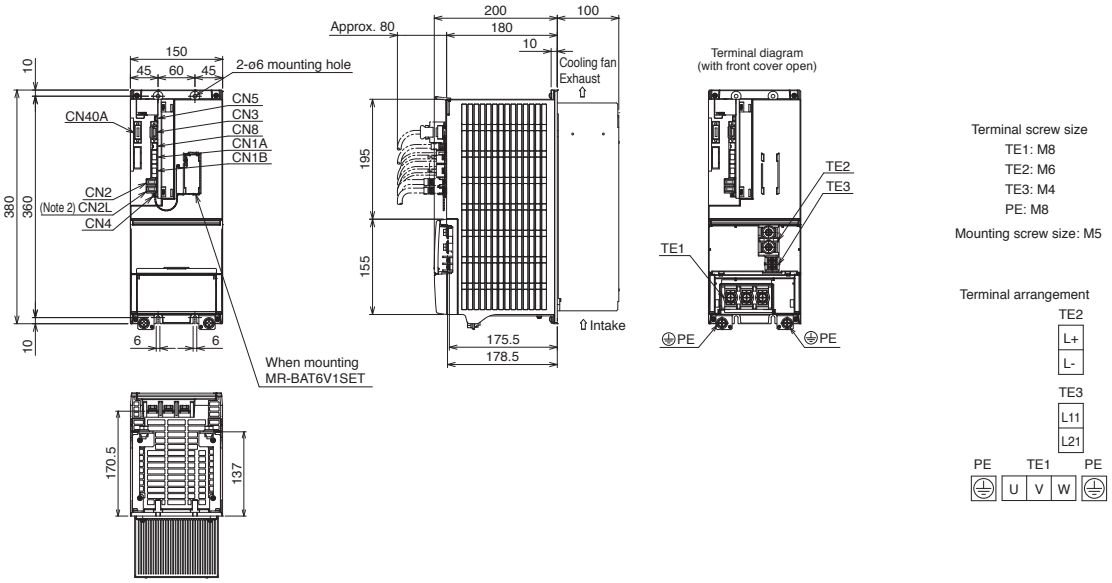


Notes: 1. To control main circuit power supply on/off by DC power supply, refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual" for details.
2. To prevent an unexpected restart of the drive unit, create a circuit to turn off EM1 (Forced stop 1) when the main circuit power is turned off.
3. This is for sink wiring. Source wiring is also possible.
4. A step-down transformer is required if the power regeneration converter unit is in 400 V class, and coil voltage of the magnetic contactor is in 200 V class.
5. When connecting multiple drive units, create a sequence in which the servo system controller stops all axes and a sequence that shuts off the main circuit power if an alarm occurs on one axis.
6. Be sure to attach a short-circuit connector supplied with the drive unit when the STO function is not used. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the connection of CN8 connector.
7. Install an overcurrent protection device (molded-case circuit breaker, fuse, etc.) to protect the branch circuit.
8. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the connection with the servo motor.
9. Terminal varies depending on the capacity of the power regeneration converter unit and the drive unit. Refer to the dimensions of the relevant unit in "MELSERVO-J4 catalog (L(NA)03058)" or this brochure.
10. To stop the servo motors of all axes forcibly with EM1, parameter setting is required. Refer to "MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual" for details.
11. Refer to the controller instruction manuals for the forced stop input of the servo system controller.
12. The bus bar varies depending on the combination of the power regeneration converter unit and the drive unit. Refer to "Bus Bar (for 200 V)" and "Bus Bar (for 400 V)" on pp. 19 and 20 in this brochure for details.

MR-J4-DU_B/MR-J4-DU_B-RJ Dimensions (Note 1)

●MR-J4-DU900B, MR-J4-DU900B-RJ, MR-J4-DU900B4, MR-J4-DU900B4-RJ

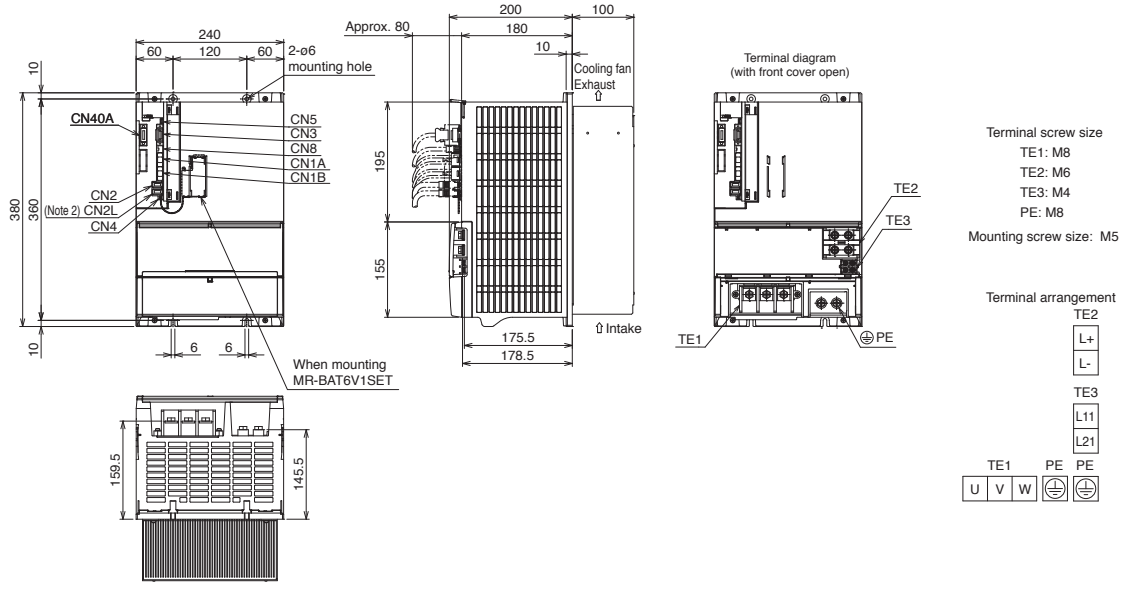
●MR-J4-DU11KB, MR-J4-DU11KB-RJ, MR-J4-DU11KB4, MR-J4-DU11KB4-RJ



