

General-Purpose AC Servo MELSERVO-J3

Servo Motor HF-SP 1000r/min Series

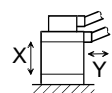
The medium inertia, medium capacity motor series HF-SP 1000r/min has been introduced into the MELSERVO-J3 series. For the HF-SP series, a rated speed of 1000r/min or 2000r/min is now available, for you to use according to your purpose. By adapting to smaller connector use, the HF-SP 1000r/min series enables more compact system to be designed. Typically suitable for the following applications: conveyor machines, robots or X-Y tables. The HF-SP 1000r/min series also conforms to global standards (EN, UL, cUL standards).



■ Servo motor specifications

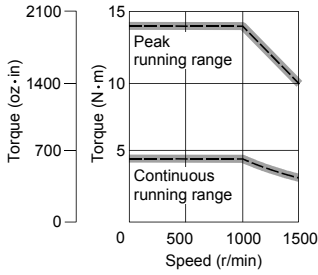
Servo motor model		HF-SP51(B)	HF-SP81(B)	HF-SP121(B)	HF-SP201(B)
Compatible servo amplifier model		MR-J3-60A	MR-J3-100A	MR-J3-200A	
Power facility capacity (Note 1) (kVA)		1.0	1.5	2.1	3.5
Continuous running duty	Rated output (kW)	0.5	0.85	1.2	2.0
	Rated torque (N•m [oz•in])	4.77 (675.4)	8.12 (1149.8)	11.5 (1628.4)	19.1 (2704.6)
Maximum torque (N•m [oz•in])		14.3 (2024.9)	24.4 (3455)	34.4 (4871)	57.3 (8113.7)
Rated speed (r/min)		1000			
Maximum speed (r/min)		1500			
Permissible instantaneous speed (r/min)		1725			
Power rate at continuous rated torque (kW/s)		19.2	37.0	34.3	48.6
Rated current (A)		2.9	4.5	6.5	11
Maximum current (A)		8.7	13.5	19.5	33
Regenerative braking frequency (times/min) (Note 2)	With no options	36	90	188	105
	MR-RB032 (30W)	284	190	–	–
	MR-RB12 (100W)	946	634	–	–
	MR-RB30 (300W)	–	–	800	400
	MR-RB32 (300W)	–	1900	–	–
Moment of inertia J ($\times 10^{-4} \text{kg}\cdot\text{m}^2$) [J (oz•in ²)]	Standard	11.9 (65.1)	17.8 (97.3)	38.3 (209)	75.0 (410)
	With electromagnetic brake	14.0 (76.5)	20.0 (109)	47.9 (262)	84.7 (463)
Recommended load/motor inertia moment ratio		15 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		–			
Insulation class		Class F			
Structure		Totally enclosed non ventilated (protection level: IP67) (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 (3280ft) or less above sea level			
Mass (kg [lb])	Vibration (Note 5)	X: 24.5m/s ² Y: 24.5m/s ²		X: 24.5m/s ² Y: 49m/s ²	
	Standard	6.5 (14.3)	8.3 (18.3)	12 (26.4)	19 (41.9)
	With electromagnetic brake	8.5 (18.7)	10.3 (22.7)	18 (39.7)	25 (55.1)

- Notes: 1. The power facility capacity varies depending on the power supply's impedance.
2. The regenerative brake frequency shows the permissible frequency for decelerating the motor without a load from rated speed to a stop.
3. Contact Mitsubishi if the load/motor of inertia moment ratio exceeds the value in the table.
4. The shaft-through portion is excluded.
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 a motor stops, so please maintain vibration to approximately one-half of the allowable value.

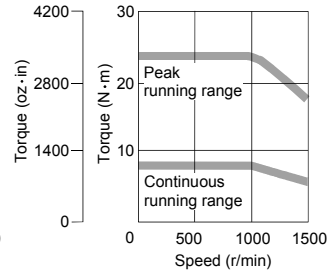


Servo motor torque characteristics

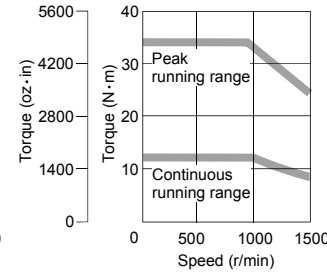
● HF-SP51(B) (Note 1,2)



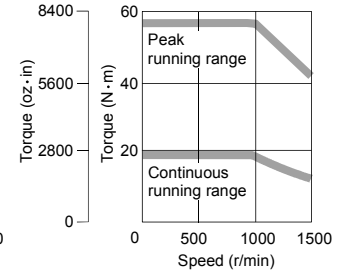
● HF-SP81(B) (Note 1)



