

**General-Purpose AC Servo
MELSERVO-J3**
**Servo Amplifier <MR-J3-11KB4 to MR-J3-22KB4>
Servo Motor <HA-LP Series (400VAC Type)>**

New, large capacity 400V Series (11 to 22kW) servo amplifiers have been added to MELSERVO-J3 SSCNETIII Type (new high-speed serial bus) lineup.

The 22kW servo amplifier has been downsized from the existing model (25% smaller compared to MR-J2S), allowing the users' system more compact.

The compatible servo motors, low-inertia HA-LP series, are equipped with a high-resolution absolute encoder 262144p/rev as standard specifications.

Typically suitable for the following applications: injection-molding machines, semiconductor manufacturing devices, large material handling systems and printing machines.

The servo amplifiers, MR-J3-11KB4 to 22KB4 and the servo motors, HA-LP series also conform to the global standards (EN, UL, cUL standards).


■ Servo amplifier specifications

Servo amplifier model		MR-J3-11KB4	MR-J3-15KB4	MR-J3-22KB4	
Main circuit power supply	Voltage / frequency (Note 1)	3-phase 380 to 480VAC 50/60Hz (Note 2)			
	Permissible voltage fluctuation	3-phase 323 to 528VAC			
	Permissible frequency fluctuation	±5% maximum			
Control circuit power supply	Voltage / frequency	1-phase 380 to 480VAC 50/60Hz			
	Permissible voltage fluctuation	1-phase 323 to 528VAC			
	Permissible frequency fluctuation	±5% maximum			
	Power consumption (W)	45			
Interface power supply		24VDC ±10% (required current capacity: 150mA (Note 4))			
Regenerative resistor/tolerable regenerative power (W) (Note 3)	With standard accessory (Note 5)		500 (800)	850 (1300)	850 (1300)
	Optional regeneration unit	MR-RB6B-4	500 (800)	—	—
		MR-RB60-4	—	850 (1300)	—
		MR-RB6K-4	—	—	850 (1300)
Control system		Sine-wave PWM control / current control system			
Dynamic brake		External option			
Safety features		Overcurrent shutdown, regeneration overvoltage shutdown, overload shutdown (electronic thermal), servo motor overheat protection, encoder fault protection, regeneration fault protection, undervoltage / sudden power outage protection, overspeed protection, excess error protection			
Structure		Fan cooling open (IP00)			
Environment	Ambient temperature	0 to 55°C (32 to 131°F) (non freezing), storage: -20 to 65°C (-4 to 149°F) (non freezing)			
	Ambient humidity	90% RH maximum (non condensing), storage: 90% RH maximum (non condensing)			
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust			
	Elevation	1000m or less above sea level			
	Vibration	5.9m/s ² maximum			
Mass (kg [lb])		18 (40)	18 (40)	19 (42)	

Notes: 1. Rated output and rated speed of the servo motor used in combination with the servo amplifier are as indicated when using the power supply voltage and frequency listed.

2. For torque characteristics when combined with a servo motor, refer to "Servo motor torque characteristics" on page 2 and 3 of this brochure.

3. The values in () indicate when cooling fans (approx. 1.0m³/min, □92×2 units) are installed and the parameter No. PA02 is changed.

4. 150mA is the value when all of the input/output points are used. The current capacity can be stepped down according to the number of input/output points in use.

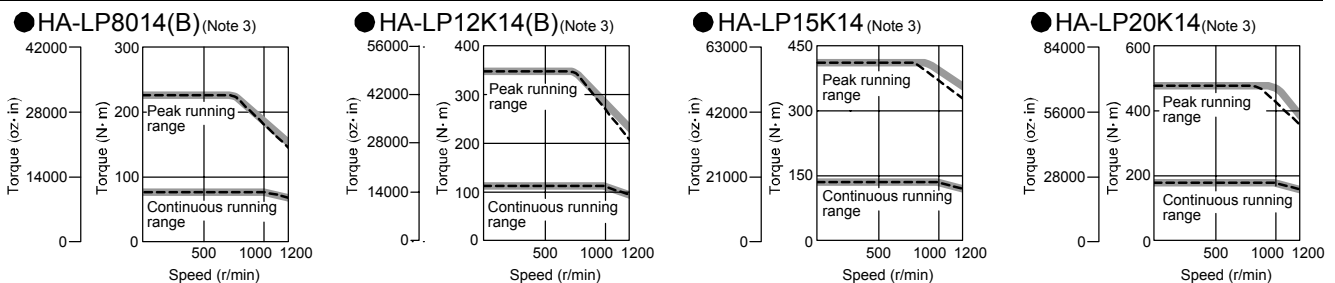
5. The servo amplifier (MR-J3-□KB4-PX) without enclosed regenerative resistors is also available for the servo amplifiers MR-J3-11KB4 to 22KB4.

