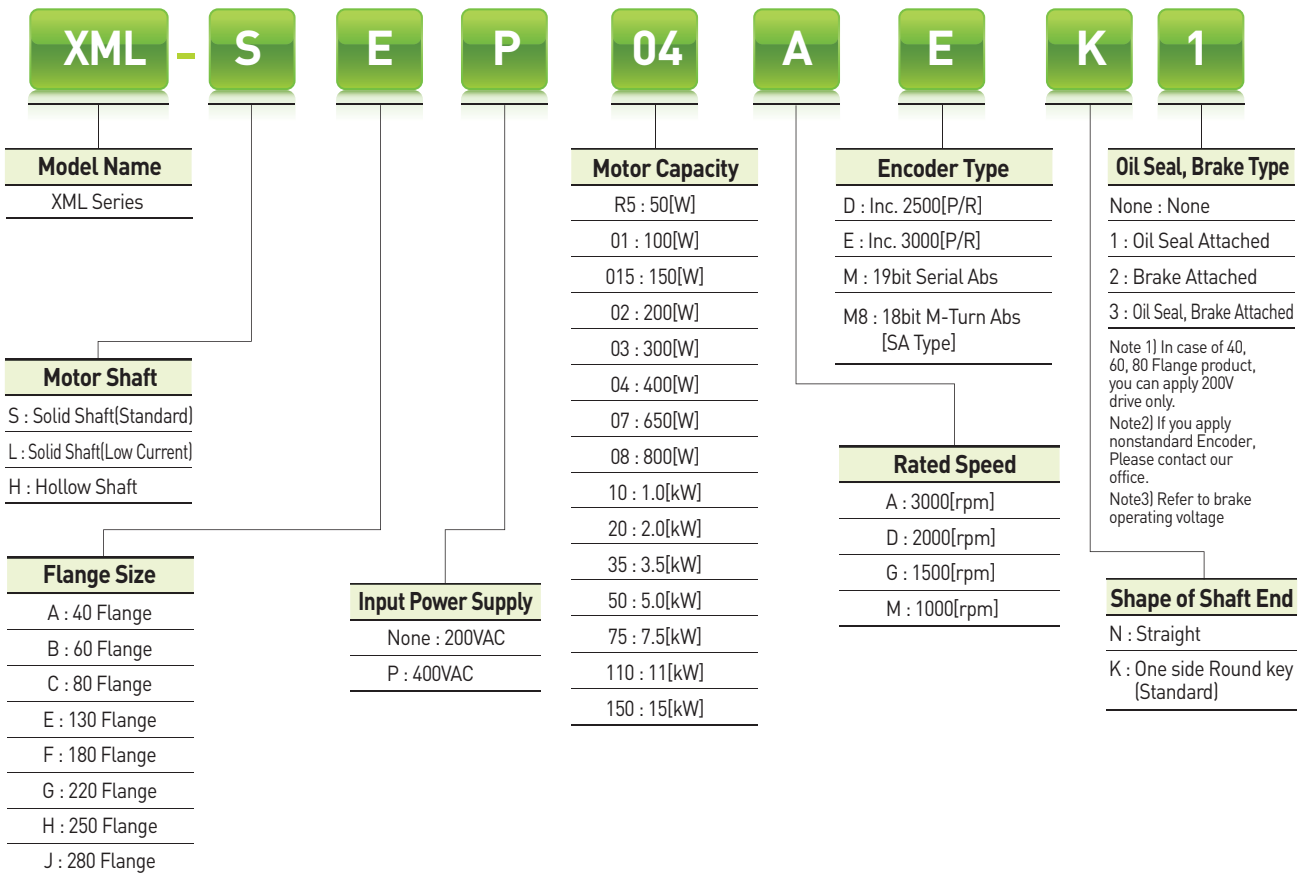


Servo Motor Designation

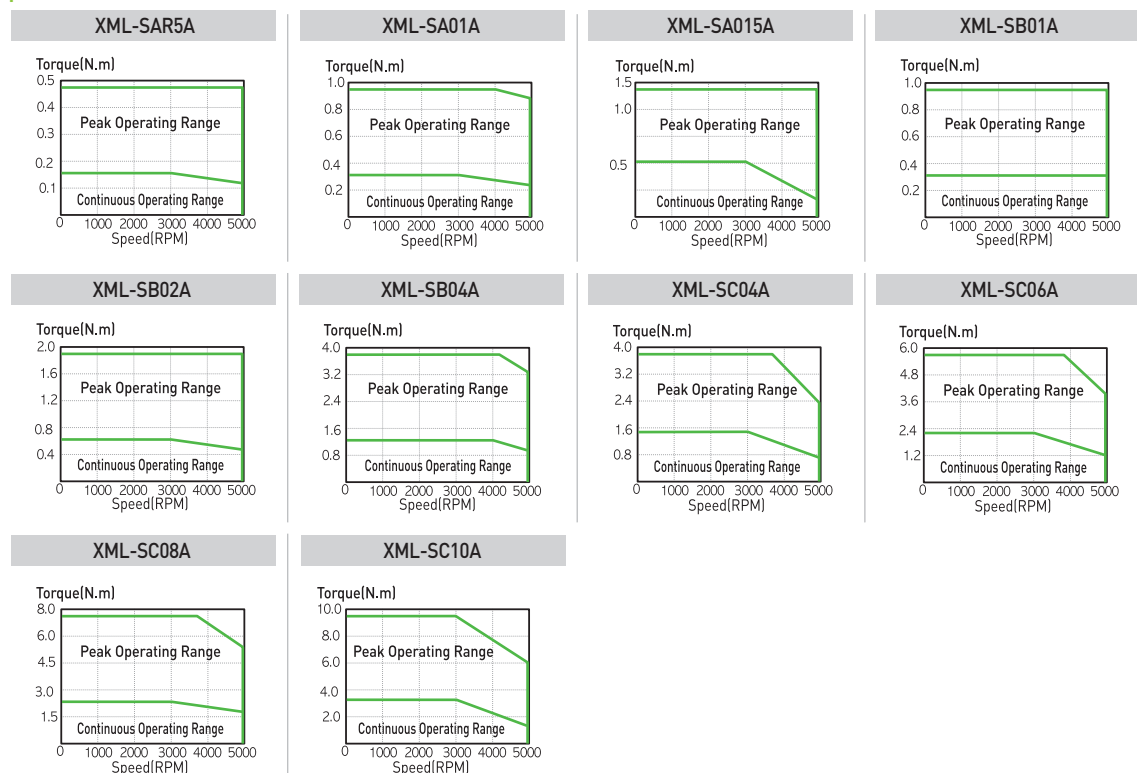


Motor Specifications [Rated 3000r/min]

