

ECM-B3M Series Servo Motor Specifications

Electrical Specifications - 200 V

	ECM-B3M-E 2 1310	ECM-B3M-E 2 1315	ECM-B3M-E 2 1320
Rated Power (kW)	1	1.5	2
Rated Torque (N-m) ^{*2}	4.77	7.16	9.55
Maximum Torque (N-m)	14.3	21.48	28.65
Rated Speed (rpm)		2,000	
Maximum Speed (rpm)		3,000	
Rated Current (Arms)	5.96	8.17	10.59
Max. Instantaneous Current (Arms)	19.9	26.82	34.2
Rated Power Rate (kW/s)	29.21	45.69	62.25
Rated Power Rate (kW/s) with brake	28.66	45.09	61.62
Rotor Inertia (×10 ⁻⁴ kg.m ²)	7.79	11.22	14.65
Rotor Inertia (×10 ⁻⁴ kg.m ²) with brake	7.94	11.37	14.8
Mechanical Time Constant (ms)	1.46	1.1	1.03
Mechanical Time Constant (ms) with brake	1.49	1.12	1.04
Torque Constant -KT (N-m/A)	0.8	0.88	0.9
Voltage Constant -KE (mV/(rpm))	29.3	31.69	32.7
Armature Resistance (Ohm)	0.419	0.26	0.198
Armature Inductance (mH)	4	2.81	2.18
Electrical Time Constant (ms)	9.55	10.81	11.01
Weight – without brake (kg)	4.9	6.7	7
Weight – with brake (kg)	6.3	7.4	8.5
Max. Radial Loading (N) ^{*5}	490	686	980
Max. Axial Loading (N) ^{*5}	98	343	392
Brake Working Voltage		24 V _{DC} ± 10%	
Brake Power Consumption (at 20°C)[W]	21.5	21.5	21.5
Brake Holding Torque [Nt-m (min)] ^{*3}	10	10	10
Brake Release Time [ms (Max)]	50	50	50
Brake Pull-In Time [ms (Max)]	110	110	110
Derating (%) (with oil seal)	5	5	5
Torque Feature (T-N Curve)			
Insulation Class		Class A (UL), Class B (CE)	
Insulation Resistance		> 100 M Ω, DC 500V	
Insulation Strength		1.8 kVac, 1 sec	
Vibration Level (μm)		V15	
Operating Temperature		-20°C ~ 60°C*4	
Storage Temperature		-20°C ~ 80°C	
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, 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.
F180: 550 mm x 550 mm x 30 mm
Material: aluminum
- The built-in servo motor brake is only for keeping the object in a stopped state.
- If the operating temperature is over 40°C, refer to the power derating curves of B3 motors on page 37.

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