[Unit: mm]

●MR-J4-DU15KB, MR-J4-DU15KB-RJ, MR-J4-DU15KB4, MR-J4-DU15KB4-RJ

●MR-J4-DU22KB, MR-J4-DU22KB-RJ, MR-J4-DU22KB4, MR-J4-DU22KB4-RJ



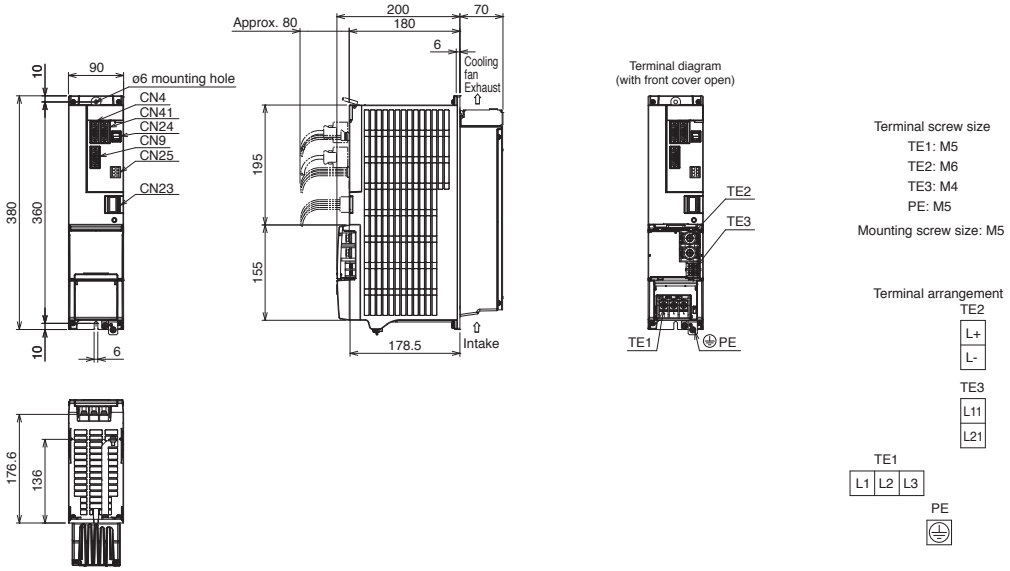
[Unit: mm]

Notes: 1. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the dimensions of the drive unit of 30 kW or larger.
2. CN2L, CN7, and CN9 connectors are not available for MR-J4-DU_B_ drive unit.

MR-CV_ Power Regeneration Converter Unit Dimensions

●MR-CV11K, MR-CV11K4

●MR-CV18K, MR-CV18K4

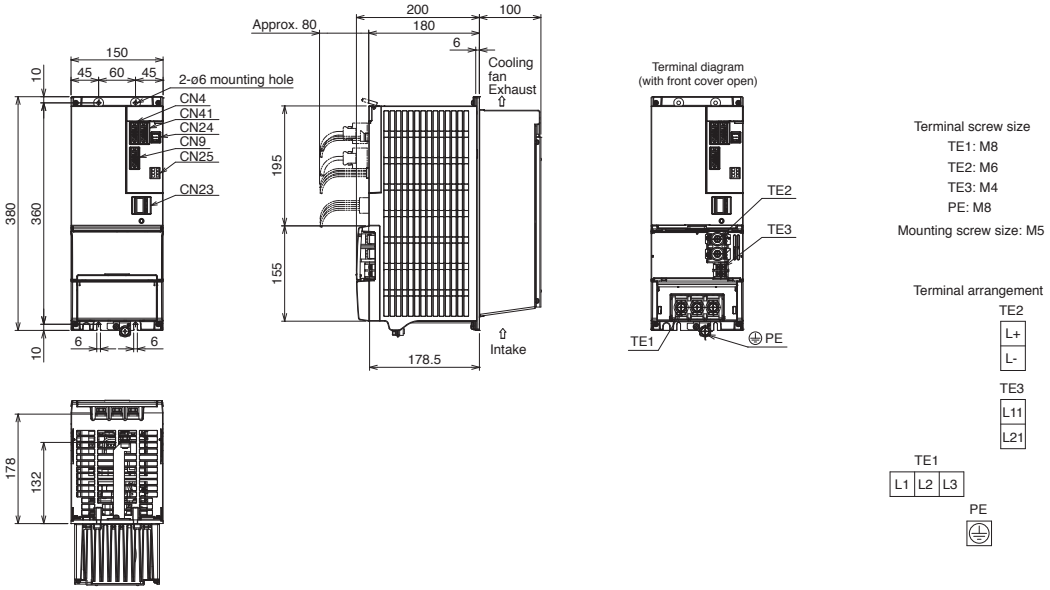


[Unit: mm]