Servo Motor (XML-□□□□)		SAR5A	SA01A	SA015A	SB01A	SB02A	SB04A	SC04A	SC06A	SC08A	SC10A
Applicable Drive (L7□A□□)		L7□A001			L7□A002		L7□A004		L7□A008		L7□A010
Flange Size(□)		□40			□60		□60		□80		
Rated Output	[kW]	0.05	0.1	0.15	0.1	0.2	0.4	0.4	0.6	0.8	1
	[N · m]	0.16	0.32	0.48	0.32	0.64	1.27	1.27	1.91	2.55	3.19
Rated Torque	[kgf · cm]	1.62	3.25	4.87	3.25	6.49	12.99	12.99	19.49	25.98	32.48
	[N · m]	0.48	0.96	1.43	0.96	1.91	3.82	3.82	5.73	7.64	9.56
Max. Instantaneous	[kgf · cm]	4.87	9.74	14.62	9.74	19.48	38.96	38.96	58.47	77.95	97.43
	[A]	1.2	1.38	1.73	1.65	1.63	2.89	2.82	3.58	4.83	5.37
Rated Current	[A]	3.6	4.14	5.19	4.95	4.89	8.67	8.46	10.74	14.49	16.11
Rated Speed	[r/min]	3000									
Max. Speed	[r/min]	5000									
Inertia	[kg · m ² × 10 ⁻⁴]	0.02	0.05	0.06	0.11	0.18	0.32	0.67	1.09	1.51	1.93
	[gf · cm · s ²]	0.02	0.05	0.07	0.12	0.19	0.33	0.69	1.11	1.54	1.97
Allowable Load Inertia Ratio		30 times of motor inertia			20 times of motor inertia		15 times of motor inertia				
Rated Power Rate	[kW/s]	10.55	23.78	35.34	8.89	22.26	50.49	24.05	33.39	43.02	52.57
Speed/Position Detector	Standard <small>Note1</small>	Quad.Type Incremental 2048[P/R]			Quad.Type Incremental 3000[P/R]						
	Option	Serial Type 18[Bit]			Serial Type 19[Bit]						
Specifications & Features	Structure	Fully closed · Self cooling IP55 <small>Note1</small>					Fully closed · Self cooling IP65 <small>Note1</small>				
	Rated Time	Continuous									
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]									
	Ambient Humidity	20 ~ 80[%] (avoid dew-condensation)									
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.									
	E/V	Elevation/vibration 49[m/s ²][5G]									
Weight	[kg]	0.38	0.5	0.7	0.82	1.08	1.58	1.88	2.52	3.15	3.80

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

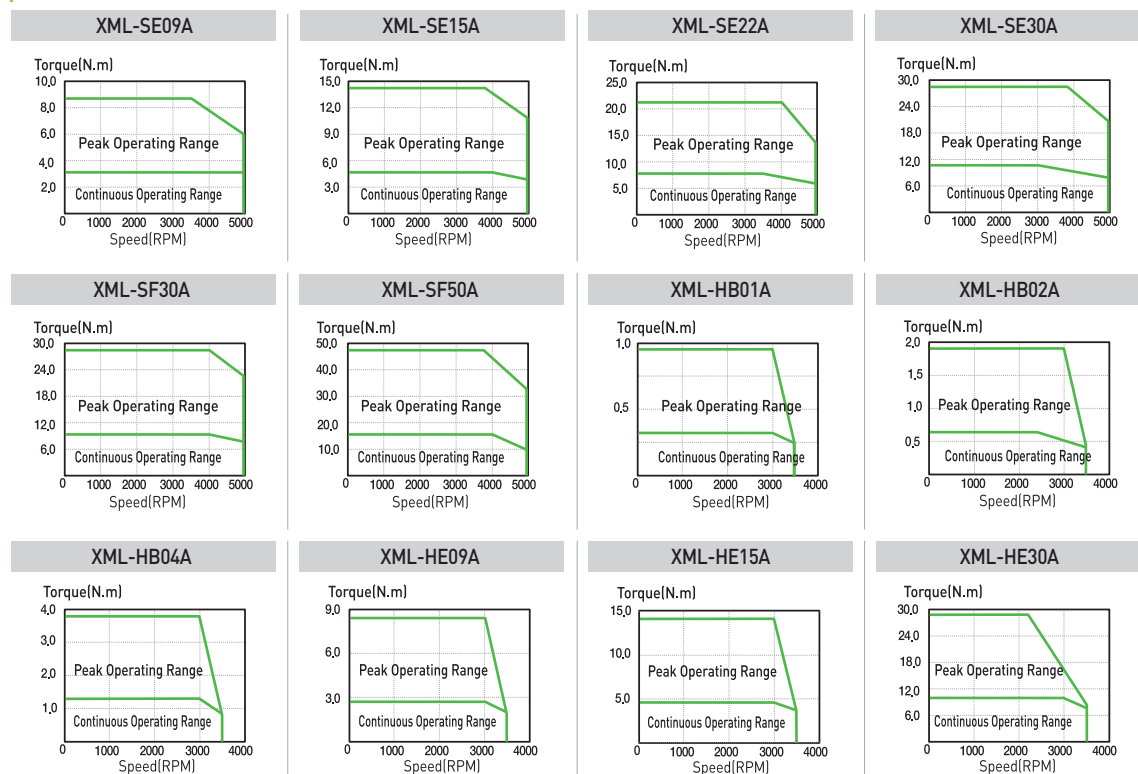


Motor Specifications [Rated 3000r/min]

Servo Motor (XML-□□□□)		SE09A	SE15A	SE22A	SE30A	SF30A	SF50A	HB01A	HB02A	HB04A	HE09A	HE15A	HE30A
Applicable Drive (L7□A□□)		L7□A008	L7□A020	L7□A050	L7□A035	L7□A050	L7□A002	L7□A004	L7□A008	L7□A020	L7□A050	L7□A008	L7□A050
Flange Size(□)		□130			□180			□60			□130		
Rated Output	[kW]	0.9	1.5	2.2	3	3	5	0.1	0.2	0.4	0.9	1.5	3
Rated Torque	[N · m]	2.86	4.77	7	9.55	9.55	15.91	0.32	0.64	1.27	2.86	4.77	9.55
	[kgf · cm]	29.23	48.72	71.45	97.43	97.43	162.38	3.25	6.49	12.99	29.23	48.72	97.43
Max. Instantaneous	[N · m]	8.59	14.32	21.01	28.64	28.64	47.74	0.96	1.91	3.82	8.59	14.32	28.64
	[kgf · cm]	87.69	146.15	214.35	292.29	292.29	487.15	9.74	19.48	38.96	87.69	146.15	292.29
Rated Current	[A]	4.95	8.23	11.98	17.16	16.7	27.4	1.65	1.63	2.89	4.95	8.23	17.16
Max.Current	[A]	14.85	24.69	35.94	51.48	50.1	82.2	4.95	4.89	8.67	14.85	24.69	51.48
Rated Speed	[r/min]	3000											
Max. Speed	[r/min]	5000						3500			3500		
Inertia	[kg · m ² X10 ⁻⁴]	6.66	12	17.34	22.68	30.74	52.13	0.27	0.33	0.46	19.56	22.27	31.81
	[gf · cm · s ²]	6.8	12.24	17.69	23.14	31.37	53.19	0.27	0.34	0.47	19.96	22.72	32.46
Allowable Load Inertia Ratio		10 times of motor inertia				5 times of motor inertia		20 times of motor inertia			10 times of motor inertia		
Rated Power Rate	[kW/s]	12.32	18.99	28.28	40.20	29.66	48.58	3.34	11.98	34.47	4.10	10.01	22.03
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]						Quad.Type Incremental 1024[P/R]			Quad.Type Incremental 2048[P/R]		
	Option	Serial Type 19[Bit]						X					
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1						Fully closed · Self cooling IP55 Note1					
	Rated Time	Continuous											
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]											
	Ambient Humidity	90[%]RH Below [avoid dew-condensation]											
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.											
	E/V	Elevation/vibration 49[m/s ²][5G]											
Weight	[kg]	5.5	7.5	9.7	11.8	12.4	17.7	0.9	1.2	1.7	5.8	7.4	

