

# ECM-B3 Series Servo Motor Specifications

## Electrical Specifications

### Medium Inertia Motor ECM-B3M Series

	ECM-B3-C 2 0807 <sup>*1</sup>	ECM-B3-E 2 1310 <sup>*1</sup>	ECM-B3-E 2 1315 <sup>*1</sup>	ECM-B3-E 2 1320 <sup>*1</sup>
Rated Power (kW)	0.75	1	1.5	2
Rated Torque (N-m) <sup>2</sup>	2.4	4.77	7.16	9.55
Maximum Torque (N-m)	8.4	14.3	21.48	28.65
Rated Speed (rpm)	3000		2000	
Maximum Speed (rpm)	6000		3000	
Rated Current (Arms)	4.27	5.96	8.17	10.59
Max. Instantaneous Current (Arms)	15.8	19.9	26.82	34.20
Rated Power Rate (kW/s) <sup>3</sup>	53.83(50.97)	29.21 (28.66)	45.69 (45.09)	62.25 (61.62)
Rotor Inertia ( $\times 10^{-4}$ kg.m <sup>2</sup> ) <sup>3</sup>	1.07 (1.13)	7.79 (7.94)	11.22 (11.37)	14.65 (14.8)
Mechanical Time Constant (ms) <sup>3</sup>	0.54 (0.57)	1.46 (1.49)	1.10 (1.12)	1.03 (1.04)
Torque Constant -KT (N-m/A)	0.56	0.80	0.88	0.90
Voltage Constant -KE (mV/(rpm))	20.17	29.30	31.69	32.70
Armature Resistance (Ohm)	0.55	0.419	0.260	0.198
Armature Inductance (mH)	2.81	4	2.81	2.18
Electrical Time Constant (ms)	5.11	9.55	10.81	11.01
Brake Holding Torque [N-t (min)] <sup>4</sup>	2.5	10	10	10
Brake Power Consumption (at 20°C)[W]	8	21.5	21.5	21.5
Brake Release Time [ms (Max.)]	20	50	50	50
Brake Pull-In Time [ms (Max.)]	60	110	110	110
Max. Radial Loading (N) <sup>6</sup>	392	490	686	980
Max. Axial Loading (N) <sup>6</sup>	147	98	343	392
Weight (kg) <sup>3</sup>	2.34 (3.15)	4.9 (6.3)	6.0 (7.4)	7 (8.5)
Derating (%) (with oil seal)	5	5	5	5
Torque Feature (T-N Curve)				
Insulation Class	Class A (UL), Class B (CE)			
Insulation Resistance	> 100 MΩ, DC 500V			
Insulation Strength	1.8 kVac, 1 sec			
Vibration Level (μm)	V15			
Operating Temperature	-20°C ~ 60°C*5			
Storage Temperature	-20°C ~ 80°C*5			
Storage & Operation Humidity	20 ~ 90%RH (non-condensing)			
Vibration Capacity	2.5 G			
IP Rating	IP67 (when using waterproof connections and when an oil seal is fitted to the rotating shaft (for an oil seal model))			
Certifications				

#### Notes:

- In the servo motor model name, □ represents the motor inertia and 2 represents the encoder type.
- The rated torque is the continuous permissible torque between 0 to 40°C operating temperature which is suitable for the servo motor mounted with the following heat sink dimensions.  
F80: 250 mm x 250 mm x 6 mm  
F130: 400 mm x 400 mm x 20 mm  
Material: aluminum
- ( ) = motor with brake
- The built-in servo motor brake is only for keeping the object in a stopped state.  
Do not use it for deceleration or as a dynamic brake
- If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 27.

- Please follow the max. tolerant loading of the motor shaft end listed below during operation