●MR-CV30K, MR-CV30K4

●MR-CV37K, MR-CV37K4

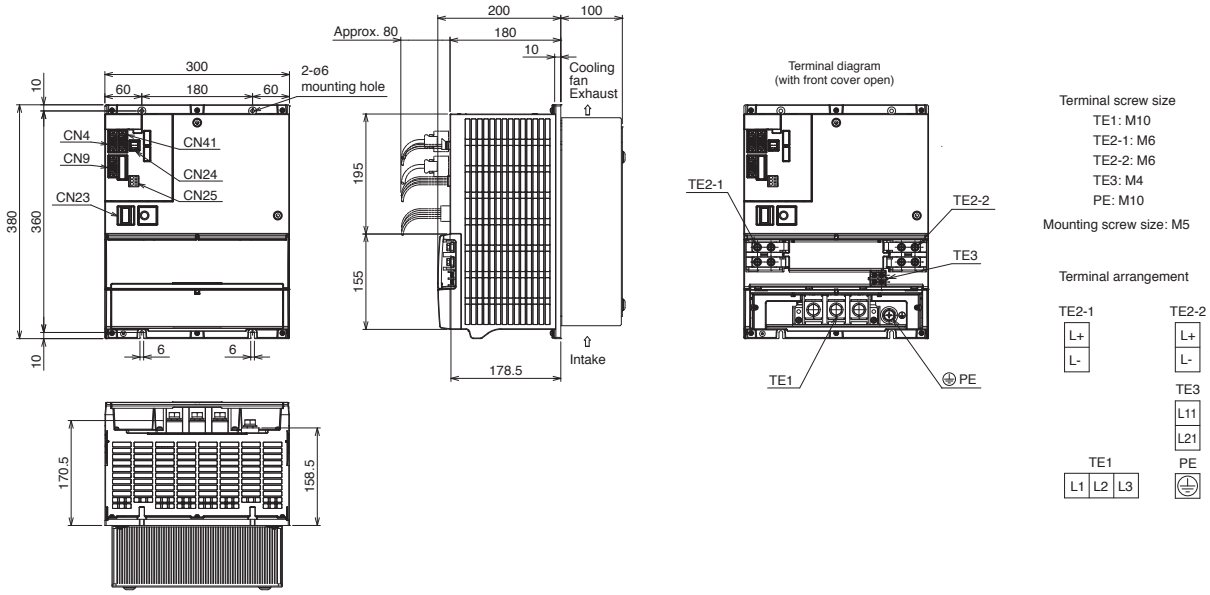
●MR-CV45K, MR-CV45K4



[Unit: mm]

MR-CV_ Power Regeneration Converter Unit Dimensions

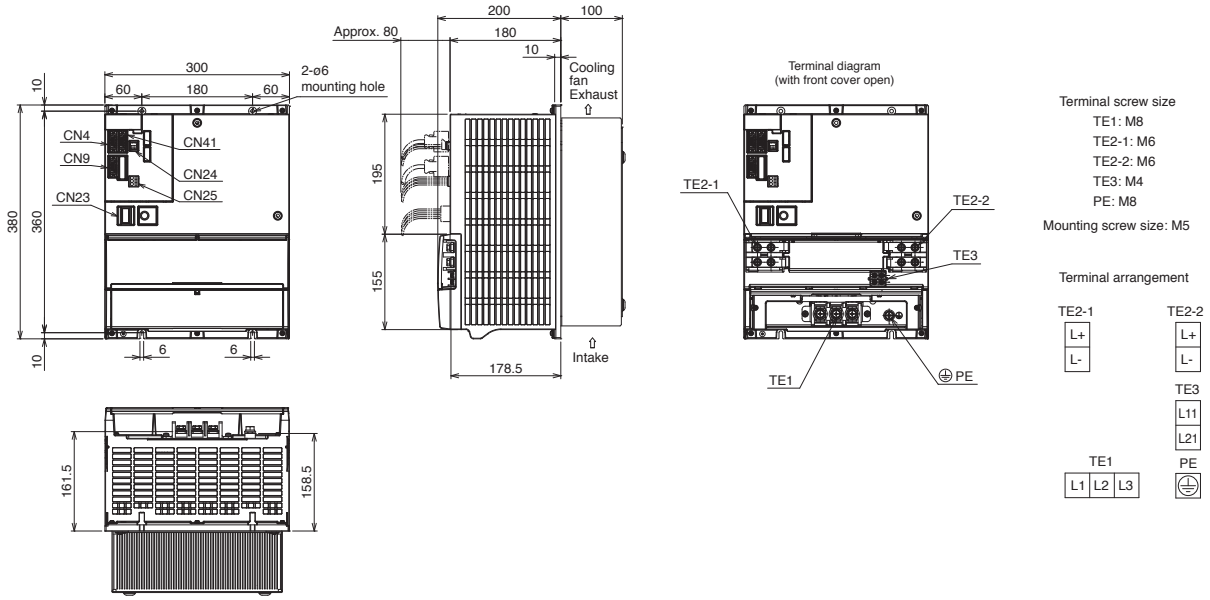
●MR-CV55K



[Unit: mm]