Note1 Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

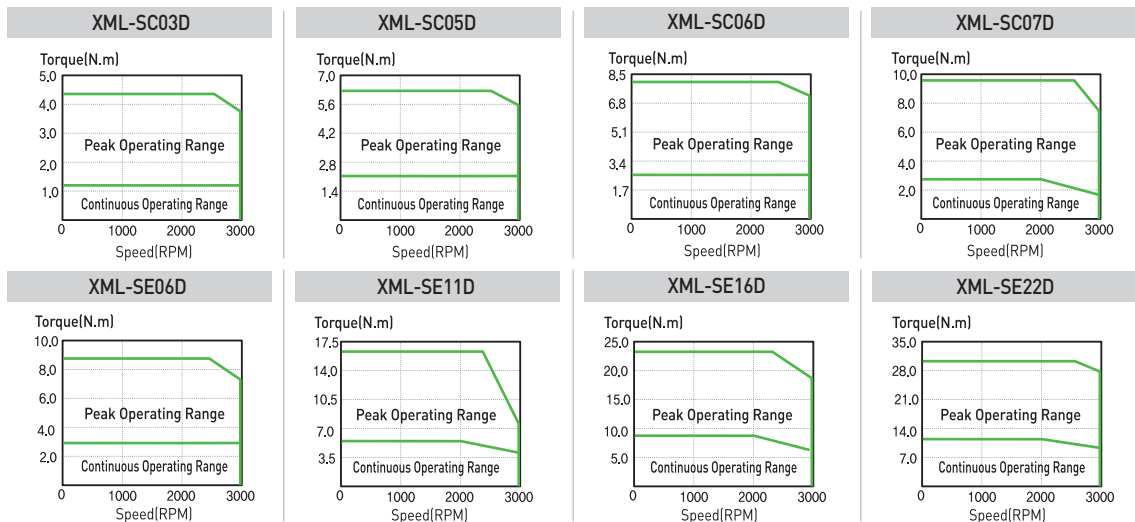


Motor Specifications [Rated 2000r/min]

Servo Motor (XML-□□□□)		SC03D	SC05D	SC06D	SC07D	SE06D	SE11D	SE16D	SE22D	
Applicable Drive (L7□A□□)		L7□A004	L7□A008			L7□A008	L7□A010	L7□A020		
Flange Size(□)		□80				□130				
Rated Output	[kW]	0.3	0.45	0.55	0.65	0.6	1.1	1.6	2.2	
	[N · m]	1.43	2.15	2.63	3.1	2.86	5.25	7.64	10.5	
Rated Torque	[kgf · cm]	14.61	21.92	26.79	31.66	29.23	53.59	77.94	107.17	
	[N · m]	4.3	6.45	7.88	9.31	8.59	15.75	22.92	31.51	
Max. Instantaneous	[kgf · cm]	43.84	65.77	80.38	94.99	87.69	160.76	233.83	321.52	
	[A]	2.59	3.23	3.82	4.42	3.97	6.28	9.23	12.37	
Max.Current	[A]	7.77	9.69	11.46	13.26	11.91	18.84	27.69	37.11	
Rated Speed	[r/min]	2000								
Max. Speed	[r/min]	3000								
Inertia	[kg · m ² × 10 ⁻⁴]	0.67	1.09	1.51	1.93	6.66	12	17.34	22.68	
	[gf · cm · s ²]	0.69	1.11	1.54	1.97	6.8	12.24	17.69	23.14	
Allowable Load Inertia Ratio		15 times of motor inertia				10 times of motor inertia				
Rated Power Rate	[kW/s]	30.43	42.27	45.69	49.97	12.32	22.98	33.65	48.64	
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]								
	Option	Serial Type 19[Bit]								
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1								
	Rated Time	Continuous								
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]								
	Ambient Humidity	90[%]RH Below [avoid dew-condensation]								
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.								
	E/V	Elevation/vibration 49[m/s ²][5G]								
Weight	[kg]	1.9	2.5	3.2	3.9	5.5	7.5	9.7	11.8	

Note1 Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

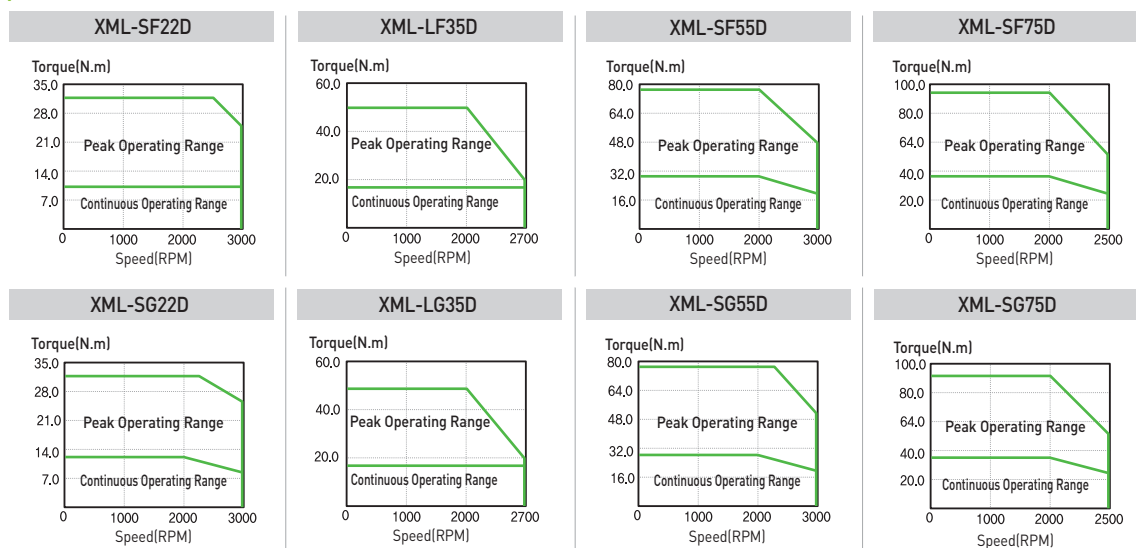


Motor Specifications [Rated 2000r/min]