● HF-SP121(B) (Note 1)



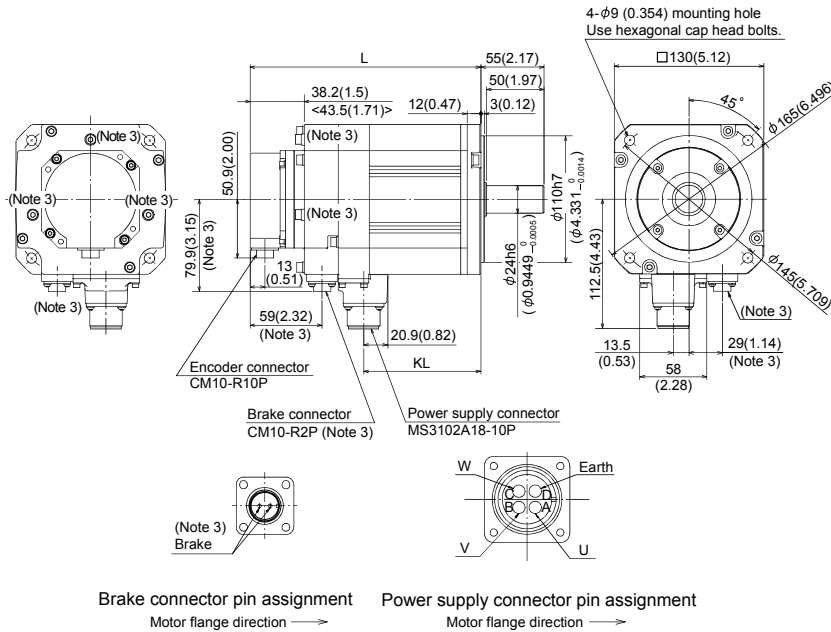
● HF-SP201(B) (Note 1)



- Notes: 1. ——— : For 3-phase 200VAC.
2. - - - - - : For 1-phase 230VAC.

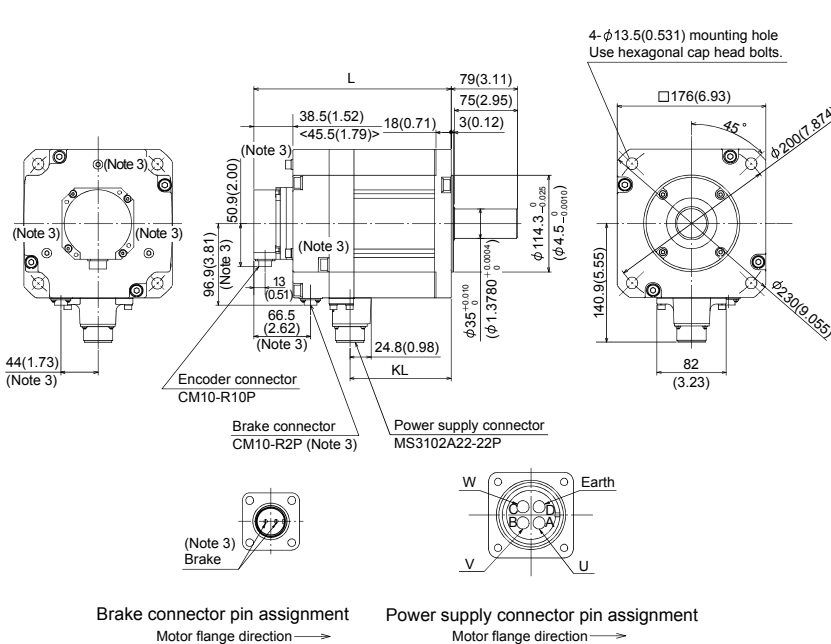
Servo motor dimensions

● HF-SP51(B), HF-SP81(B)



Model	Variable dimensions		Brake static friction torque (N·m [oz·in])
	L	KL	
HF-SP51(B)	140.5(5.53) <175(6.89)>	79.8 (3.14)	8.5(1203)
HF-SP81(B)	162.5(6.4) <197(7.76)>	101.8 (4.01)	8.5(1203)

● HF-SP121(B), HF-SP201(B)



Model	Variable dimensions		Brake static friction torque (N·m [oz·in])
	L	KL	
HF-SP121(B)	143.5(5.65) <193(7.6)>	79.8 (3.14)	44(6230)
HF-SP201(B)	183.5(7.22) <233(9.17)>	119.8 (4.72)	44(6230)

- Notes: 1. Use a friction coupling to fasten a load.
2. Dimensions inside <> are for the models with electromagnetic brake.
3. Only for the models with electromagnetic brake.
4. For dimensions where there is no tolerance listed, use general tolerance.