

## Servo Motor Features

**ECMA** series servo motors are permanent AC servo motors, capable of combining with 200 to 230V ASDA-A2 220V series AC servo drives from 100W to 15kW and 380V to 480V ASDA-A2 400V series AC servo drives from 750W to 7.5kW.

For the 220V series, there are 40mm, 60mm, 80mm, 86mm, 100mm, 130mm, 180mm eight kinds of frame sizes available. The motor speed is from 1000 r/min to 5000 r/min and the torque output is from 1.92 N-m to 224 N-m.



For the 400V series, there are 80mm, 130mm, 180mm three kinds of frame sizes available. The motor speed is from 1500 r/min to 5000 r/min and the torque output is from 2.39 N-m to 119.36 N-m. In terms of optional configurations, ECMA series provides brake and oil seal to fully support our customers' needs. It also offers two different shaft selections, round shaft and keyway, for various applications.



# Servo Motor Specifications

## - Low Inertia Series(Incremental)

### 220V Series

ECMA Series	C△04	C△06		C△08		C△09		C△10		C△13
	01	02	04	04	07	07	10	10	20	30
Rated output power (kW)	0.1	0.2	0.4	0.4	0.75	0.75	1.0	1.0	2.0	3.0
Rated torque (N-m) <sup>*1</sup>	0.32	0.64	1.27	1.27	2.39	2.39	3.18	3.18	6.37	9.55
Maximum torque (N-m)	0.96	1.92	3.82	3.82	7.16	7.14	8.78	9.54	19.11	28.65
Rated speed (r/min)	3000					3000		3000		3000
Maximum speed (r/min)	5000					3000		5000		4500
Rated current (A)	0.90	1.55	2.6	2.6	5.1	3.66	4.25	7.3	12.05	17.2
Maximum current (A)	2.70	4.65	7.8	7.24	15.3	11	12.37	21.9	36.15	47.5
Power rating (kW/s)	27.7	22.4	57.6	22.1	48.4	29.6	38.6	38.1	90.6	71.8
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> )	0.037	0.177	0.277	0.68	1.13	1.93	2.62	2.65	4.45	12.7
Mechanical time constant (ms)	0.75	0.80	0.53	0.73	0.62	1.72	1.20	0.74	0.61	1.11
Torque constant-KT (N-m/A)	0.36	0.41	0.49	0.49	0.47	0.65	0.75	0.44	0.53	0.557
Voltage constant-KE(mV/(r/min))	13.6	16	17.4	18.5	17.2	27.5	24.2	16.8	19.2	20.98
Armature resistance (Ohm)	9.30	2.79	1.55	0.93	0.42	1.34	0.897	0.20	0.13	0.0976
Armature inductance (mH)	24.0	12.07	6.71	7.39	3.53	7.55	5.7	1.81	1.50	1.21
Electrical time constant (ms)	2.58	4.3	4.3	7.96	8.36	5.66	6.35	9.3	11.4	12.4
Insulation class	Class A (UL), Class B (CE)									
Insulation resistance	100MΩ, DC 500V									
Insulation strength	AC 1500 V, 60 seconds									
Weight (kg) (without brake)	0.5	1.2	1.6	2.1	3.0	2.9	3.8	4.3	6.2	7.8
Weight (kg) (with brake)	0.8	1.5	2.0	2.9	3.8	3.69	5.5	4.7	7.2	9.2
Max. radial shaft load (N)	78.4	196	196	245	245	245	245	490	490	490
Max. thrust shaft load (N)	39.2	68	68	98	98	98	98	98	98	98
Power rating (kW/s) (with brake)	25.6	21.3	53.8	22.1	48.4	29.3	37.9	30.4	82	65.1
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	0.04	0.192	0.30	0.73	1.18	1.95	2.67	3.33	4.95	14.0
Mechanical time constant (ms) (with brake)	0.81	0.85	0.57	0.78	0.65	1.74	1.22	0.93	0.66	1.22
Brake holding torque [Nt-m (min)]	0.3	1.3	1.3	2.5	2.5	2.5	2.5	8	8	10.0
Brake power consumption (at 20°C) [W]	7.2	6.5	6.5	8.2	8.2	8.2	8.2	18.5	18.5	19.0
Brake release time [ms (Max)]	5	10	10	10	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	25	70	70	70	70	70	70	70	70	70
Vibration grade ( μm )	15									
Operating temperature ( °C )	0°C to 40°C (32°F to 104°F)									
Storage temperature ( °C )	-10°C to 80°C (-14°F to 176°F)									
Operating humidity	20 to 90%RH (non-condensing)									
Storage humidity	20 to 90%RH (non-condensing)									
Vibration capacity	2.5G									
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))									
Approvals	 									

Footnote:

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220



\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.

\*3 Please refer to page 13 for details about the model explanation.

# Servo Motor Specifications

## - Medium / High Inertia Series (Incremental)

### 220V Series

Model: ECMA Series	E△13			
	05	10	15	20
Rated output power (kW)	0.5	1.0	1.5	2.0
Rated torque (N-m) <sup>*1</sup>	2.39	4.77	7.16	9.55
Maximum torque (N-m)	7.16	14.32	21.48	28.65
Rated speed (r/min)	2000			
Maximum speed (r/min)	3000			
Rated current (A)	2.9	5.6	8.3	11.01
Maximum current (A)	8.7	16.8	24.81	33
Power rating (kW/s)	7.0	27.1	45.9	62.5
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (without brake)	8.17	8.41	11.18	14.59
Mechanical time constant (ms)	1.91	1.51	1.11	0.96
Torque constant-KT (N-m/A)	0.83	0.85	0.87	0.87
Voltage constant-KE (mV/(r/min))	30.9	31.9	31.8	31.8
Armature resistance (Ohm)	0.57	0.47	0.26	0.174
Armature inductance (mH)	7.39	5.99	4.01	2.76
Electrical time constant (ms)	12.96	12.88	15.31	15.86
Insulation class	Class A (UL), Class B (CE)			
Insulation resistance	100MΩ , DC 500V			
Insulation strength	AC 1500 V, 60 seconds			
Weight (kg) (without brake)	6.8	7	7.5	7.8
Weight (kg) (with brake)	8.2	8.4	8.9	9.2
Max. radial shaft load (N)	490	490	490	490
Max. thrust shaft load (N)	98	98	98	98
Power rating (kW/s) (with brake)	6.4	24.9	43.1	59.7
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	8.94	9.14	11.90	15.88
Mechanical time constant (ms) (with brake)	2.07	1.64	1.19	1.05
Brake holding torque [Nt-m (min)]	10.0	10.0	10.0	10.0
Brake power consumption (at 20°C) [W]	19.0	19.0	19.0	19.0
Brake release time [ms (Max)]	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70
Vibration grade ( μ m )	15			
Operating temperature ( °C )	0°C to 40°C (32°F to 104°F)			
Storage temperature ( °C )	-10°C to 80°C (-14°F to 176°F)			
Operating humidity	20 to 90%RH (non-condensing)			
Storage humidity	20 to 90%RH (non-condensing)			
Vibration capacity	2.5G			
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))			
Approvals	 			