Servo Motor (XML-□□□□)		SF22D	LF35D	SF55D	SF75D	SG22D	LG35D	SG55D	SG75D
Applicable Drive (L7□A□□)		L7□A020	L7□A035	L7□A050	L7□A075	L7□A020	L7□A035	L7□A050	L7□A075
Flange Size(□)		□ 180				□ 220			
Rated Output	[kW]	2.2	3.5	5.5	7.5	2.2	3.5	5.5	7.5
	[N · m]	10.5	16.71	26.26	35.81	10.5	16.71	26.26	35.81
Rated Torque	[kgf · cm]	107.17	170.5	267.93	365.36	107.2	170.52	267.9	365.4
	[N · m]	31.51	50.13	78.77	89.51	31.51	50.13	78.77	89.51
Max. Instantaneous	[kgf · cm]	321.52	511.51	803.8	913.41	321.52	511.51	803.8	913.4
	[N · m]	13.5	15.85	30.25	34.6	12.3	16.05	30.25	38
Rated Current	[A]	40.5	47.55	90.75	86.5	36.9	48.15	90.75	102
Rated Speed	[r/min]	2000							
Max. Speed	[r/min]	3000			2500	3000			2500
	[kg · m ² × 10 ⁻⁴]	30.74	52.13	83.6	121.35	51.42	80.35	132.41	172.91
Inertia	[gf · cm · s ²]	31.35	53.16	85.31	123.74	52.47	81.99	135.11	176.44
	Allowable Load Inertia Ratio	5 times of motor inertia							
Rated Power Rate	[kW/s]	35.88	53.56	82.56	105.75	21.45	34.75	52.07	74.15
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]							
	Option	Serial Type 19[Bit]							
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1							
	Rated Time	Continuous							
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]							
	Ambient Humidity	90[%]RH Below (avoid dew-condensation)							
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.							
	E/V	Elevation/vibration 49[m/s ²][5G]							
Weight	[kg]	12.4	17.7	26.3	35.6	17	22	30.8	37.5

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

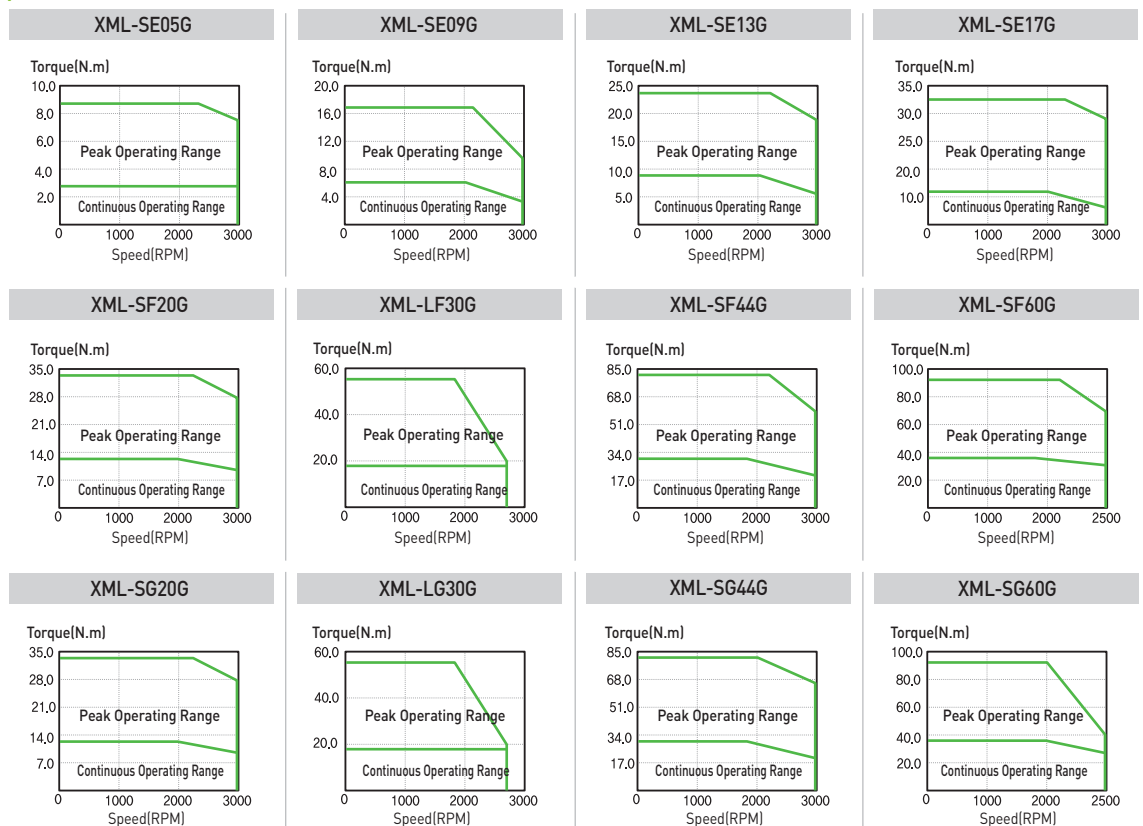


Motor Specifications [Rated 1500r/min]

Servo Motor (XML-□□□□)		SE05G	SE09G	SE13G	SE17G	SF20G	LF30G	SF44G	SF60G	SG20G	LG30G	SG44G	SG60G
Applicable Drive (L7□A□□)		L7□A008	L7□A010	L7□A020		L7□A035		L7□A050	L7□A075	L7□A020	L7□A035	L7□A050	L7□A075
Flange Size(□)		□130				□180				□220			
Rated Output	[kW]	0.45	0.85	1.3	1.7	1.8	2.9	4.4	6	1.8	2.9	4.4	6
	[N·m]	2.86	5.41	8.28	10.82	11.46	18.46	28.01	38.19	11.46	18.46	28.01	38.19
Rated Torque	[kgf·cm]	29.23	55.21	84.44	110.42	116.92	188.37	285.8	389.7	116.92	188.37	285.8	389.7
	[N·m]	8.59	16.23	24.83	32.46	34.37	55.38	84.02	95.48	34.47	55.38	84.02	95.48
Max. Instantaneous	[kgf·cm]	87.69	165.63	253.32	331.26	350.75	565.1	857.39	974.3	350.8	565.1	857.39	974.3
	[A]	3.97	6.47	10	12.75	14.7	15.92	31.75	38	13.1	16.19	31.5	38
Rated Current	[A]	11.91	19.41	30	38.25	44.1	47.64	95.25	102	39.3	48.57	94.5	102
Rated Speed	[r/min]	1500											
Max. Speed	[r/min]	3000				3000	2700	3000	2500	3000	2700	3000	2500
Inertia	[kg·m ² X10 ⁻⁴]	6.66	12	17.34	22.68	30.74	52.13	83.6	121.35	51.42	80.35	132.41	172.91
	[gf·cm·s ²]	6.8	12.24	17.69	23.14	31.37	53.19	85.31	123.83	52.47	81.99	135.11	176.44
Allowable Load Inertia Ratio		10 times of motor inertia					5 times of motor inertia						
Rated Power Rate	[kW/s]	12.32	24.4	39.49	51.63	42.71	65.37	93.83	120.21	25.53	42.41	59.24	84.36
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]											
	Option	Serial Type 19[Bit]											
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1											
	Rated Time	Continuous											
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]											
	Ambient Humidity	90[%]RH Below [avoid dew-condensation]											
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.											
	E/V	Elevation/vibration 49[m/s ²][5G]											
Weight	[kg]	5.5	7.5	9.7	11.8	12.4	17.7	26.3	35.6	17	22	30.8	37.52