Servo motor specifications

Servo motor series		HA-LP 1000r/min series (Low inertia, large capacity)				
Servo motor model		HA-LP8014(B)	HA-LP12K14(B)	HA-LP15K14	HA-LP20K14	
Servo amplifier model		MR-J3-11KB4 (Note 7)		MR-J3-15KB4 (Note 7)	MR-J3-22KB4 (Note 7)	
Servo motor	Power facility capacity (Note 1) (kVA)	12	18	22	30	
	Continuous running duty	Rated output (kW)	8.0	12	15	20
		Rated torque (N·m [oz·in])	76.4 (10800)	115 (16300)	143 (20200)	191 (27000)
	Maximum torque (N·m [oz·in])	229 (32400)	344 (48700)	415 (58800)	477 (67500)	
	Rated speed (r/min)	1000				
	Maximum speed (r/min)	1200				
	Permissible instantaneous speed (r/min)	1380				
	Power rate at continuous rated torque (kW/s)	265	445	373	561	
	Rated current (A)	20	30	40	55	
	Maximum current (A)	63	93	126	148	
	Regenerative braking frequency (times/min) (Note 2)	354	264	230	195	
	Moment of inertia J ($\times 10^{-4}$ kg·m ²) [J (oz·in ²)]	Standard	220 (1200)	295 (1610)	550 (3010)	650 (3550)
		With electromagnetic brake	293 (1600)	369 (2020)	—	—
	Recommended load/motor inertia moment ratio	10 times the servo motor's inertia moment maximum (Note 3)				
	Speed/position detector	18-bit encoder (Resolution per encoder/servo motor rotation: 262144p/rev)				
	Attachments	Oil seal				
Insulation class	Class F					
Structure	Totally enclosed ventilated (protection level: IP44) (Note 4)					
Environment	Ambient temperature	0 to 40°C (32 to 104°F) (non freezing), storage: -15 to 70°C (5 to 158°F) (non freezing)				
	Ambient humidity	80%RH maximum (non condensing), storage: 90%RH maximum (non condensing)				
	Atmosphere	Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust				
	Elevation	1000m or less above sea level				
	Vibration (Note 5)	X: 11.7m/s ² Y: 29.4m/s ²		X: 9.8m/s ² Y: 9.8m/s ²		
Mass (kg [lb])	Standard	95 (210)	115 (255)	160 (355)	180 (400)	
	With electromagnetic brake	130 (290)	150 (335)	—	—	
Cooling fan	Power supply	Voltage, frequency	3-phase 380 to 420VAC/50, 60Hz		3-phase 380 to 460VAC/50, 60Hz	
		Input (W)	55 (50Hz)/ 75 (60Hz)		65 (50Hz)/ 85 (60Hz)	
	Rated current (A)	0.12 (50Hz)/ 0.11 (60Hz)		0.12 (50Hz)/ 0.14 (60Hz)		

- Notes:
- The power facility capacity varies depending on the power supply's impedance.
 - The regenerative braking frequency shows the permissible frequency for decelerating the motor without a load from the rated speed to a stop when the regenerative resistor (GRZG400-□Ω) is used. The regenerative resistor is supplied with the servo amplifier as a standard accessory. The value applies when the parameter No. PA02 is changed, and cooling fans (approx. 1.0m³/min, □92×2 units) are installed.
 - Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
 - The shaft-through portion is excluded.

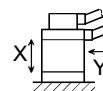
Servo motor torque characteristics (Note 1, 2)



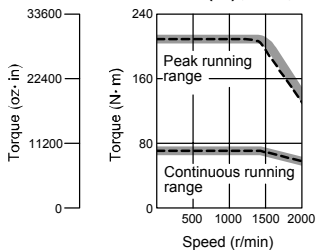
- Notes:
- : For 3-phase 400VAC.
 - - - : For 3-phase 380VAC.
 - The torque characteristics are anticipated values.

HA-LP 1500r/min series (Low inertia, large capacity)			HA-LP 2000r/min series (Low inertia, large capacity)		
HA-LP11K1M4(B)	HA-LP15K1M4(B)	HA-LP22K1M4 (Note 6)	HA-LP11K24(B)	HA-LP15K24(B)	HA-LP22K24(B)
MR-J3-11KB4 (Note 7)	MR-J3-15KB4 (Note 7)	MR-J3-22KB4 (Note 6)	MR-J3-11KB4 (Note 7)	MR-J3-15KB4 (Note 7)	MR-J3-22KB4 (Note 7)
16	22	33	16	22	33
11	15	22	11	15	22
70.0 (9910)	95.5 (13500)	140 (19800)	52.5 (7430)	71.6 (10100)	105 (14900)
210 (29700)	286 (40500)	350 (49600)	158 (22400)	215 (30400)	263 (37200)
1500			2000		
2000			2000		
2300			2300		
223	309	357	263	233	374
31	41	63	32	40	57
99	132	158	96	117	140
158	191	102	186	144	107
220 (1200)	295 (1610)	550 (3010)	105 (574)	220 (1200)	295 (1610)
293 (1600)	369 (2020)	-	113 (618)	293 (1600)	369 (2020)
10 times the servo motor's inertia moment maximum (Note 3)					
18-bit encoder (Resolution per encoder/servo motor rotation: 262144p/rev)					
Oil seal					
Class F					
Totally enclosed ventilated (protection level: IP44) (Note 4)					
0 to 40°C (32 to 104°F) (non freezing), storage: -15 to 70°C (5 to 158°F) (non freezing)					
80%RH maximum (non condensing), storage: 90%RH maximum (non condensing)					
Indoors (no direct sunlight); no corrosive gas, inflammable gas, oil mist or dust					
1000m or less above sea level					
X: 11.7m/s ² Y: 29.4m/s ²		X, Y: 9.8m/s ²		X: 11.7m/s ² Y: 29.4m/s ²	
95 (210)	115 (255)	160 (355)	55 (125)	95 (210)	115 (255)
130 (290)	150 (335)	-	70 (155)	130 (290)	150 (335)
3-phase 380 to 420VAC/50, 60Hz		3-phase 380 to 460VAC/50, 60Hz		3-phase 380 to 420VAC/50, 60Hz	
55 (50Hz)/ 75 (60Hz)		65 (50Hz)/ 85 (60Hz)		55 (50Hz)/ 75 (60Hz)	
0.12 (50Hz)/ 0.11 (60Hz)		0.12 (50Hz)/ 0.14 (60Hz)		0.12 (50Hz)/ 0.11 (60Hz)	