●MR-CV55K4

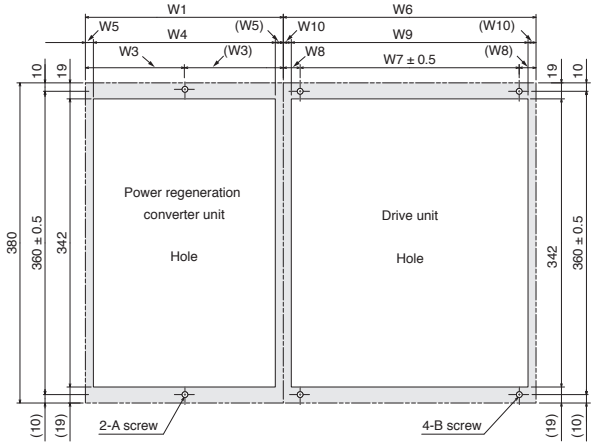
●MR-CV75K4



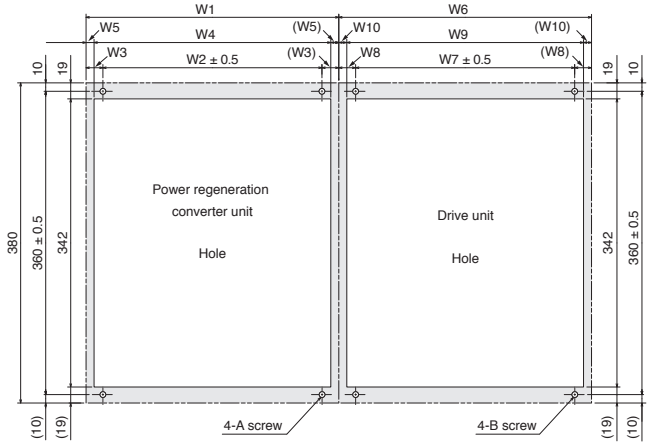
[Unit: mm]

Panel Cut Dimensions for Power Regeneration Converter Unit and Drive unit

For MR-CV11K(4) and MR-CV18K(4)



For MR-CV30K(4), MR-CV37K(4), MR-CV45K(4), MR-CV55K(4), and MR-CV75K4

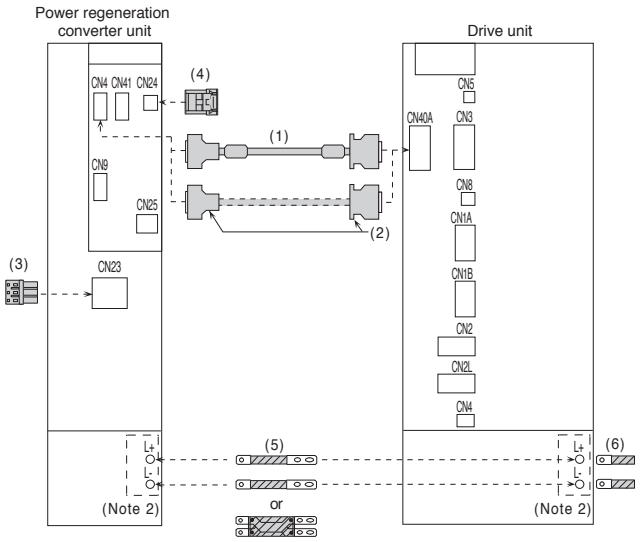


Power regeneration converter unit	Variable dimensions					Screw size
	W1	W2	W3	W4	W5	A
MR-CV11K(4), MR-CV18K(4)	90	-	45	82	4	M5
MR-CV30K(4), MR-CV37K(4), MR-CV45K(4)	150	60	45	142	4	M5
MR-CV55K(4), MR-CV75K4	300	180	60	282	9	M5

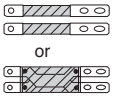
Drive unit	Variable dimensions					Screw size
	W6	W7	W8	W9	W10	B
MR-J4-DU900B(4)(-RJ), MR-J4-DU11KB(4)(-RJ)	150	60	45	142	4	M5
MR-J4-DU15KB(4)(-RJ), MR-J4-DU22KB(4)(-RJ)	240	120	60	222	9	M5

[Unit: mm]

Configuration Example (Note 1)