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

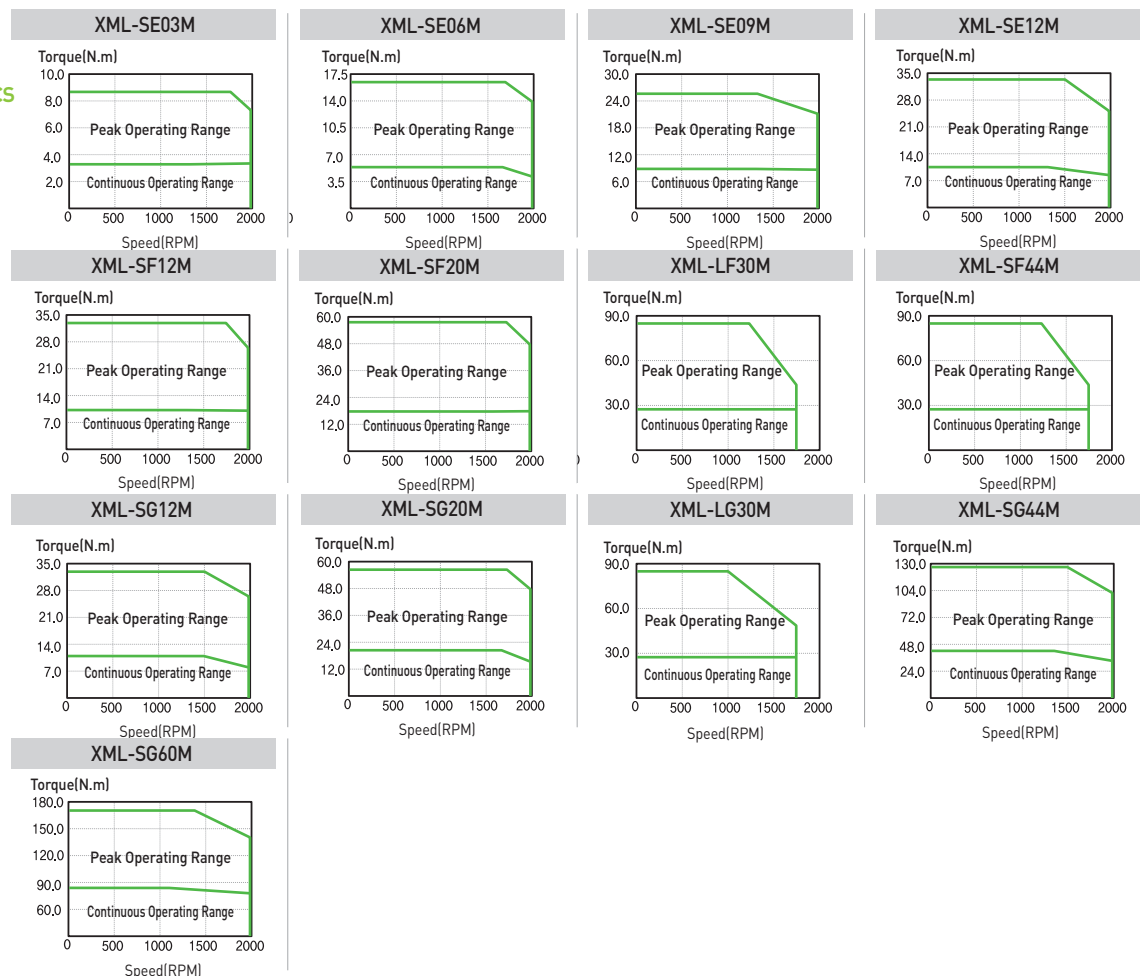


Motor Specifications [Rated 1000r/min]

Servo Motor [XML-□□□□]	SE03M	SE06M	SE09M	SE12M	SF12M	SF20M	LF30M	SF44M	SG12M	SG20M	LG30M	SG44M	SG60M	
Applicable Drive [L7□A□□]	L7□A004	L7□A008	L7□A010	L7□A020	L7□A035	L7□A050	L7□A020	L7□A035	L7□A050	L7□A035	L7□A050	L7□A075		
Flange Size[□]	□ 130				□ 180				□ 220					
Rated Output [kW]	0.3	0.6	0.9	1.2	1.2	2	3	4.4	1.2	2	3	4.4	6	
Rated Torque	[N · m]	2.86	5.73	8.59	11.46	11.46	19.1	28.64	42.01	11.46	19.1	28.64	42.01	57.29
	[kgf · cm]	29.23	58.46	87.69	116.92	116.92	194.86	292.29	428.69	116.92	194.86	292.29	428.69	584.6
Max. Instantaneous	[N · m]	8.59	17.19	25.78	34.37	34.37	57.29	85.93	126.04	34.37	57.29	85.93	126.04	171.87
	[kgf · cm]	87.69	175.3	263.06	350.75	350.75	584.58	876.88	1286.08	350.75	584.58	876.88	1286.08	1753.80
Rated Current [A]	2.51	4.15	5.78	7.63	8.4	14.4	15.99	31.24	8.87	15.02	16.04	31.83	38	
Max. Current [A]	7.53	12.45	17.34	22.89	25.2	43.2	47.97	93.72	26.61	45.06	48.12	95.49	102	
Rated Speed [r/min]	1000													
Max. Speed [r/min]	2000				1700			2000			1700		2000	
Inertia	[kg · m ² × 10 ⁻⁴]	6.66	12	17.34	22.68	30.74	52.13	83.6	121.35	51.42	80.35	132.41	172.91	291.36
	[gf · cm · s ²]	6.8	12.24	17.69	23.14	31.37	53.19	85.31	123.83	52.47	81.99	135.11	176.44	297.31
Allowable Load Inertia Ratio	10 times of motor inertia						5 times of motor inertia							
Rated Power Rate [kW/s]	12.32	27.35	42.59	57.89	42.71	69.95	98.15	145.45	25.53	45.39	61.97	102.08	112.65	
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]												
	Option	Serial Type 19[Bit]												
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1												
	Rated Time	Continuous												
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]												
	Ambient Humidity	90[%]RH Below (avoid dew-condensation)												
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.												
	E/V	Elevation/vibration 49[m/s ²][5G]												
Weight [kg]	5.5	7.5	9.7	11.8	12.4	17.7	26.3	35.6	17	22	30.8	37.5	66.2	