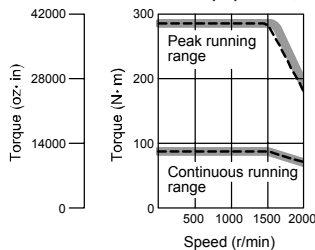
- Notes: 5. The vibration direction is shown in the right-side diagram. The numeric value indicates the maximum value of the component (commonly the bracket in the opposite direction of the motor shaft). Fretting of the bearing occurs easily when the motor stops, so maintain vibration to approximately one-half of the allowable value.
6. Contact your dealer for the delivery schedule of the servo motor or compatible servo amplifier software version.
7. The amplifier software version compatible with the HA-LP series is as follows:
A type: B3 or above B type: A4 or above



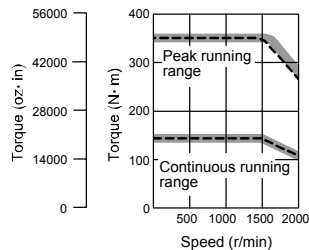
● HA-LP11K1M4(B) (Note 3)



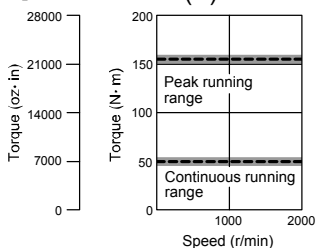
● HA-LP15K1M4(B) (Note 3)



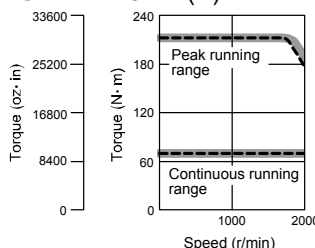
● HA-LP22K1M4 (Note 3)



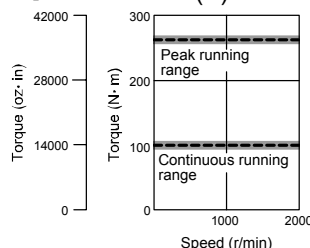
● HA-LP11K24(B)



● HA-LP15K24(B)



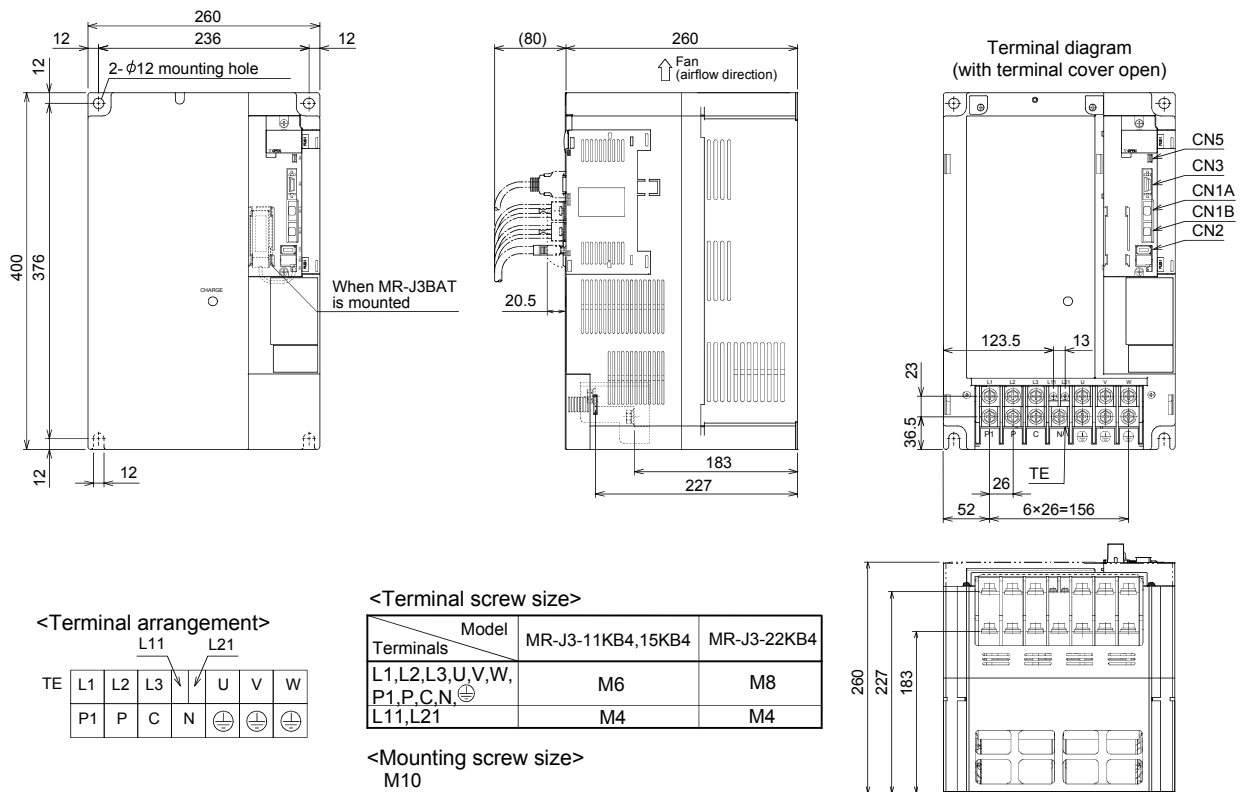
● HA-LP22K24(B)



Servo amplifier dimensions

(Unit: mm)