Footnote:

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220



\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.

\*3 Please refer to page 13 for details about the model explanation.

# Servo Motor Specifications

## - Medium / High Inertia Series (Incremental)

### 220V Series

Model: ECMA Series	E△18			G△13		
	20	30	35	03	06	09
Rated output power (kW)	2.0	3.0	3.5	0.3	0.6	0.9
Rated torque (N-m) <sup>*1</sup>	9.55	14.32	16.71	2.86	5.73	8.59
Maximum torque (N-m)	28.65	42.97	50.13	8.59	17.19	21.48
Rated speed (r/min)	2000			1000		
Maximum speed (r/min)	3000			2000		
Rated current (A)	11.22	16.1	19.2	2.5	4.8	7.5
Maximum current (A)	33.66	48.3	57.6	7.44	14.49	22.5
Power rating (kW/s)	26.3	37.3	50.8	10.0	39.0	66.0
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (without brake)	34.68	54.95	54.95	8.17	8.41	11.18
Mechanical time constant (ms)	1.62	1.06	1.08	1.84	1.40	1.07
Torque constant-KT (N-m/A)	0.85	0.89	0.87	1.15	1.19	1.15
Voltage constant-KE (mV/(r/min))	31.4	32	32	42.5	43.8	41.6
Armature resistance (Ohm)	0.119	0.052	0.052	1.06	0.82	0.43
Armature inductance (mH)	2.84	1.38	1.38	14.29	11.12	6.97
Electrical time constant (ms)	23.87	26.39	26.39	13.55	13.55	16.06
Insulation class	Class A (UL), Class B (CE)					
Insulation resistance	100MΩ, DC 500V					
Insulation strength	AC 1500 V, 60 seconds					
Weight (kg) (without brake)	13.5	18.5	18.5	6.8	7	7.5
Weight (kg) (with brake)	17.5	22.5	22.5	8.2	8.4	8.9
Max. radial shaft load (N)	1176	1470	490	490	490	490
Max. thrust shaft load (N)	490	490	98	98	98	98
Power rating (kW/s) (with brake)	24.1	35.9	48.9	9.2	35.9	62.1
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	37.86	57.06	57.06	8.94	9.14	11.9
Mechanical time constant (ms) (with brake)	1.77	1.10	1.12	2.0	1.51	1.13
Brake holding torque [Nt-m (min)]	25.0	25.0	10.0	10.0	10.0	10.0
Brake power consumption (at 20°C) [W]	20.4	20.4	19.0	19.0	19.0	19.0
Brake release time [ms (Max)]	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70	70
Vibration grade (μm)	15					
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)					
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)					
Operating humidity	20 to 90%RH (non-condensing)					
Storage humidity	20 to 90%RH (non-condensing)					
Vibration capacity	2.5G					
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))					
Approvals	 					

Footnote:

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220



\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.

\*3 Please refer to page 13 for details about the model explanation.

# Servo Motor Specifications

## - Medium / Medium-High Inertia Series (Incremental)

### 220V Series

Model: ECMA Series	F△13	F△18				F△22	
	08	30	45	55	75	1B	1F
Rated output power (kW)	0.85	3.0	4.5	5.5	7.5	11	15
Rated torque (N-m) <sup>*1</sup>	5.41	19.10	28.65	35.01	47.74	70	95.4
Maximum torque (N-m)	13.8	57.29	71.62	87.53	119.36	175	224.0
Rated speed (r/min)	1500						
Maximum speed (r/min)	3000				2000		
Rated current (A)	7.4	19.4	32.5	40.0	47.5	51.8	61.5
Maximum current (A)	18.6	58.2	81.3	100.0	118.8	129.5	145.7
Power rating (kW/s)	20.8	66.4	105.5	122.9	159.7	148.9	164.6
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (without brake)	14.1	54.95	77.75	99.78	142.7	329	553
Mechanical time constant (ms)	2.73	1.28	0.92	0.96	0.63	1.36	1.23
Torque constant-KT (N-m/A)	0.73	0.98	0.88	0.88	1.01	1.35	1.55
Voltage constant-KE (mV/(r/min))	28.0	35.0	32.0	31.0	35.5	49	55.65
Armature resistance (Ohm)	0.38	0.077	0.032	0.025	0.015	0.026	0.018
Armature inductance (mH)	5.2	1.27	0.89	0.60	0.40	0.64	0.45
Electrical time constant (ms)	13.7	16.5	27.8	24.0	26.7	24.77	24.51
Insulation class	Class A (UL), Class B (CE)						
Insulation resistance	100MΩ, DC 500V						
Insulation strength	AC 1500 V, 60 seconds						
Weight (kg) (without brake)	8.6	18.5	23.5	30.5	37.0	56.4	86.4
Weight (kg) (with brake)	10.0	22.5	29	36	46	-	-
Max. radial shaft load (N)	490	1470	1470	1764	1764	3300	3300
Max. thrust shaft load (N)	98	490	490	588	588	1100	1100
Power rating (kW/s) (with brake)	19.3	63.9	101.8	119.4	156.6	-	-
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	15.2	57.06	80.65	102.70	145.55	-	-
Mechanical time constant (ms) (with brake)	2.73	1.33	0.96	0.99	0.64	-	-
Brake holding torque [Nt-m (min)]	10.0	25.0	25.0	25.0	25.0	115	115
Brake power consumption (at 20°C) [W]	19.0	20.4	20.4	20.4	20.4	28.8	28.8
Brake release time [ms (Max)]	10	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70	70	70
Vibration grade (μm)	15						
Operating temperature (°C)	0°C to 40°C (32°F to 104°F)						
Storage temperature (°C)	-10°C to 80°C (-14°F to 176°F)						
Operating humidity	20 to 90%RH (non-condensing)						
Storage humidity	20 to 90%RH (non-condensing)						
Vibration capacity	2.5G						
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))						
Approvals	 						

Footnote:

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220

\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.