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics

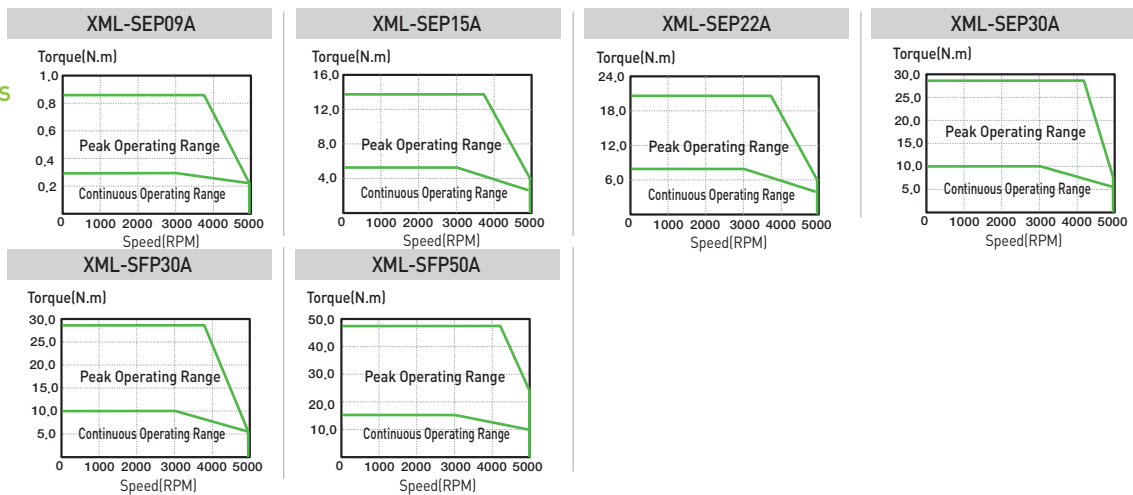


Motor Specifications [Rated 3000r/min]

Servo Motor (XML-□□□□)		SEP09A	SEP15A	SEP22A	SEP30A	SFP30A	SFP50A
Applicable Drive (L7□A□□□)		L7□B010	L7□B020		L7□B035		L7□B050
Flange Size(□)		□130				□180	
Rated Output	[kW]	0.9	1.5	2.2	3	3	5
Rated Torque	[N · m]	2.86	4.77	7	9.55	9.55	15.92
	[kgf · cm]	29.23	48.72	71.46	97.44	97.44	162.4
Max. Instantaneous	[N · m]	8.59	14.32	21.01	28.65	28.65	39.79
	[kgf · cm]	87.7	146.16	214.37	292.33	292.33	406.01
Rated Current	[A]	2.97	4.89	7.17	9.78	9.37	15.49
Max. Current	[A]	8.62	14.2	20.84	28.41	27.38	45.27
Rated Speed	[r/min]	3000					
Max. Speed	[r/min]	5000					
Inertia	[kg · m ² X10 ⁻⁴]	6.659	11.999	17.339	22.679	30.74	52.13
	[gf · cm · s ²]	6.795	12.244	17.693	23.142	31.367	53.194
Allowable Load Inertia Ratio		10 times of motor inertia				5 times of motor inertia	
Rated Power Rate	[kW/s]	12.32	19.00	28.28	40.21	42.71	65.37
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]					
	Option	Serial Type 19[Bit]					
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1					
	Rated Time	Continuous					
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]					
	Ambient Humidity	90[%]RH Below (avoid dew-condensation)					
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.					
	E/V	Elevation/vibration 49[m/s ²][5G]					
Weight	[kg]	5.5	7.54	9.68	11.78	12.4	17.7

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics



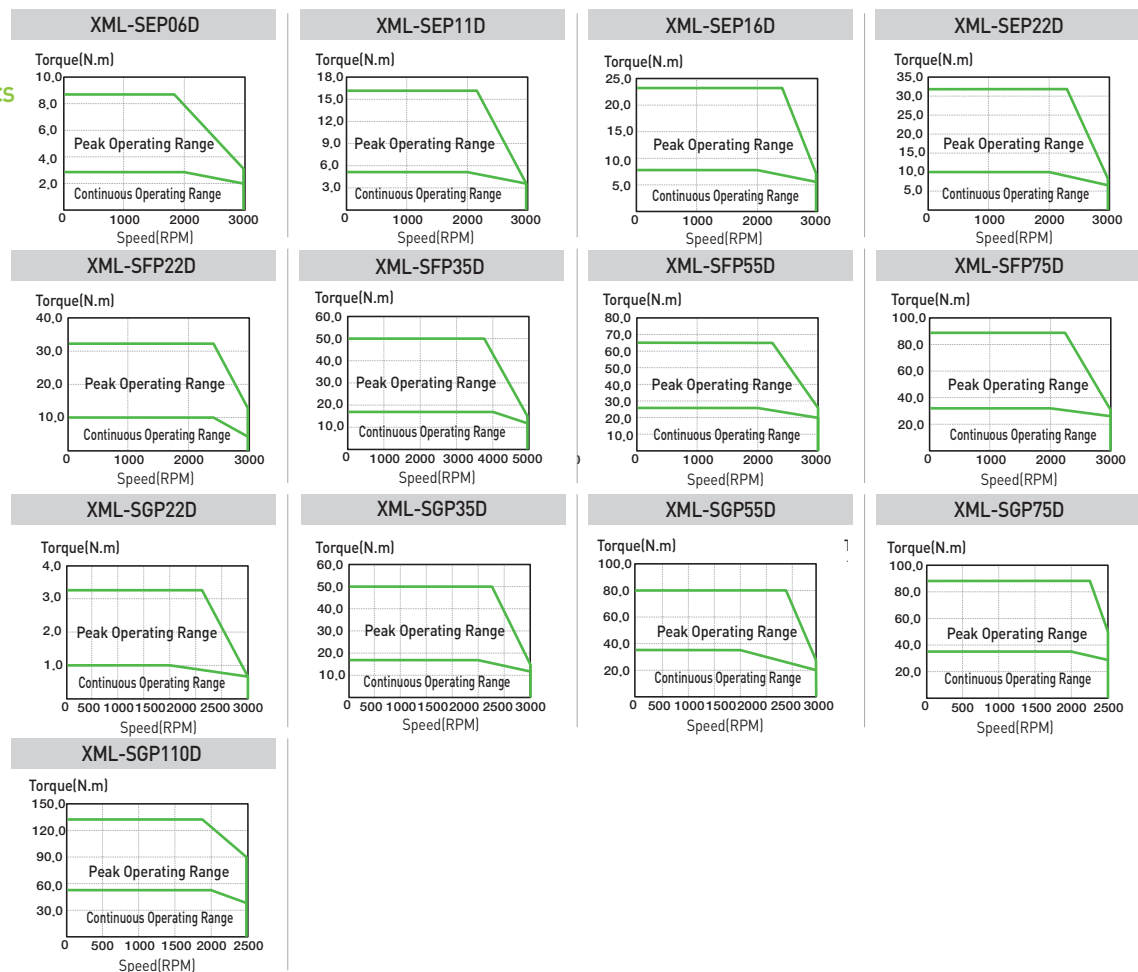
Servo Motor

Motor Specifications [Rated 2000r/min]