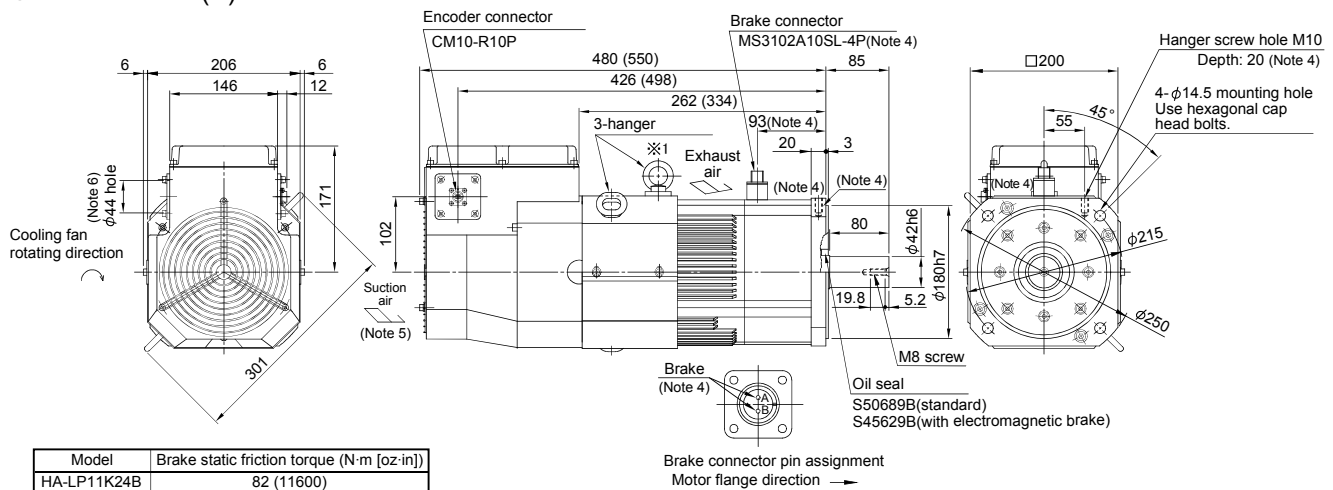
MR-J3-11KB4, 15KB4, 22KB4



Servo motor dimensions

(Unit: mm)

HA-LP11K24(B)



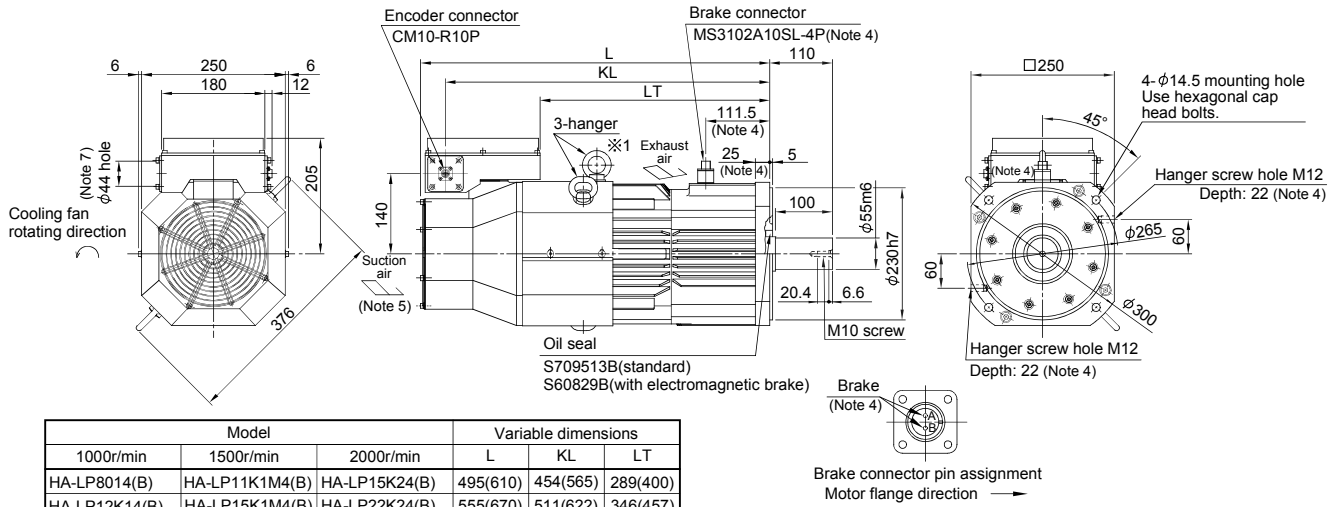
- ※1. When the motor is used without a hanger, plug the thread hole with a bolt of M10×20 or shorter.
- ※2. The terminal block on the terminal box housing consists of M6 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV) and for the thermal protector (OHS1, OHS2).

- Notes:
1. Use a friction coupling to fasten a load.
 2. For dimensions where there is no tolerance listed, use general tolerance.
 3. Dimensions inside () are for the models with an electromagnetic brake.
 4. Only for the models with an electromagnetic brake. The electromagnetic brake terminals do not have the polarity.
 5. Leave a clearance of at least 100mm between the motor's suction side and wall.
 6. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.