\*3 To reach the motor's max. torque limit of 250%, use the servo drive with higher watts.

\*4 The application of UL safety compliance for ECMA-F11305, ECMA-F11308, ECMA-F11313, ECMA-F11318 is in process.

# Servo Motor Specifications

## - Medium / Low Inertia Series (Incremental)

### 400V Series

Model: ECMA Series	J108	J110		J113	K113			K118
	07	10	20	30	10	15	20	20
Rated output power (kW)	0.75	1.0	2.0	3.0	1.0	1.5	2.0	2.0
Rated torque (N-m) <sup>*1</sup>	2.39	3.18	6.37	9.55	4.77	7.16	9.55	9.55
Maximum torque (N-m)	7.16	9.54	19.1	28.65	14.32	21.48	28.65	28.65
Rated speed (r/min)	3000			3000	2000			
Maximum speed (r/min)	5000			4500	3000			
Rated current (A)	3.07	4.15	7.09	9.8	3.52	5.02	6.66	6.66
Maximum current (A)	9.5	12.46	21.28	29.99	10.56	15.06	19.98	19.98
Power rating (kW/s)	50.4	38.2	91.2	71.8	27.1	45.9	62.5	26.3
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (without brake)	1.13	2.65	4.45	12.7	8.41	11.18	14.59	34.68
Mechanical time constant (ms)	0.66	0.77	0.58	0.99	1.80	1.24	1.04	1.74
Torque constant-KT (N-m/A)	0.78	0.77	0.9	0.97	1.35	1.43	1.43	1.45
Voltage constant-KE (mV/(r/min))	28.24	29.0	34.4	37.3	53.2	55	55	54
Armature resistance (Ohm)	1.22	0.617	0.388	0.269	1.47	0.83	0.57	0.376
Armature inductance (mH)	10.68	6.03	4.62	3.55	17.79	11.67	8.29	7.87
Electrical time constant (ms)	8.75	9.77	11.9	13.2	12.04	14.04	14.39	20.9
Insulation class	Class A (UL) , Class B (CE)							
Insulation resistance	100MΩ , DC 500V							
Insulation strength	AC 1800 V, 60 seconds							
Weight (kg) (without brake)	3.0	4.3	6.2	7.8	7.0	7.5	7.8	13.5
Weight (kg) (with brake)	3.8	4.7	7.2	9.2	8.4	8.9	9.2	17.5
Max. radial shaft load (N)	245	490	490	490	490	490	490	1176
Max. thrust shaft load (N)	98	98	98	98	98	98	98	490
Power rating (kW/s) (with brake)	48.4	30.4	82	65.1	24.9	43.1	59.7	24.1
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	1.18	3.33	4.95	14.0	9.14	11.90	15.88	37.86
Mechanical time constant (ms) (with brake)	0.65	0.96	0.65	1.09	1.96	1.32	1.13	1.9
Brake holding torque [Nt-m (min)]	2.5	8	8	10.0	10.0	10.0	10.0	25.0
Brake power consumption (at 20°C) [W]	8.5	18.5	18.5	19.0	19.0	19.0	19.0	20.4
Brake release time [ms (Max)]	10	10	10	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70	70	70	70
Vibration grade ( μ m )	15							
Operating temperature ( °C )	0°C to 40°C (32°F to 104°F)							
Storage temperature ( °C )	-10°C to 80°C (-14°F to 176°F)							
Operating humidity	20 to 90%RH (non-condensing)							
Storage humidity	20 to 90%RH (non-condensing)							
Vibration capacity	2.5G							
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))							
Approvals	 							

Footnote:

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220



\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.

\*3 Please refer to page 13 for details about the model explanation.

# Servo Motor Specifications

## - Medium / High Inertia Series (Incremental)

### 400V Series

Model: ECMA Series	L118				L113
	30	45	55	75	08
Rated output power (kW)	3.0	4.5	5.5	7.5	0.85
Rated torque (N-m) <sup>*1</sup>	19.10	28.65	35.01	47.74	5.39
Maximum torque (N-m)	57.29	71.62	87.53	119.36	13.8
Rated speed (r/min)	1500				
Maximum speed (r/min)	3000				2000
Rated current (A)	11.53	20.8	22.37	27.3	35.7
Maximum current (A)	34.6	52	56	68.3	9.5
Power rating (kW/s)	66.4	105.5	122.9	159.7	17.0
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (without brake)	54.95	77.75	99.78	142.7	17.1
Mechanical time constant (ms)	1.11	0.94	0.88	0.77	1.91
Torque constant-KT (N-m/A)	1.66	1.38	1.56	1.75	1.51
Voltage constant-KE (mV/(r/min))	64.4	53	58.9	66.4	56.9
Armature resistance (Ohm)	0.21	0.09	0.07	0.06	0.914
Armature inductance (mH)	4.94	2.36	2.2	1.7	13.7
Electrical time constant (ms)	23.97	28.07	27.6	28.29	15.0
Insulation class	-----				Class A (UL), Class B (CE)
Insulation resistance	100MΩ, DC 500V				
Insulation strength	AC 1800 V, 50Hz, 60 seconds				AC 1500 V, 50Hz, 60 seconds
Weight (kg) (without brake)	18.5	23.5	30.5	37.0	8.6
Weight (kg) (with brake)	22.5	29	36	46	10
Max. radial shaft load (N)	1470	1470	1764	1764	490
Max. thrust shaft load (N)	490	490	588	588	98
Power rating (kW/s) (with brake)	63.9	101.8	119.4	156.6	15.0
Rotor moment of inertia (x10 <sup>-4</sup> kg-m <sup>2</sup> ) (with brake)	57.06	80.65	102.70	145.55	19.4
Mechanical time constant (ms) (with brake)	1.33	0.96	0.99	0.64	2.16
Brake holding torque [Nt-m (min)]	25.0	25.0	25.0	25.0	10.0
Brake power consumption (at 20°C) [W]	20.4	20.4	20.4	20.4	19.0
Brake release time [ms (Max)]	10	10	10	10	10
Brake pull-in time [ms (Max)]	70	70	70	70	70
Vibration grade ( μ m )	15				
Operating temperature ( °C )	0°C to 40°C (32°F to 104°F)				
Storage temperature ( °C )	-10°C to 80°C (-14°F to 176°F)				
Operating humidity	20 to 90%RH (non-condensing)				
Storage humidity	20 to 90%RH (non-condensing)				
Vibration capacity	2.5G				
IP Rating	IP65 (when waterproof connectors are used, or when an oil seal is used to be fitted to the rotating shaft (an oil seal model is used))				
Approvals	 				