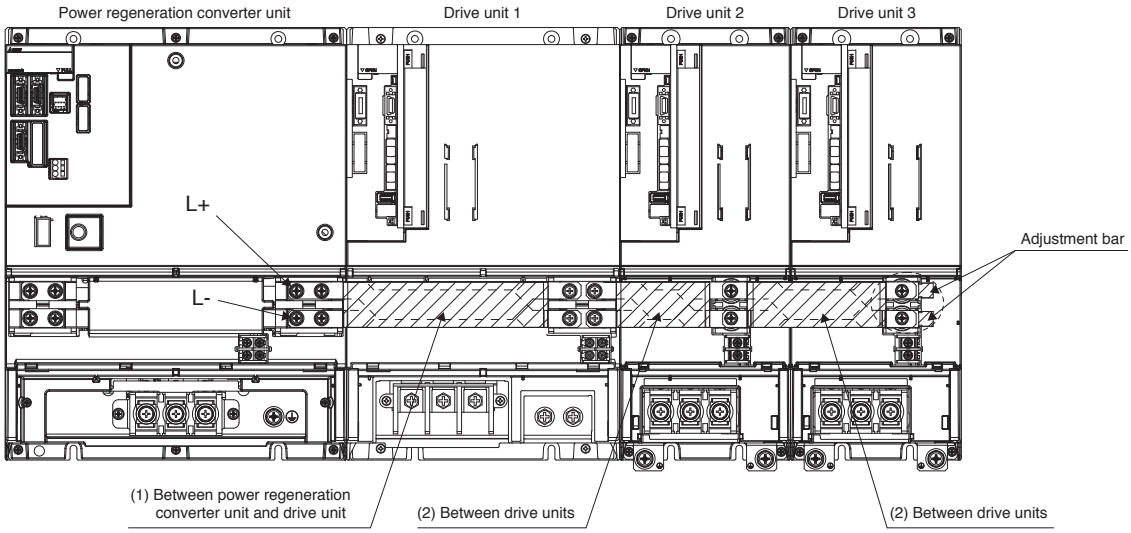


Cables and Connectors

	Item	Model	Cable length	IP rating	Application	Description
(1)	Protection coordination cable	MR-CUL06M	0.6 m	-	For MR-J4-DU_B_(-RJ)/ MR-CV_	Converter unit connector Connector: 10120-3000PE Shell kit: 10320-52F0-008 (3M) or an equivalent product Drive unit connector Connector: PCR-S20FS+ Case: PCR-LS20LA1 (Honda Tsushin Kogyo Co., Ltd.) 
(2)	Connector set	MR-J2CN1-A	-	-	For MR-J4-DU_B_(-RJ)/ MR-CV_	Converter unit connector Connector: 10120-3000PE Shell kit: 10320-52F0-008 (3M) or an equivalent product Drive unit connector Connector: PCR-S20FS+ Case: PCR-LS20LA1 (Honda Tsushin Kogyo Co., Ltd.) 
(3)	Magnetic contactor wiring connector	-	-	-	(Standard accessory)	 Converter unit connector Connector: 03JFAT-SAXGSA-L (J.S.T. Mfg. Co., Ltd.)  Open tool J-FAT-OT-EXL (J.S.T. Mfg. Co., Ltd.)
(4)	Connector set (Note 3)	MR-CVCN24S	-	-	-	 Converter unit connector Connector: DK-2100D-08R Contact: DK-2RECSLP1-100 (DDK Ltd.)
(5)	Bus bar (Note 5)	-	-	-	-	 Refer to "Bus Bar (for 200 V)" and "Bus Bar (for 400 V)" on pp. 19 and 20 in this brochure for details.
(6)	Adjustment bar (Note 4)	MR-DCBAR035-B05	-	-	-	

Notes: 1. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the cables and connectors for MR-CR.
2. Terminal varies depending on the capacity of the power regeneration converter unit and the drive unit. Refer to the dimensions of the relevant unit in "MELSERVO-J4 catalog (L(NA)03058)" or this brochure.
3. Crimping tool (357J-22733) (DDK Ltd.) is required. Contact the manufacturer directly.
4. The adjustment bar is required when the total number of MR-J4-DU900B(4)(-RJ) and MR-J4-DU11KB(4)(-RJ) drive units connected to the power regeneration converter unit is even because there is a gap between the bus bar and TE2 terminal block of the final drive unit axis (right end). Place the adjustment bars in the gap and tighten the screws.
5. The bus bar varies depending on the combination of the power regeneration converter unit and the drive unit. Refer to "Bus Bar (for 200 V)" and "Bus Bar (for 400 V)" on pp. 19 and 20 in this brochure for details.

Bus bar (for 200 V)



(1) Between power regeneration converter unit and drive unit

Unit mounted on the left side (Note 1)	Unit mounted on the right side (Note 1, 3)	Bus bar model
MR-CV11K	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR137-B52
MR-CV18K	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR137-B52
	MR-J4-DU15KB	MR-DCBAR235-B52
MR-CV30K	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR159-B52
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR255-B52
	MR-J4-DU30KB	MR-DCBAR105-C03
MR-CV37K, MR-CV45K	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR159-B52
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR255-B52
	MR-J4-DU30KB, MR-J4-DU37KB	MR-DCBAR105-C03
MR-CV55K	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR159-B53
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR257-B53
	MR-J4-DU30KB, MR-J4-DU37KB	MR-DCBAR106-C04 (Note 2)

(2) Between drive units

Unit mounted on the left side (Note 1, 3)	Unit mounted on the right side (Note 1, 3)	Bus bar model
MR-J4-DU900B	MR-J4-DU900B	MR-DCBAR170-B52
MR-J4-DU11KB	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR170-B52
MR-J4-DU15KB	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR137-B52
	MR-J4-DU15KB	MR-DCBAR235-B52
MR-J4-DU22KB	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR137-B52
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR235-B52
MR-J4-DU30KB	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR159-B53
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR257-B53
	MR-J4-DU30KB	MR-DCBAR106-C04 (Note 2)
MR-J4-DU37KB	MR-J4-DU900B, MR-J4-DU11KB	MR-DCBAR159-B53
	MR-J4-DU15KB, MR-J4-DU22KB	MR-DCBAR257-B53
	MR-J4-DU30KB, MR-J4-DU37KB	MR-DCBAR106-C04 (Note 2)

Notes: 1. "Unit mounted on the left side" and "Unit mounted on the right side" indicate the position when the units are seen from the front.
2. This bus bar is supplied with the drive unit.
3. Note that the drive units with special specification (MR-J4-DU_B-RJ/-EB/-KS) also use the same bus bars listed.