Servo motor dimensions

(Unit: mm)

- HA-LP8014(B), HA-LP12K14(B)
- HA-LP11K1M4(B), HA-LP15K1M4(B)
- HA-LP15K24(B), HA-LP22K24(B)



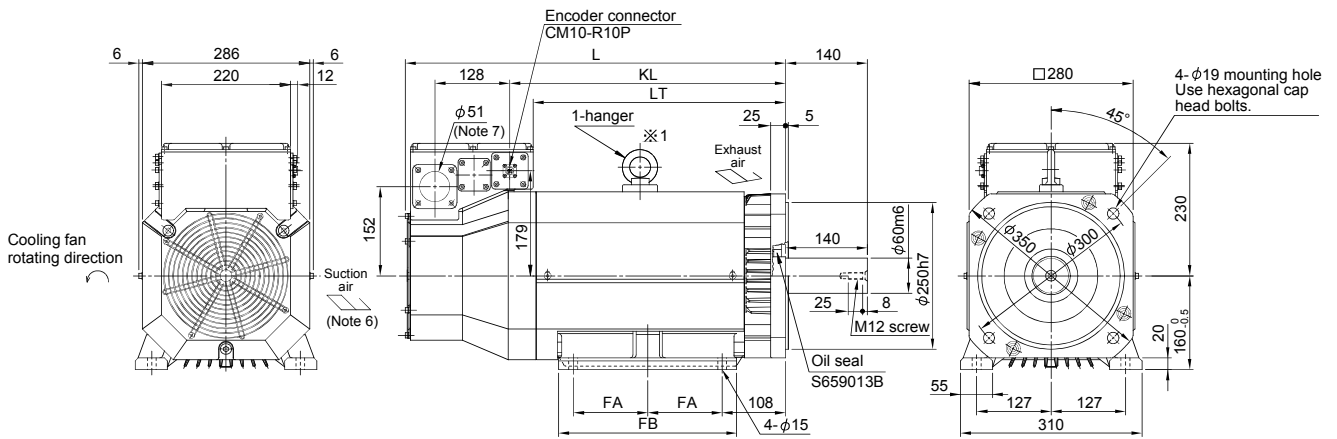
Model			Variable dimensions		
1000r/min	1500r/min	2000r/min	L	KL	LT
HA-LP8014(B)	HA-LP11K1M4(B)	HA-LP15K24(B)	495(610)	454(565)	289(400)
HA-LP12K14(B)	HA-LP15K1M4(B)	HA-LP22K24(B)	555(670)	511(622)	346(457)

Model			Brake static friction torque (N·m [oz·in])
1000r/min	1500r/min	2000r/min	
HA-LP8014B	HA-LP11K1M4B	HA-LP15K24B	160.5 (22700)
HA-LP12K14B	HA-LP15K1M4B	HA-LP22K24B	

※1. When the motor is used without a hanger, plug the thread hole with a bolt of M12×20 or shorter.

※2. The terminal block on the terminal box housing consists of M8 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).

- HA-LP15K14, HA-LP20K14
- HA-LP22K1M4



Model		Variable dimensions				
1000r/min	1500r/min	L	KL	LT	FA	FB
HA-LP15K14	HA-LP22K1M4	605	426	386	105	260
HA-LP20K14	—	650	471	431	127	304

※1. When the motor is used without a hanger, plug the thread hole with a bolt of M16X20 or shorter.

※2. The terminal block on the terminal box housing consists of M8 screws for the motor power supply (U, V, W), M4 screws for the cooling fan (BU, BV, BW) and for the thermal protector (OHS1, OHS2).

※3. When mounting the motor, keep the motor shaft horizontal and its legs downward. Mount the motor either at the legs or the flange.

Notes: 1. Use a friction coupling to fasten a load.

2. For dimensions where there is no tolerance listed, use general tolerance.

3. Dimensions inside () are for the models with an electromagnetic brake.

4. Only for the models with an electromagnetic brake. The electromagnetic brake terminals do not have the polarity.

5. Leave a clearance of at least 100mm between the motor's suction side and wall.

6. Leave a clearance of at least 150mm between the motor's suction side and wall.

7. Make sure that oil, water and dust, etc., will not enter the motor from the lead-in hole.

Options

● Regenerative resistor (standard accessory):

Supplied with the servo amplifier

Model	Applicable servo amplifier	Fig.
GRZG400-5Ω	MR-J3-11KB4	A
GRZG400-2.5Ω	MR-J3-15KB4	
GRZG400-2Ω	MR-J3-22KB4	

● Optional regeneration unit

Model	Applicable servo amplifier	Fig.
MR-RB6B-4	MR-J3-11KB4	B
MR-RB60-4	MR-J3-15KB4	
MR-RB6K-4	MR-J3-22KB4	