**Footnote:**

\*1 Rate torque values are continuous permissible values at 0~40°C ambient temperature when attaching with the sizes of heatsinks listed below:

ECMA-\_\_04 / 06 / 08 : 250mm x 250mm x 6mm

ECMA-\_\_10 : 300mm x 300mm x 12mm

ECMA-\_\_13 : 400mm x 400mm x 20mm

ECMA-\_\_18 : 550mm x 550mm x 30mm

ECMA-\_\_22 : 650mm x 650mm x 30mm

Material type : Aluminum F40, F60, F80, F100, F130, F180, F220

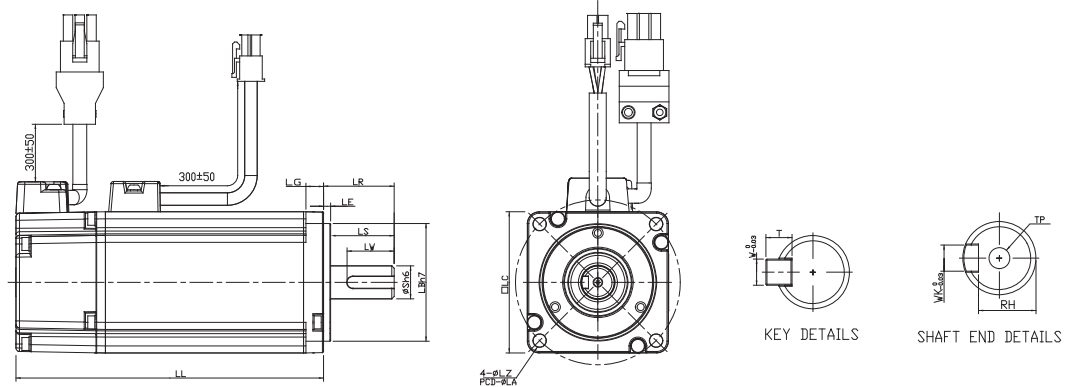
\*2 The holding brake is used to hold the motor shaft, not for braking the rotation. Never use it for decelerating or stopping the machine.

\*3 The application of UL safety compliance for ECMA-L11308 is in process.

# Servo Motor Dimensions

## 220V Series

Frame Size 86mm and below (Units: mm)



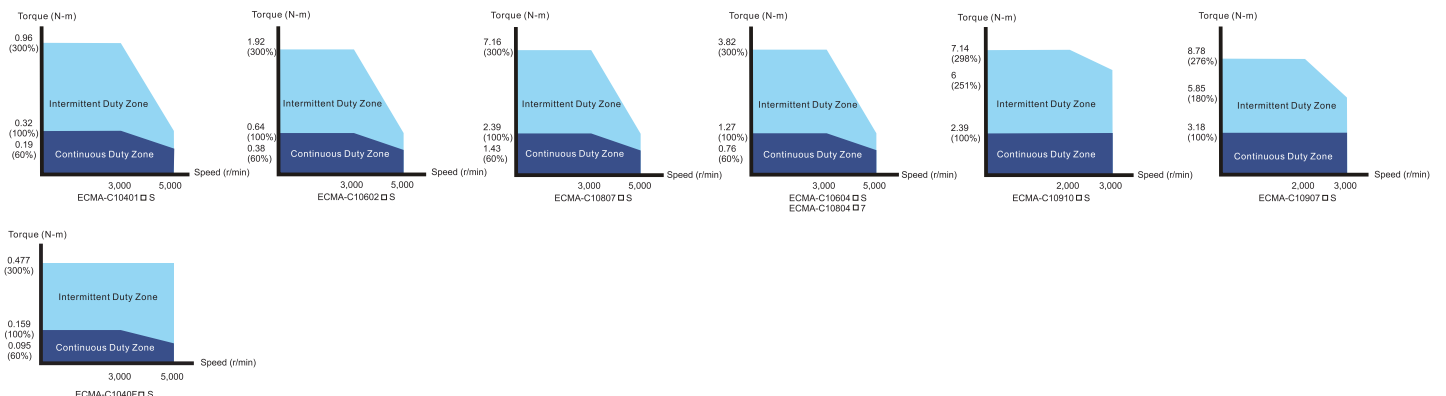
Model	C1040F□S	C△0401□S	C△0602□S	C△0604□S	C△0804□7	C△0807□S	C△0907□S	C△0910□S
LC	40	40	60	60	80	80	86	86
LZ	4.5	4.5	5.5	5.5	6.6	6.6	6.6	6.6
LA	46	46	70	70	90	90	100	100
S	8 <sup>(+0/-0.009)</sup>	8 <sup>(+0/-0.009)</sup>	14 <sup>(+0/-0.011)</sup>	14 <sup>(+0/-0.011)</sup>	14 <sup>(+0/-0.011)</sup>	19 <sup>(+0/-0.013)</sup>	16 <sup>(+0/-0.011)</sup>	16 <sup>(+0/-0.011)</sup>
LB	30 <sup>(+0/-0.021)</sup>	30 <sup>(+0/-0.021)</sup>	50 <sup>(+0/-0.025)</sup>	50 <sup>(+0/-0.025)</sup>	70 <sup>(+0/-0.030)</sup>	70 <sup>(+0/-0.030)</sup>	80 <sup>(+0/-0.030)</sup>	80 <sup>(+0/-0.030)</sup>
LL (W/O Brake)	79.1	100.6	105.5	130.7	112.3	138.3	130.2	153.2
LL (With Brake)	--	136.6	141.6	166.8	152.8	178	161.3	184.3
LS (W/O Oil Seal)	20	20	27	27	27	32	30	30
LS (With Oil Seal)	20	20	27	27	27	32	30	30
LR	25	25	30	30	30	35	35	35
LE	2.5	2.5	3	3	3	3	3	3
LG	5	5	7.5	7.5	8	8	8	8
LW	16	16	20	20	20	25	20	20
RH	6.2	6.2	11	11	11	15.5	13	13
WK	3	3	5	5	5	6	5	5
W	3	3	5	5	5	6	5	5
T	3	3	5	5	5	6	5	5
TP	--	M3 Depth 8	M4 Depth 15	M4 Depth 15	M4 Depth 15	M6 Depth 20	M5 Depth 15	M5 Depth 15