Servo Motor (XML-□□□□)	SEP06D	SEP11D	SEP16D	SEP22D	SFP22D	SFP35D	SFP55D	SFP75D	SGP22D	SGP35D	SGP55D	SGP75D	SGP110D
Applicable Drive (L7□A□□)	L7□B010		L7□B020		L7□B035	L7□B050	L7□B075	L7□B020	L7□B035	L7□B050	L7□B075	L7□B150	
Flange Size(□)	□130				□180				□220				
Rated Output [kW]	0.6	1.1	1.6	2.2	2.2	3.5	5.5	7.5	2.2	3.5	5.5	7.5	11
Rated Torque [N·m]	2.86	5.25	7.64	10.5	10.5	16.71	26.26	35.81	10.50	16.71	26.26	35.81	52.52
[kgf·cm]	29.23	53.59	77.95	107.19	107.19	170.52	267.96	365.41	107.19	170.52	267.96	365.41	535.93
Max. Instantaneous [N·m]	8.59	15.76	22.92	31.51	31.51	50.13	65.65	89.52	31.51	50.13	78.78	89.52	131.30
[kgf·cm]	87.7	160.78	233.86	321.56	321.56	511.57	669.91	913.52	321.56	511.57	803.89	913.52	1339.82
Rated Current [A]	1.78	3.27	4.79	6.54	6.56	10.07	15.82	21.36	6.27	10.03	15.66	18.42	27.41
Max. Current [A]	5.18	9.5	13.92	19	19.17	29.43	38.64	52.16	18.43	29.51	46.08	45.25	67.33
Rated Speed [r/min]	2000												
Max. Speed [r/min]	3000											2500	
Inertia [kg·m ² ×10 ⁻⁴]	6.659	11.999	17.339	22.679	30.74	52.13	83.6	121.35	51.42	80.35	132.41	172.91	291.36
[gf·cm·s ²]	6.795	12.244	17.693	23.142	31.367	53.194	85.306	123.827	52.47	81.99	135.11	176.44	297.10
Allowable Load Inertia Ratio	10 times of motor inertia					5 times of motor inertia							
Rated Power Rate [kW/s]	12.32	22.99	48.64	91.96	35.89	53.57	82.49	105.67	21.46	34.76	52.08	74.16	94.65
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]											
	Option	Serial Type 19[Bit]											
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1											
	Rated Time	Continuous											
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]											
	Ambient Humidity	90[%]RH Below (avoid dew-condensation)											
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.											
	E/V	Elevation/vibration 49[m/s ²](5G)											
Weight [kg]	5.5	7.54	9.68	11.78	12.4	17.7	26.3	35.6	16.95	21.95	30.8	37.52	66.2

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics



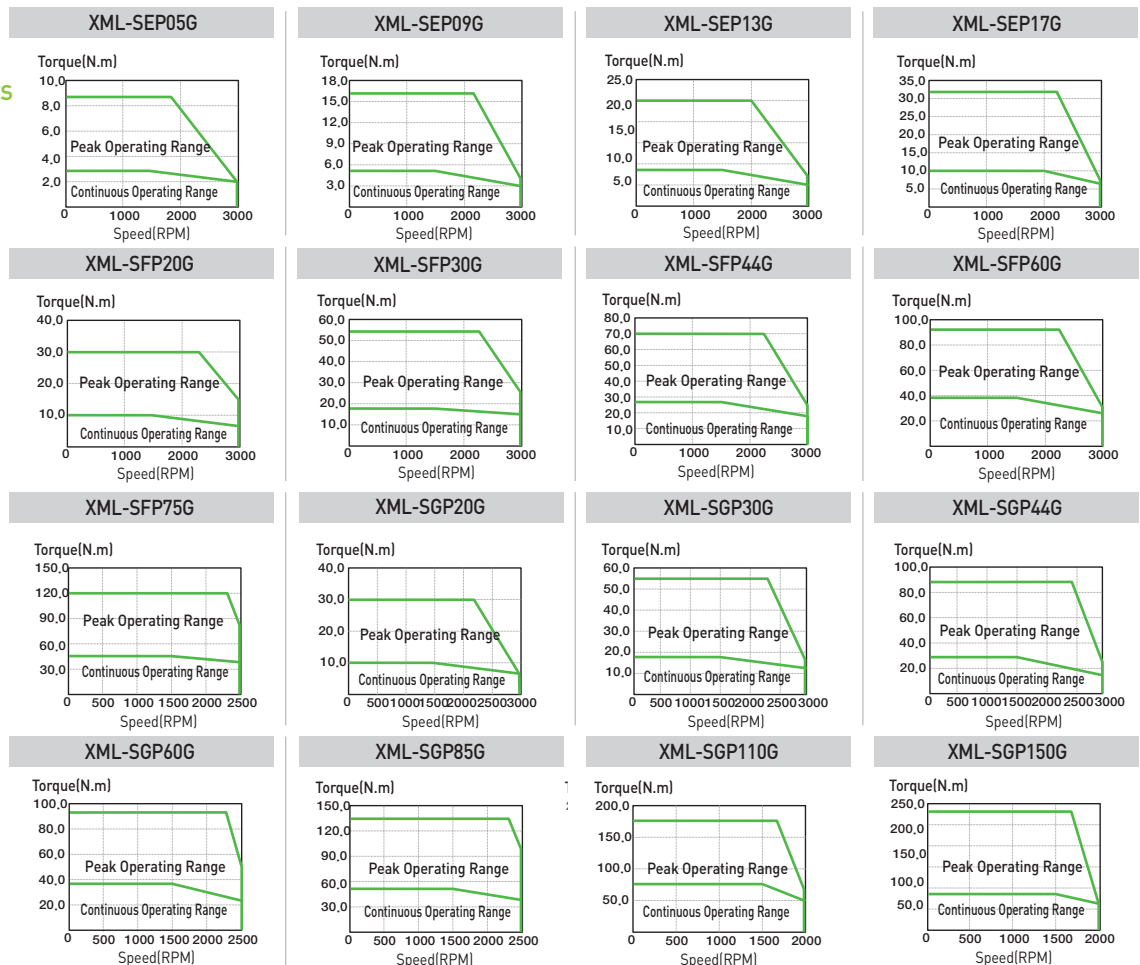
Motor Specifications [Rated 1500r/min]