	External dimensions (Unit: mm)	Connections																								
A	<p>● GRZG400-5Ω, GRZG400-2.5Ω, GRZG400-2Ω : Standard accessory (Note 1, 5)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Model</th> <th>Qty.</th> <th>Tolerable regenerative power (W)</th> <th>With fan (W)</th> <th>Resistance value (Ω)</th> <th>Mass/unit kg (lb)</th> </tr> </thead> <tbody> <tr> <td>GRZG400-5Ω</td> <td>4</td> <td>500</td> <td>800</td> <td>20 (5Ω×4)</td> <td>0.8 (1.8)</td> </tr> <tr> <td>GRZG400-2.5Ω</td> <td>5</td> <td>850</td> <td>1300</td> <td>12.5 (2.5Ω×5)</td> <td></td> </tr> <tr> <td>GRZG400-2Ω</td> <td>5</td> <td>850</td> <td>1300</td> <td>10 (2Ω×5)</td> <td></td> </tr> </tbody> </table>	Model	Qty.	Tolerable regenerative power (W)	With fan (W)	Resistance value (Ω)	Mass/unit kg (lb)	GRZG400-5Ω	4	500	800	20 (5Ω×4)	0.8 (1.8)	GRZG400-2.5Ω	5	850	1300	12.5 (2.5Ω×5)		GRZG400-2Ω	5	850	1300	10 (2Ω×5)		<p>Do not disconnect the short bar.</p> <p>Leave a space of 70mm or more between each resistor.</p> <p>(1.0m³/min, □92×2 units)</p> <p>Note: By installing a thermal sensor, create a safety circuit that shuts off the main circuit power supply when abnormal overheating occurs.</p>
Model	Qty.	Tolerable regenerative power (W)	With fan (W)	Resistance value (Ω)	Mass/unit kg (lb)																					
GRZG400-5Ω	4	500	800	20 (5Ω×4)	0.8 (1.8)																					
GRZG400-2.5Ω	5	850	1300	12.5 (2.5Ω×5)																						
GRZG400-2Ω	5	850	1300	10 (2Ω×5)																						
B	<p>● MR-RB6B-4, MR-RB60-4, MR-RB6K-4 (Note 5)</p> <p><Terminal arrangement> TE1 G4 G3 C P</p> <p>Terminal screw size : M5 Mounting screw size : M8</p> <p>Fan mounting screw (4-M3)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th>Model</th> <th>Tolerable regenerative power (W)</th> <th>With fan (W)</th> <th>Resistance value (Ω)</th> <th>Description</th> <th>Mass kg (lb)</th> </tr> </thead> <tbody> <tr> <td>MR-RB6B-4</td> <td>500</td> <td>800</td> <td>20</td> <td>GRZG400-5Ω×4</td> <td>10 (22)</td> </tr> <tr> <td>MR-RB60-4</td> <td>850</td> <td>1300</td> <td>12.5</td> <td>GRZG400-2.5Ω×5</td> <td>11 (24)</td> </tr> <tr> <td>MR-RB6K-4</td> <td>850</td> <td>1300</td> <td>10</td> <td>GRZG400-2Ω×5</td> <td></td> </tr> </tbody> </table>	Model	Tolerable regenerative power (W)	With fan (W)	Resistance value (Ω)	Description	Mass kg (lb)	MR-RB6B-4	500	800	20	GRZG400-5Ω×4	10 (22)	MR-RB60-4	850	1300	12.5	GRZG400-2.5Ω×5	11 (24)	MR-RB6K-4	850	1300	10	GRZG400-2Ω×5		<p>Do not disconnect the short bar.</p> <p>(Note) Thermal sensor The contact between G3 and G4 opens at 100±5°C (212±41°F).</p> <p>Create a safety circuit that shuts off the main circuit power supply when the thermal sensor activates.</p> <p>Note: Create a sequence that turns off the magnetic contactor (MC) when abnormal overheating occurs.</p>
Model	Tolerable regenerative power (W)	With fan (W)	Resistance value (Ω)	Description	Mass kg (lb)																					
MR-RB6B-4	500	800	20	GRZG400-5Ω×4	10 (22)																					
MR-RB60-4	850	1300	12.5	GRZG400-2.5Ω×5	11 (24)																					
MR-RB6K-4	850	1300	10	GRZG400-2Ω×5																						

- Notes: 1. The servo amplifier (MR-J3-□KB4-PX) without enclosed regenerative resistors is available for the servo amplifiers MR-J3-11KB4 to 22KB4.
2. The optional regeneration unit will heat up to approx. 100°C (212°F), so do not directly mount it on a wall susceptible to heat. Use nonflammable wires or provide flame resistant treatment (use silicon tubes, etc.), and wire so that the wires do not contact the optional regeneration unit.
3. Always use twisted wires for the optional regeneration unit, and keep the length as short as possible (5m or shorter).
4. Always use twisted wires for a thermal sensor, and make sure that the sensor does not fail to work properly due to inducted noise.
5. When increasing the regeneration braking frequency, install cooling fans (approx. 1.0m³/min, □92×2 units) and change the parameter No. PA02. The cooling fan must be prepared by user.

● Dynamic brake

When using an 11kW or larger servo amplifier, use these dynamic brakes if the servo motor must be suddenly stopped during a power failure or when the protection circuit functions.

Model	Applicable servo amplifier
DBU-11K-4	MR-J3-11KB4
DBU-22K-4	MR-J3-15KB4 MR-J3-22KB4

External dimensions (Unit: mm)	Connections														
<p>TE1 Screw size : M3.5</p> <p>TE2 Screw size : M4</p> <table border="1"> <thead> <tr> <th rowspan="2">Model</th> <th rowspan="2">Mass kg (lb)</th> <th colspan="2">Electrical wire size (mm²)</th> </tr> <tr> <th>U, V, W</th> <th>Other than U, V, W</th> </tr> </thead> <tbody> <tr> <td>DBU-11K-4</td> <td>6.7 (15)</td> <td>5.5 (AWG10)</td> <td>2 (AWG14)</td> </tr> <tr> <td>DBU-22K-4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Model	Mass kg (lb)	Electrical wire size (mm ²)		U, V, W	Other than U, V, W	DBU-11K-4	6.7 (15)	5.5 (AWG10)	2 (AWG14)	DBU-22K-4				<p>Notes:</p> <ol style="list-style-type: none"> 1. Validate the DB signal with the parameter No. PD07 to PD09. 2. Create an external sequence that turns off the power supply when the servo alarm occurs. 3. The terminals 13 and 14 are a-contact outputs. If the dynamic brake is welded, the terminals 13 and 14 will be opened. So create the external sequence that the servo on signal does not turn on when the terminals 13 and 14 are opened.
Model			Mass kg (lb)	Electrical wire size (mm ²)											
	U, V, W	Other than U, V, W													
DBU-11K-4	6.7 (15)	5.5 (AWG10)	2 (AWG14)												
DBU-22K-4															