### NOTE

- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).
- 4) The boxes (△) in the model names are for encoder resolution types  
(△=1: Incremental encoder, 20-bit; △=2: Incremental encoder, 17-bit).

## Speed-Torque Curves (T-N Curves)

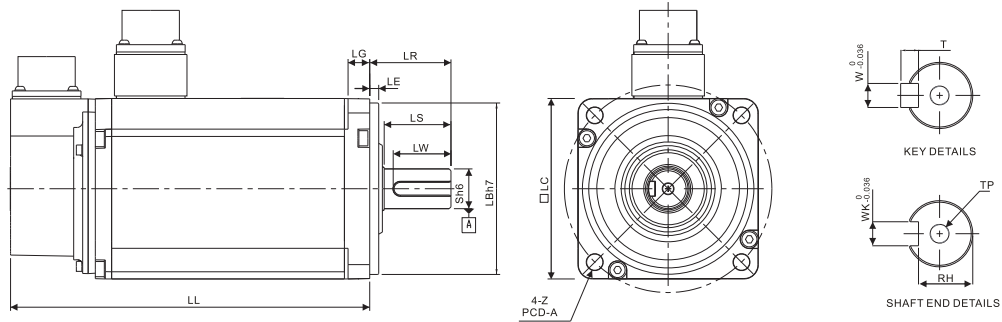




# Servo Motor Dimensions

## 220V Series

Frame Size 100mm and 130mm (Units: mm)

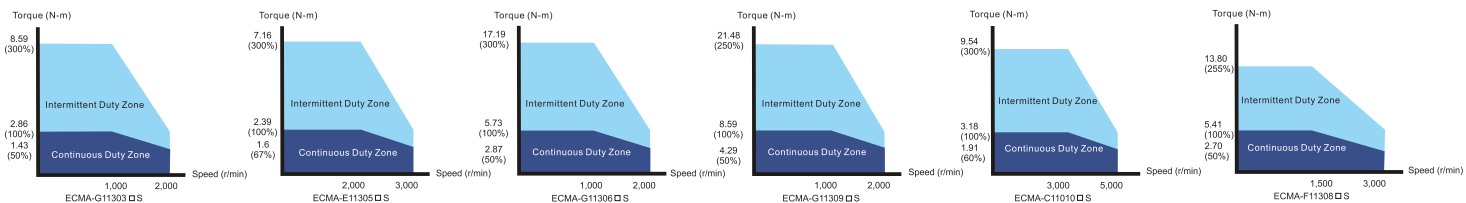


Model	G△1303□S	E△1305□S	G△1306□S	G△1309□S	F△1308□S	F△1010□S
LC	130	130	130	130	130	100
LZ	9	9	9	9	9	9
LA	145	145	145	145	145	115
S	22 <sup>(+0/-0.013)</sup>	22 <sup>(+0/-0.013)</sup>	22 <sup>(+0/-0.013)</sup>	22 <sup>(+0/-0.013)</sup>	22 <sup>(+0/-0.013)</sup>	22 <sup>(+0/-0.013)</sup>
LB	110 <sup>(+0/-0.035)</sup>	110 <sup>(+0/-0.035)</sup>	110 <sup>(+0/-0.035)</sup>	110 <sup>(+0/-0.035)</sup>	110 <sup>(+0/-0.035)</sup>	95 <sup>(+0/-0.035)</sup>
LL (W/O Brake)	147.5	147.5	147.5	163.5	152.5	153.3
LL (With Brake)	183.5	183.5	183.5	198	181	192.5
LS	47	47	47	47	47	37
LR	55	55	55	55	55	45
LE	6	6	6	6	6	5
LG	11.5	11.5	11.5	11.5	11.5	12
LW	36	36	36	36	36	32
RH	18	18	18	18	18	18
WK	8	8	8	8	8	8
W	8	8	8	8	8	8
T	7	7	7	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20



- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).
- 4) The boxes (△) in the model names are for encoder resolution types (△=1: Incremental encoder, 20-bit; △=2: Incremental encoder, 17-bit).

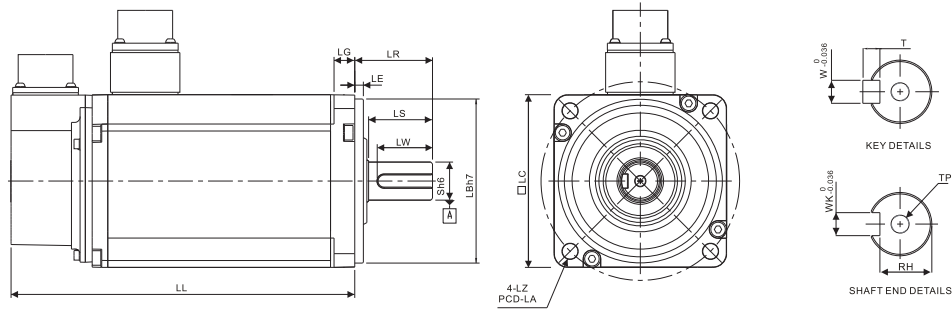
# Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 220V Series

Frame Size 100mm and 130mm (Units: mm)