Bus bar (for 400 V)

(1) Power regeneration converter unit and drive unit

Unit mounted on the left side (Note 1)	Unit mounted on the right side (Note 1, 3)	Bus bar model
MR-CV11K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR137-B52
MR-CV18K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR137-B52
	MR-J4-DU15KB4	MR-DCBAR235-B52
MR-CV30K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR255-B52
	MR-J4-DU30KB4	MR-DCBAR082-C02
MR-CV37K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR255-B52
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR082-C02
MR-CV45K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR255-B52
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR082-C02
	MR-J4-DU45KB4	MR-DCBAR105-C03
MR-CV55K4, MR-CV75K4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B53
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR257-B53
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR085-C03 (Note 2)
	MR-J4-DU45KB4, MR-J4-DU55KB4	MR-DCBAR106-C04 (Note 2)

(2) Between drive units

Unit mounted on the left side (Note 1, 3)	Unit mounted on the right side (Note 1, 3)	Bus bar model
MR-J4-DU900B4	MR-J4-DU900B4	MR-DCBAR170-B52
MR-J4-DU11KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR170-B52
MR-J4-DU15KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR137-B52
	MR-J4-DU15KB4	MR-DCBAR235-B52
MR-J4-DU22KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR137-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR235-B52
MR-J4-DU30KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR310-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR409-B52
	MR-J4-DU30KB4	MR-DCBAR235-B52
MR-J4-DU37KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR310-B52
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR409-B52
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR235-B52
MR-J4-DU45KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B53
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR257-B53
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR085-C03 (Note 2)
	MR-J4-DU45KB4	MR-DCBAR106-C04 (Note 2)
MR-J4-DU55KB4	MR-J4-DU900B4, MR-J4-DU11KB4	MR-DCBAR159-B53
	MR-J4-DU15KB4, MR-J4-DU22KB4	MR-DCBAR257-B53
	MR-J4-DU30KB4, MR-J4-DU37KB4	MR-DCBAR085-C03 (Note 2)
	MR-J4-DU45KB4, MR-J4-DU55KB4	MR-DCBAR106-C04 (Note 2)

Notes: 1. "Unit mounted on the left side" and "Unit mounted on the right side" indicate the position when the units are seen from the front.
2. This bus bar is supplied with the drive unit.
3. Note that the drive units with special specification (MR-J4-DU_B-RJ/-EB/-KS) also use the same bus bars listed.

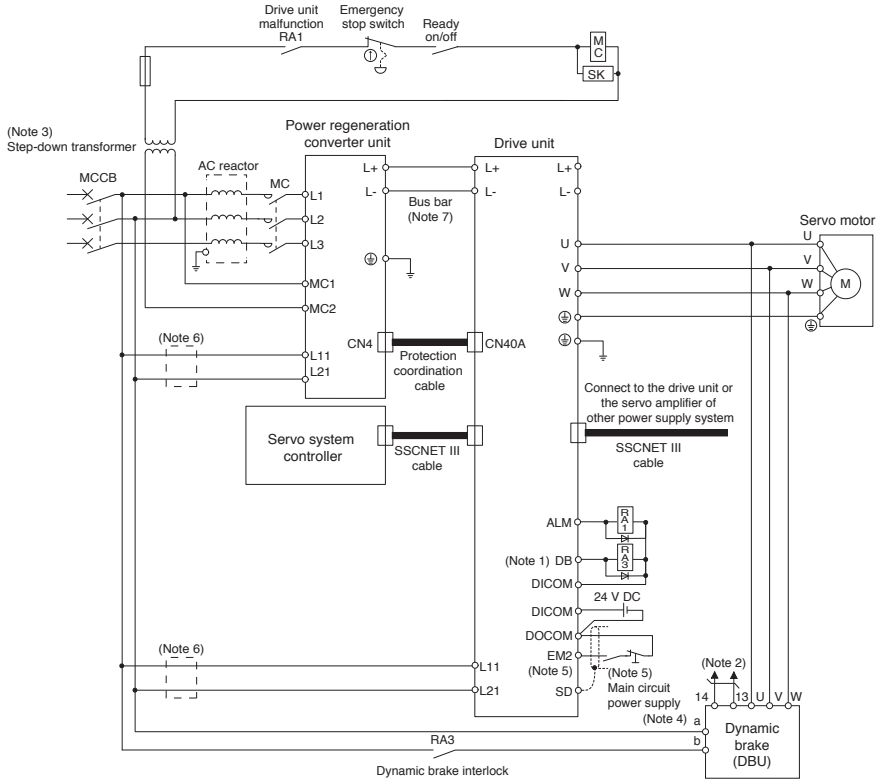
Dynamic Brake

Drive unit model	External dynamic brake model (Note 3)
MR-J4-DU900B(-RJ)	DBU-7K-R6 DBU-11K (note 1)
MR-J4-DU11KB(-RJ)	DBU-11K
MR-J4-DU15KB(-RJ)	DBU-15K
MR-J4-DU22KB(-RJ)	DBU-22K-R1

Drive unit model	External dynamic brake model (Note 3)
MR-J4-DU900B4(-RJ)	DBU-7K-4-2R0 DBU-11K-4 (Note 2)
MR-J4-DU11KB4(-RJ)	DBU-11K-4
MR-J4-DU15KB4(-RJ)	DBU-22K-4
MR-J4-DU22KB4(-RJ)	

Notes: 1. Use this dynamic brake when HG-JR801 or HG-JR903 servo motor is used.
2. Use this dynamic brake when HG-JR8014 or HG-JR9034 servo motor is used.
3. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the dimensions. The dimensions of DBU-7K-R6 and DBU-7K-4-2R0 are same as those of DBU-11K and DBU-11K-4, respectively.

Connections



Notes: 1. Validate DB (Dynamic brake interlock) with [Pr. PD07] to [Pr. PD09].
2. The terminals 13 and 14 are normally opened outputs. If the dynamic brake is welded, the terminals 13 and 14 will be opened. Thus, create an external sequence circuit that SON (Servo-on) does not turn on when the terminals 13 and 14 are opened.
3. A step-down transformer is required if the power regeneration converter unit is in 400 V class, and coil voltage of the magnetic contactor is in 200 V class.
4. When using DBU-7K-4-2R0, DBU-11K-4, or DBU-22K-4, the power supply voltage must be between 1-phase 380 V AC and 463 V AC, 50 Hz/60 Hz. Refer to "MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual" for details.
5. To prevent an unexpected restart of the drive unit, create a circuit to turn off EM2 (Forced stop 2) when the main circuit power is turned off.
6. Install an overcurrent protection device (molded-case circuit breaker, fuse, etc.) to protect the branch circuit.
7. The bus bar varies depending on the combination of the power regeneration converter unit and the drive unit. Refer to "Bus Bar (for 200 V)" and "Bus Bar (for 400 V)" on pp. 19 and 20 in this brochure for details.