● Power factor improvement reactor

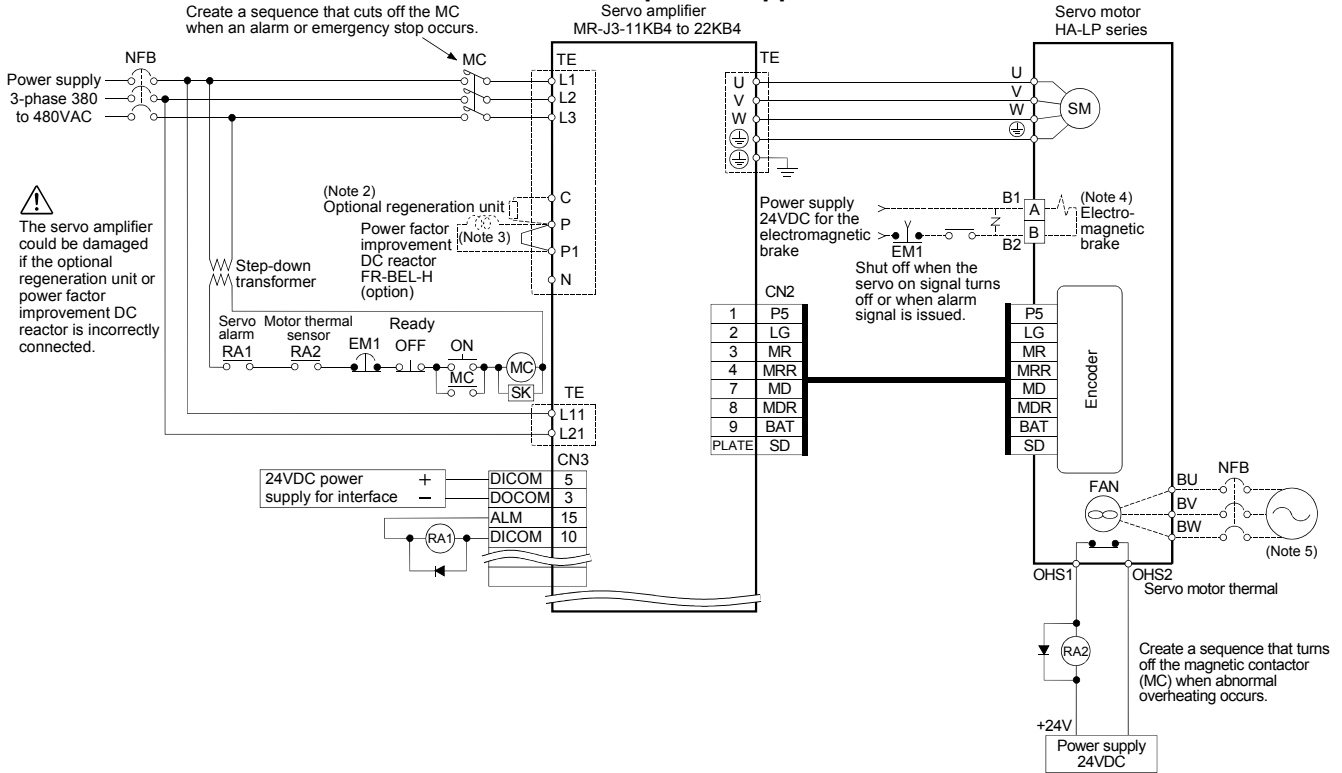
Type	Model	Applicable servo amplifier	Fig.
AC reactor	FR-BAL-H15K	MR-J3-11KB4	A
	FR-BAL-H22K	MR-J3-15KB4	
	FR-BAL-H30K	MR-J3-22KB4	

Type	Model	Applicable servo amplifier	Fig.
DC reactor	FR-BEL-H15K	MR-J3-11KB4	B
	FR-BEL-H22K	MR-J3-15KB4	
	FR-BEL-H30K	MR-J3-22KB4	