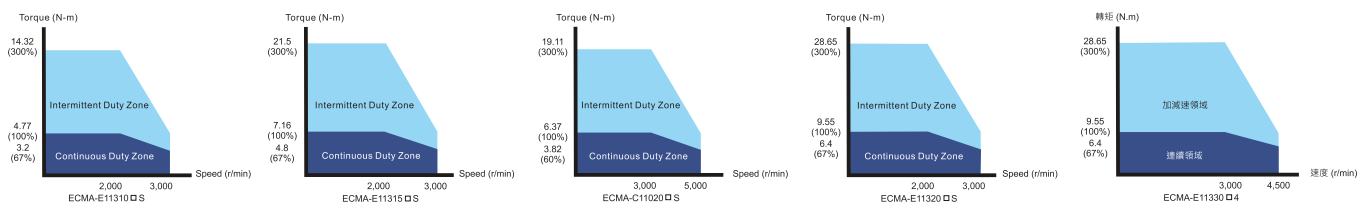


Model	E△1310□S	E△1315□S	C△1020□S	C△1330□4	E△1320□S
LC	130	130	100	130	130
LZ	9	9	9	9	9
LA	145	145	115	145	145
S	22 (+0/-0.013)	22 (+0/-0.013)	22 (+0/-0.013)	24 (+0/-0.013)	22 (+0/-0.013)
LB	110 (+0/-0.035)	110 (+0/-0.035)	95 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)
LL (W/O Brake)	147.5	167.5	199	187.5	187.5
LL (With Brake)	183.5	202	226	216.0	216
LS	47	47	37	47	47
LR	55	55	45	55	55
LE	6	6	5	6	6
LG	11.5	11.5	12	11.5	11.5
LW	36	36	32	36	36
RH	18	18	18	20	18
WK	8	8	8	8	8
W	8	8	8	8	8
T	7	7	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20



- NOTE**
- 1) Dimensions are in millimeters.
  - 2) Dimensions of the servo motors may be revised without prior notice.
  - 3) The boxes (□) in the model names are for optional configurations (keyway, brake and oil seal).
  - 4) The boxes (△) in the model names are for encoder resolution types (△=1: Incremental encoder, 20-bit; △=2: Incremental encoder, 17-bit).

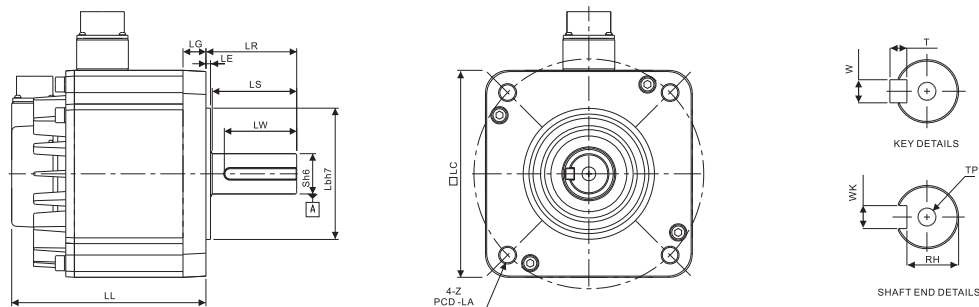
# Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 220V Series

Frame Size 180mm (Units: mm)



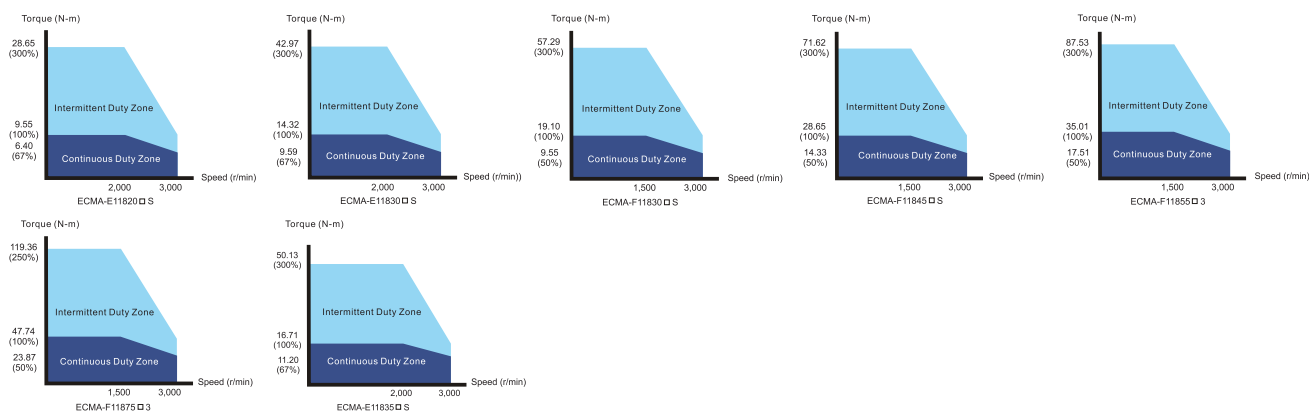
Model	E△1820□S	E△1830□S	E△1835□S	F△1830□S	F△1845□S	F△1855□3	F△1875□3
LC	180	180	180	180	180	180	180
LZ	13.5	13.5	13.5	13.5	13.5	13.5	13.5
LA	200	200	200	200	200	200	200
S	35 <sup>(+0/-0.016)</sup>	35 <sup>(+0/-0.016)</sup>	35 <sup>(+0/-0.016)</sup>	35 <sup>(+0/-0.016)</sup>	35 <sup>(+0/-0.016)</sup>	42 <sup>(+0/-0.016)</sup>	42 <sup>(+0/-0.016)</sup>
LB	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>	114.3 <sup>(+0/-0.035)</sup>
LL (W/O Brake)	169	202.1	202.1	202.1	235.3	279.7	342.0
LL (With Brake)	203.1	235.3	235.3	235.3	279.3	311.7	376.1
LS	73	73	73	73	73	108.5	108.5
LR	79	79	79	79	79	113	113
LE	4	4	4	4	4	4	4
LG	20	20	20	20	20	20	20
LW	63	63	63	63	63	90	90
RH	30	30	30	30	30	37	37
WK	10	10	10	10	10	12	12
W	10	10	10	10	10	12	12
T	8	8	8	8	8	8	8
TP	M12 Depth 25	M12 Depth 25	M12 Depth 25	M12 Depth 25	M12 Depth 25	M16 Depth 32	M16 Depth 32



### NOTE

- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations (keyway, brake and oil seal).
- 4) The boxes (△) in the model names are for encoder resolution types (△=1: Incremental encoder, 20-bit; △=2: Incremental encoder, 17-bit).