EMC Filter

The following filters are recommended as a filter compliant with the EMC directive for the power supply of the power regeneration converter unit.

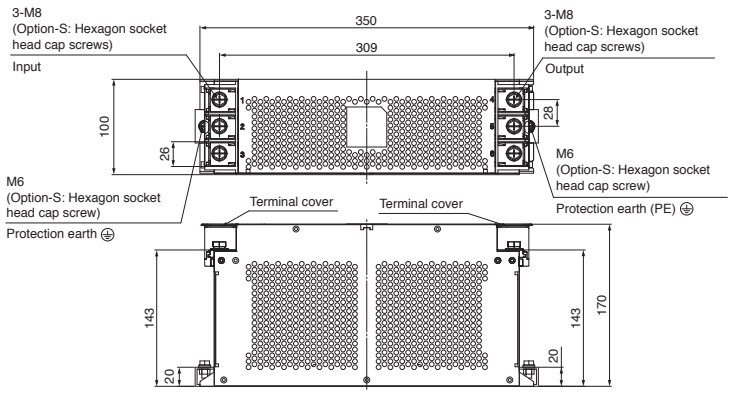
Converter unit model	EMC filter model (Note 1, 3)	Rated current [A]	Rated voltage [V AC]	Leakage current [mA]	Mass [kg]
MR-CV11K MR-CV18K	HF3100A-UN (Note 4)	100	250	6.5	12
MR-CV30K MR-CV37K MR-CV45K MR-CV55K	HF3200A-UN (Note 4)	200	250	9	18
MR-CV11K4	TF3030C-TX	30	500	5.5	7.5
MR-CV18K4	TF3060C-TX	60	500	5.5	12.5
MR-CV30K4 MR-CV37K4 MR-CV45K4 MR-CV55K4 MR-CV75K4	TF3150C-TX	150	500	5.5	31

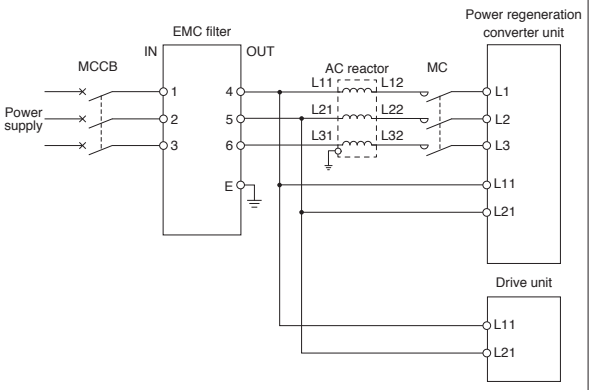
Converter unit model	EMC Filter model (Note 2)	Rated current [A]	Rated voltage [V AC]	Leakage current [mA]	Mass [kg]
MR-CV11K MR-CV18K	FTB-100-355-L (Note 4)	100	500	40	5.3
MR-CV11K4 MR-CV18K4	FTB-80-355-L (Note 5)	80	500	80	5.3
MR-CV30K4 MR-CV37K4 MR-CV45K4 MR-CV55K4 MR-CV75K4	FTB-150-355-L (Note 3, 5)	150	500	80	7.8

Notes: 1. Manufactured by Soshin Electric Co., Ltd.
2. Manufactured by COSEL Co., Ltd.
3. Refer to "MELSERVO-J4 catalog (L(NA)03058)" for the dimensions.
4. RSPD-250-U4 surge protector (manufactured by Okaya Electric Industries Co., Ltd.) is separately required to use this EMC filter.
5. RSPD-500-U4 surge protector (manufactured by Okaya Electric Industries Co., Ltd.) is separately required to use this EMC filter.

Dimensions [Unit: mm]	Connections

FTB-80-355-L, FTB-100-355-L



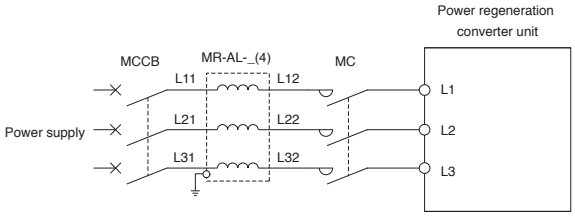


AC reactor (MR-AL)

Power regeneration converter unit model	AC reactor model
MR-CV11K	MR-AL-11K
MR-CV18K	MR-AL-18K
MR-CV30K	MR-AL-30K
MR-CV37K	MR-AL-37K
MR-CV45K	MR-AL-45K
MR-CV55K	MR-AL-55K