External dimensions (Unit: mm)	Connections																																																									
<p>A</p> <table border="1"> <thead> <tr> <th rowspan="2">Model</th> <th colspan="6">Variable dimensions (mm)</th> <th rowspan="2">Mounting screw size</th> <th rowspan="2">Terminal screw size</th> <th rowspan="2">Mass kg (lb)</th> </tr> <tr> <th>W</th> <th>W1</th> <th>H</th> <th>D</th> <th>D1</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>FR-BAL-H15K</td> <td>295</td> <td>270</td> <td>244</td> <td>130</td> <td>110±5</td> <td>12.5</td> <td>M6</td> <td>M5</td> <td>27 (60)</td> </tr> <tr> <td>FR-BAL-H22K</td> <td>290</td> <td>240</td> <td>269</td> <td>199</td> <td>170±5</td> <td>25</td> <td>M8</td> <td>M8</td> <td>35 (77)</td> </tr> <tr> <td>FR-BAL-H30K</td> <td>290</td> <td>240</td> <td>290</td> <td>219</td> <td>190±5</td> <td>25</td> <td>M8</td> <td>M8</td> <td>43 (95)</td> </tr> </tbody> </table>	Model	Variable dimensions (mm)						Mounting screw size	Terminal screw size	Mass kg (lb)	W	W1	H	D	D1	C	FR-BAL-H15K	295	270	244	130	110±5	12.5	M6	M5	27 (60)	FR-BAL-H22K	290	240	269	199	170±5	25	M8	M8	35 (77)	FR-BAL-H30K	290	240	290	219	190±5	25	M8	M8	43 (95)	<p>Connections</p>											
Model		Variable dimensions (mm)									Mounting screw size	Terminal screw size	Mass kg (lb)																																													
	W	W1	H	D	D1	C																																																				
FR-BAL-H15K	295	270	244	130	110±5	12.5	M6	M5	27 (60)																																																	
FR-BAL-H22K	290	240	269	199	170±5	25	M8	M8	35 (77)																																																	
FR-BAL-H30K	290	240	290	219	190±5	25	M8	M8	43 (95)																																																	
<p>B</p> <p>Note: The terminal cover is supplied with the unit. Install the cover after connecting the wires.</p> <table border="1"> <thead> <tr> <th rowspan="2">Model</th> <th colspan="8">Variable dimensions (mm)</th> <th rowspan="2">Mounting screw size</th> <th rowspan="2">Mass kg (lb)</th> <th rowspan="2">Electrical wire size (mm²)</th> </tr> <tr> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> <th>F</th> <th>L</th> <th>G</th> <th>H</th> </tr> </thead> <tbody> <tr> <td>FR-BEL-H15K</td> <td>170</td> <td>93</td> <td>160</td> <td>2.3</td> <td>155</td> <td>6</td> <td>14</td> <td>M6</td> <td>56</td> <td>3.7 (8.2)</td> <td>8 (AWG8)</td> </tr> <tr> <td>FR-BEL-H22K</td> <td>185</td> <td>119</td> <td>171</td> <td>2.6</td> <td>165</td> <td>7</td> <td>15</td> <td>M6</td> <td>70</td> <td>5.0 (11)</td> <td>22 (AWG4)</td> </tr> <tr> <td>FR-BEL-H30K</td> <td>185</td> <td>119</td> <td>189</td> <td>2.6</td> <td>165</td> <td>7</td> <td>15</td> <td>M6</td> <td>70</td> <td>6.7 (15)</td> <td>22 (AWG4)</td> </tr> </tbody> </table>	Model	Variable dimensions (mm)								Mounting screw size	Mass kg (lb)	Electrical wire size (mm ²)	A	B	C	D	E	F	L	G	H	FR-BEL-H15K	170	93	160	2.3	155	6	14	M6	56	3.7 (8.2)	8 (AWG8)	FR-BEL-H22K	185	119	171	2.6	165	7	15	M6	70	5.0 (11)	22 (AWG4)	FR-BEL-H30K	185	119	189	2.6	165	7	15	M6	70	6.7 (15)	22 (AWG4)	<p>Connections</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Disconnect the short bar between P and P1 when using the DC reactor. 2. Connect the DC reactor using 5m or shorter electrical wire.
Model		Variable dimensions (mm)											Mounting screw size	Mass kg (lb)	Electrical wire size (mm ²)																																											
	A	B	C	D	E	F	L	G	H																																																	
FR-BEL-H15K	170	93	160	2.3	155	6	14	M6	56	3.7 (8.2)	8 (AWG8)																																															
FR-BEL-H22K	185	119	171	2.6	165	7	15	M6	70	5.0 (11)	22 (AWG4)																																															
FR-BEL-H30K	185	119	189	2.6	165	7	15	M6	70	6.7 (15)	22 (AWG4)																																															

Standard wiring diagram

Connection of main circuit and control circuit power supplies and CN2 connector (Note 6)



- Notes:
1. Refer to "MR-J3-□B SERVO AMPLIFIER INSTRUCTION MANUAL" for details on the connection.
 2. The 11kW or larger servo amplifier does not have a built-in regenerative resistor.
 3. Disconnect the short bar between P and P1 when using the DC reactor.
 4. For the motor with an electromagnetic brake. The electromagnetic brake terminals (B1, B2) do not have the polarity.
 5. Always supply power to the fan terminal. The power supply differs according to the motor. Refer to the "Cooling fan power supply" in the Servo motor specifications on page 2 and 3 in this brochure.
 6. Connections other than shown in the diagram are same as for MR-J3-700B or smaller servo amplifier. Refer to "MELSERVO-J3 catalog".

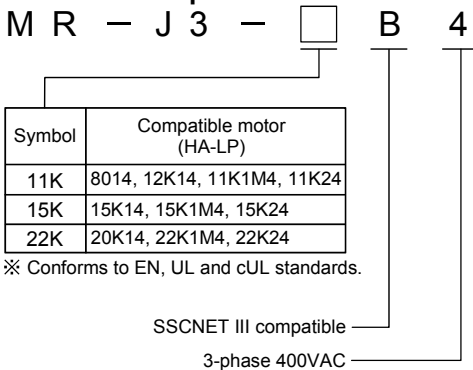
Electrical wires, circuit breakers, magnetic contactors

Servo amplifier	Circuit breaker	Magnetic contactor	Electrical wire size (mm ²) (Note 1)						
			L1,L2,L3,⊕	L11,L21	U,V,W,⊕	P,C (Note 2)	B1,B2	BU,BV,BW	OHS1,OHS2
MR-J3-11KB4	60A frame 60A	S-N25	8 (AWG8)	1.25 (AWG16)	8 (AWG8)	3.5 (AWG12)	1.25 (AWG16)	2 (AWG14)	1.25 (AWG16)
MR-J3-15KB4	100A frame 75A	S-N35	14 (AWG6)		22 (AWG4)	5.5 (AWG10)			
MR-J3-22KB4	225A frame 125A	S-N65							

- Notes:
1. The wires in the above table are assumed to use 600V polyvinyl chloride electrical wire having a length of 30m. Use a wire with the above size or larger.
 2. Connect a reactor or an optional regeneration unit using 5m or shorter length electrical wire. For electrical wire size suitable for the power factor improvement DC reactor, refer to the "Power factor improvement reactor" on page 7 in the brochure.

Model configurations

For servo amplifier



For servo motor