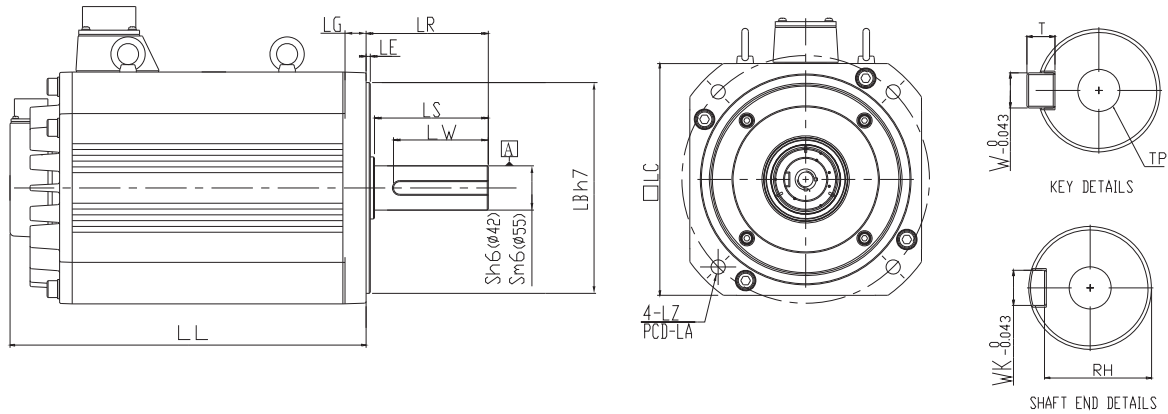
## Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 220V Series

Frame Size 220mm and above (Units: mm)

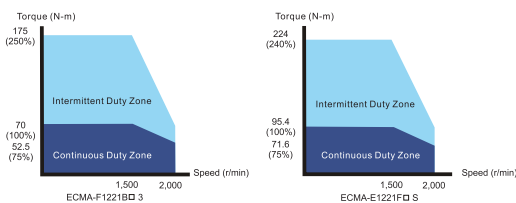


Model	F1221B□3	F1221F□S
LC	220	220
LZ	13.5	13.5
LA	235	235
S	42 (+0 / -0.016)	55 (+0.03 / -0.011)
LB	200 (+0 / -0.046)	200 (+0 / -0.046)
LL (W/O Brake)	338	457
LL (With Brake)	-	-
LS	108	108
LR	116	116
LE	4	4
LG	20	20
LW	90	90
RH	37	49
WK	12	16
W	12	16
T	8	10
TP	M16 Depth 32	M20 Depth 40



- NOTE**
- 1) Dimensions are in millimeters.
  - 2) Dimensions of the servo motors may be revised without prior notice.
  - 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

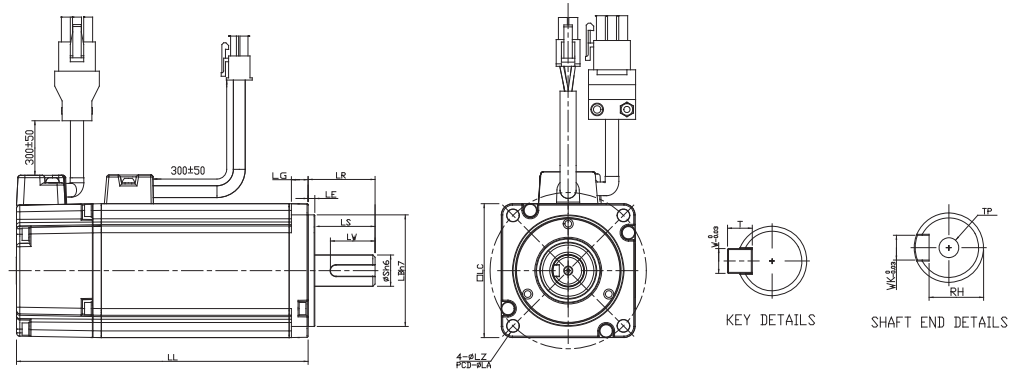
# Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 400V Series

Frame Size 80mm and below (Units: mm)

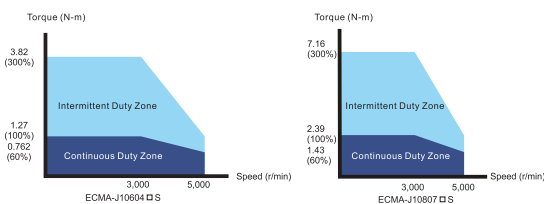


Model	J10604□S	J10807□S
LC	60	80
LZ	5.5	6.6
LA	70	90
S	14 <sup>(+0/-0.011)</sup>	19 <sup>(+0/-0.013)</sup>
LB	50 <sup>(+0/-0.025)</sup>	70 <sup>(+0/-0.030)</sup>
LL (W/O Brake)	130.7	138.3
LL (With Brake)	166.8	178
Ls (W/O Oil Seal)	27	32
Ls (With Oil Seal)	27	32
LR	30	35
LE	3	3
LE	7.5	8
LG	20	25
LW	11	15.5
RH	5	6
WK	5	6
W	5	6
T	M4	M6
TP	Depth 15	Depth 20



- 1) Dimensions are in millimeters.
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- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

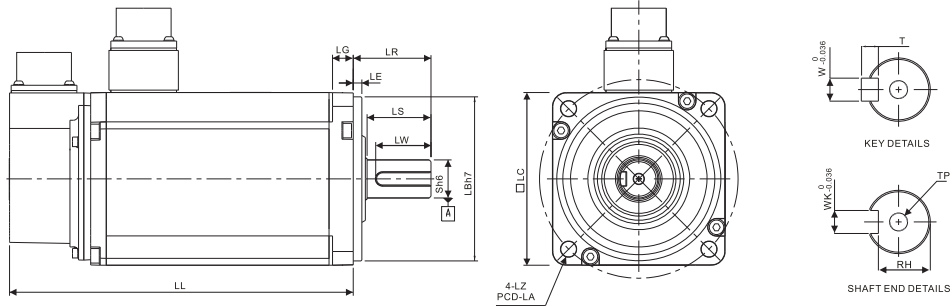
# Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 400V Series