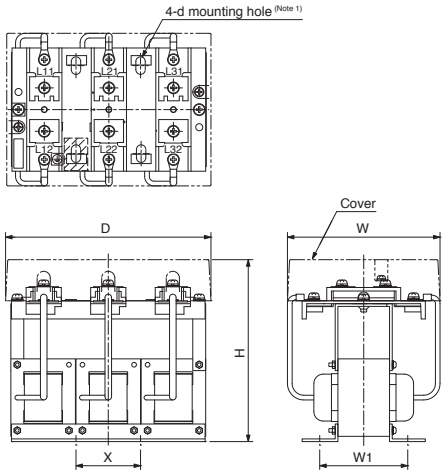
Power regeneration converter unit model	AC reactor model
MR-CV11K4	MR-AL-11K4
MR-CV18K4	MR-AL-18K4
MR-CV30K4	MR-AL-30K4
MR-CV37K4	MR-AL-37K4
MR-CV45K4	MR-AL-45K4
MR-CV55K4	MR-AL-55K4
MR-CV75K4	MR-AL-75K4

Connections



Dimensions

[Unit: mm]



Model	Variable dimensions						Mass [kg]	Terminal screw
	W	D	H	W1	X	d		
MR-AL-11K	130	175	155	75	55	M6	3.7	M5
MR-AL-18K	130	175	155	105	55	M6	5.3	M6
MR-AL-30K	140	175	155	110	55	M6	6.1	M6
MR-AL-37K	150	215	175	110	70	M6	8.6	M6
MR-AL-45K	160	215	175	120	70	M6	9.7	M6
MR-AL-55K	230	220	195	120	200	M8	11.5	M10
MR-AL-11K4	130	175	155	75	55	M6	3.7	M5
MR-AL-18K4	130	175	155	105	55	M6	5.3	M6
MR-AL-30K4	140	175	155	110	55	M6	6.0	M6
MR-AL-37K4	150	215	175	110	70	M6	8.5	M6
MR-AL-45K4	160	215	175	120	70	M6	9.8	M6
MR-AL-55K4	230	220	210	120	200	M8	10.5	M6
MR-AL-75K4	230	250	215	143	230	M8	13.0	M6

Notes: 1. Use this mounting hole for grounding.

Wires, Molded-Case Circuit Breakers and Magnetic Contactors

Converter unit model (Note 1)	Molded-case circuit breaker (Note 3, 5)	Magnetic contactor (Note 4)	Wire size [mm²] (Note 2, 3)	
			L1, L2, L3, ⏚	L11, L21
MR-CV11K	50 A frame 50 A	S-T35	8 (AWG 8)	1.25 to 2 (AWG 16 to 14)
MR-CV18K	100 A frame 100 A	S-T65	22 (AWG 4)	
MR-CV30K	225 A frame 150 A	S-N125	38 (AWG 2)	
MR-CV37K	225 A frame 175 A	S-N125	60 (AWG 2/0)	
MR-CV45K	225 A frame 225 A	S-N150	60 (AWG 2/0)	
MR-CV55K	400 A frame 300 A	S-N220	80 (AWG 3/0)	
MR-CV11K4	30 A frame 30 A	S-T21	5.5 (AWG 10)	
MR-CV18K4	50 A frame 50 A	S-T35	8 (AWG 8)	
MR-CV30K4	100 A frame 80 A	S-T65	14 (AWG 6)	
MR-CV37K4	100 A frame 100 A	S-T80	22 (AWG 4)	
MR-CV45K4	125 A frame 125 A	S-T100	22 (AWG 4)	
MR-CV55K4	225 A frame 150 A	S-N125	38 (AWG 2)	
MR-CV75K4	225 A frame 200 A	S-N150	60 (AWG 2/0)	

Drive unit model (Note 1)	Wire size [mm²] (Note 2, 3)	
	U, V, W, ⏚	L11, L21
MR-J4-DU900B(-RJ)	14 (AWG 6)	1.25 to 2 (AWG 16 to 14)
MR-J4-DU11KB(-RJ)	14 (AWG 6)	
MR-J4-DU15KB(-RJ)	22 (AWG 4)	
MR-J4-DU22KB(-RJ)	38 (AWG 2)	
MR-J4-DU900B4(-RJ)	8 (AWG 8)	
MR-J4-DU11KB4(-RJ)	8 (AWG 8)	
MR-J4-DU15KB4(-RJ)	8 (AWG 8)	
MR-J4-DU22KB4(-RJ)	14 (AWG 6)	

Notes: 1. When connecting the wires to the terminal blocks, be sure to use the screws attached to the terminal blocks.
2. The wire size is selected based on the maximum rated current of the servo motors combined.
3. When complying with IEC/EN/UL/CSA standard, refer to "MR-CV_/MR-CR_/MR-J4-DU_ Instructions and Cautions for Safe Use of AC Servos" enclosed with the converter unit and the drive unit.
4. 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.
5. Use a molded-case circuit breaker having the operation characteristics equal to or higher than Mitsubishi Electric general-purpose products.

Related Material

Related materials are listed below:

Catalog

Catalog name	Document No.
Servo Amplifiers & Motors MELSERVO-J4 Catalog	L(NA)03058

Manual (Instruction Manual)

Manual name	Manual No.
MR-CV_ MR-CR55K_ MR-J4-DU_B_(-RJ) MR-J4-DU_A_(-RJ) Instruction Manual	SH-030153
MR-J4-_B_(-RJ) Servo Amplifier Instruction Manual	SH-030106
MELSERVO-J4 Servo Amplifier Instruction Manual Trouble Shooting	SH-030109

⚠ Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance management systems)

ISO 14001 JACO EC97J1113 UKAS MANAGEMENT SYSTEMS 051

ISO 9001 BUREAU VERITAS Certification UKAS MANAGEMENT SYSTEMS 008

MITSUBISHI ELECTRIC CORPORATION

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NAGOYA WORKS: 1-14, YADA-MINAMI 5, HIGASHI-KU, NAGOYA, JAPAN

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Specifications are subject to change without notice.