### Frame Size 100mm and 130mm (Units: mm)



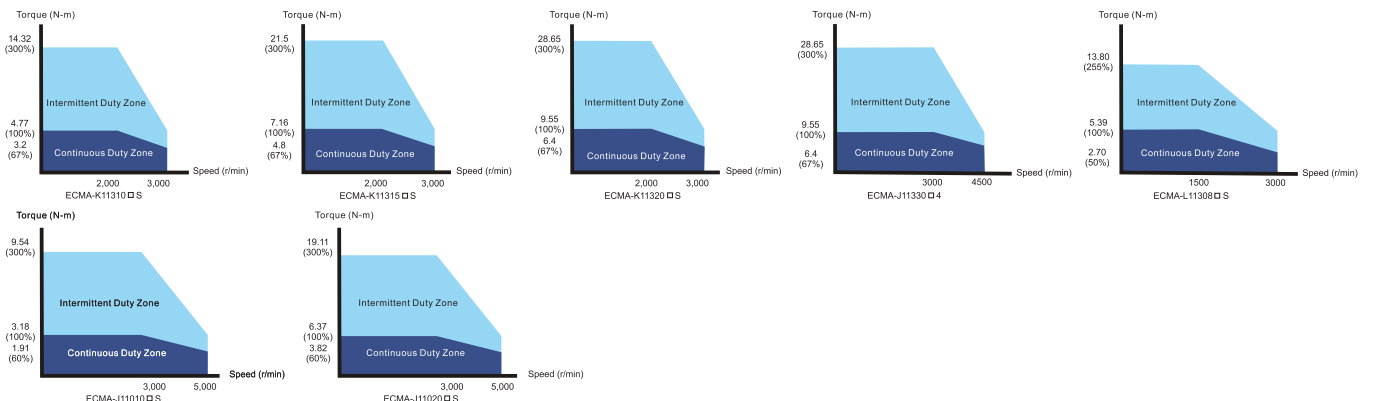
Model	J11010□S	J11020□S	J11330□4	K11310□S	K11315□S	K11320□S	L11308□S
LC	100	100	130	130	130	130	130
LZ	9	9	9	9	9	9	9
LA	115	115	145	145	145	145	145
S	22 (+0/-0.013)	22 (+0/-0.013)	24 (+0/-0.013)	22 (+0/-0.013)	22 (+0/-0.013)	22 (+0/-0.013)	22 (+0/-0.013)
LB	95 (+0/-0.035)	95 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)	110 (+0/-0.035)
LL (W/O Brake)	153.3	199	187.5	147.5	167.5	187.5	163.5
LL (With Brake)	192.5	226	216.0	183.5	202	216	198.0
LS	37	37	47	47	47	47	47
LR	45	45	55	55	55	55	55
LE	5	5	6	6	6	6	6
LG	12	12	11.5	11.5	11.5	11.5	11.5
LW	32	32	36	36	36	36	47
RH	18	18	20	18	18	18	18
WK	8	8	8	8	8	8	8
W	8	8	8	8	8	8	8
T	7	7	7	7	7	7	7
TP	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20	M6 Depth 20



#### NOTE

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- 3) The boxes (□) in the model names are for optional configurations(keyway, brake and oil seal).

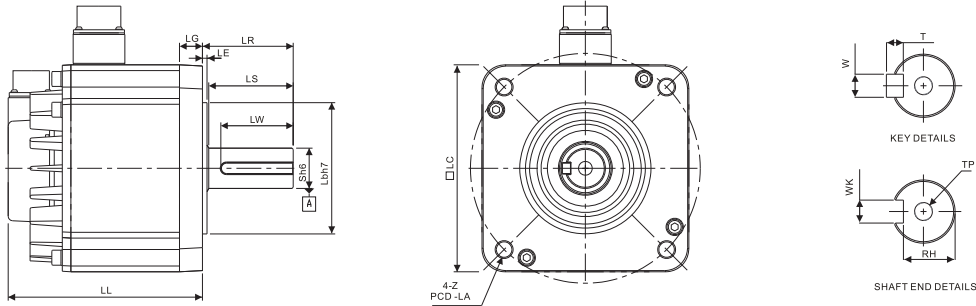
# Speed-Torque Curves (T-N Curves)



# Servo Motor Dimensions

## 400V Series

Frame Size 180mm and above (Units: mm)



Model	L△1830□S	L11845□S	L11855□3	L11875□3	K11820□S
LC	180	180	180	180	180
LZ	13.5	13.5	13.5	13.5	13.5
LA	200	200	200	200	200
S	35 (+0/-0.016)	35 (+0/-0.016)	42 (+0/-0.016)	42 (+0/-0.016)	35 (+0/-0.016)
LB	114.3 (+0/-0.035)	114.3 (+0/-0.035)	114.3 (+0/-0.035)	114.3 (+0/-0.035)	114.3 (+0/-0.035)
LL (W/O Brake)	202.1	235.3	279.7	342.0	169
LL (With Brake)	235.3	279.3	311.7	376.1	203.1
LS	73	73	108.5	108.5	73
LR	79	79	113	113	79
LE	4	4	4	4	4
LG	20	20	20	20	20
LW	63	63	90	90	63
RH	30	30	37	37	30
WK	10	10	12	12	10
W	10	10	12	12	10
T	8	8	8	8	8
TIP	M12 Depth 25	M12 Depth 25	M16 Depth 32	M16 Depth 32	M12 Depth 25



- 1) Dimensions are in millimeters.
- 2) Dimensions of the servo motors may be revised without prior notice.
- 3) The boxes (□) in the model names are for optional configurations (keyway, brake and oil seal).
- 4) The boxes (△) in the model names are for encoder resolution types (△=1: Incremental encoder, 20-bit; △=2: Incremental encoder, 17-bit).

## Speed-Torque Curves (T-N Curves)