Servo Motor (XML-□□□□)	SEP05G	SEP09G	SEP13G	SEP17G	SEP20G	SFP30G	SFP44G	SFP60G	SFP75G	SGP20G	SGP30G	SGP44G	SGP60G	SGP85G	SGP110G	SGP150G	
Applicable Drive (L7□A□□)	L7□B010		L7□B020		L7□B020	L7□B050		L7□B075	L7□B150	L7□B020	L7□B050		L7□B075	L7□B150			
Flange Size(□)	□ 130				□ 180					□ 220							
Rated Output [kW]	0.45	0.85	1.3	1.7	1.8	2.9	4.4	6	7.5	1.8	2.9	4.4	6	8.5	11	15	
Rated Torque	[N · m]	2.86	5.41	8.28	10.82	11.46	18.46	28.01	38.2	47.75	11.46	18.46	28.01	38.2	54.11	70.03	95.49
	[kgf · cm]	29.23	55.22	84.45	110.43	116.43	188.39	285.83	389.77	487.21	116.93	188.39	285.83	389.77	552.17	714.57	974.42
Max. Instantaneous	[N · m]	8.59	16.23	24.83	32.47	34.38	55.39	70.03	95.49	119.37	34.38	55.39	70.03	95.49	135.28	175.07	219.6
	[kgf · cm]	87.7	165.65	253.35	331.3	350.79	565.16	714.57	974.42	1218.02	350.79	565.16	714.57	974.42	1380.43	1786.43	2240
Rated Current [A]	1.78	3.37	5.19	6.74	7.15	11.12	16.87	22.78	28.13	6.84	11.08	16.71	19.65	28.24	28.28	35.71	
Max. Current [A]	5.18	9.79	15.07	19.58	20.91	165.9	41.21	55.64	65.7	20.11	33	49.15	48.23	69.37	68.83	87.7	
Rated Speed [r/min]	1500																
Max. Speed [r/min]	3000				2500					3000			2500		2000		
Inertia	[kg · m ² X 10 ⁻⁴]	6.659	11.999	17.339	22.679	30.74	52.13	83.6	121.35	143.82	51.42	80.35	132.41	172.91	291.36	291.36	385.54
	[gf · cm · s ²]	6.795	12.244	17.693	23.142	31.367	53.194	85.306	123.827	146.755	52.47	81.99	135.11	176.44	297.31	297.1	393.14
Allowable Load Inertia Ratio	10 times of motor inertia								5 times of motor inertia								
Rated Power Rate [kW/s]	12.32	24.4	57.08	97.61	42.72	65.38	93.86	120.23	158.51	25.531	42.41	59.25	84.36	100.5	168.3	214.8	
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]															
	Option	Serial Type 19[Bit]															
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1															
	Rated Time	Continuous															
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]															
	Ambient Humidity	90[%]RH Below (avoid dew-condensation)															
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.															
	E/V	Elevation/vibration 49[m/s ²][5G]															
Weight [kg]	5.5	7.54	9.68	11.78	12.4	17.7	26.3	35.6	39.4	16.95	21.95	30.8	37.52	66.2	66.3	92.2	

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Servo Motor

Speed-Torque Characteristics

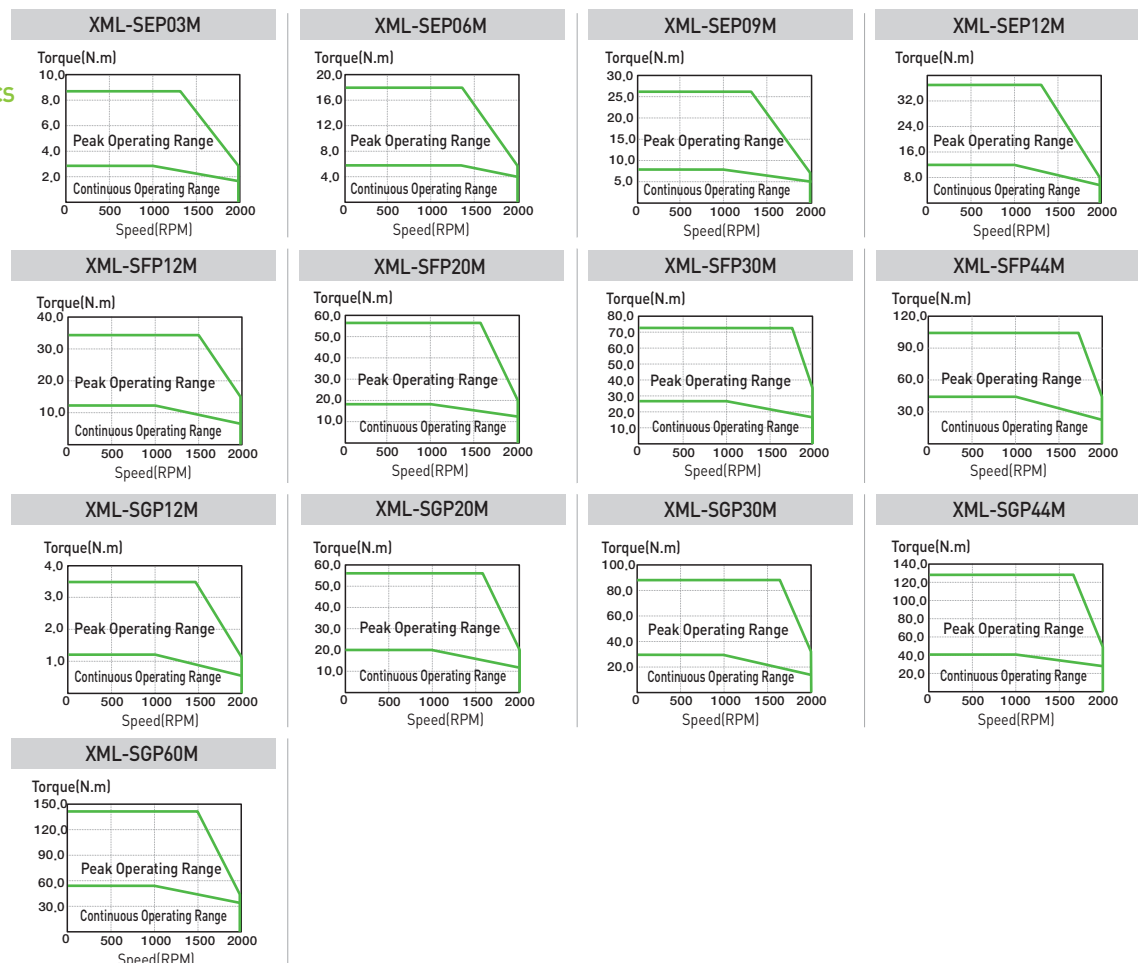


Motor Specifications [Rated 1000r/min]

Servo Motor [XML-□□□□]	SEP03M	SEP06M	SEP09M	SEP12M	SFP12M	SFP20M	SFP30M	SFP44M	SGP12M	SGP20M	SGP30M	SGP44M	SGP60M	
Applicable Drive [L7□A□□]	L7□B010			L7□B035	L7□B020		L7□B050		L7□B020		L7□B050		L7□B150	
Flange Size[□]	□ 130				□ 180				□ 220					
Rated Output [kW]	0.3	0.6	0.9	1.2	1.2	2	3	4.4	1.2	2	3	4.4	6	
Rated Torque	[N · m]	2.86	5.73	8.59	11.46	11.46	19.1	28.65	42.02	11.46	19.1	28.65	42.02	57.3
	[kgf · cm]	29.23	58.47	87.7	116.93	116.93	194.88	292.33	428.74	116.93	194.88	292.33	428.74	584.65
Max. Instantaneous	[N · m]	8.59	17.19	25.78	34.38	34.38	57.3	71.62	105.04	34.38	57.3	85.94	105.04	143.24
	[kgf · cm]	87.7	175.4	263.09	350.79	350.79	584.65	730.81	1,074.86	350.79	584.65	876.98	1,071.86	1,461.63
Rated Current [A]	1.26	2.42	3.62	4.8	4.77	7.88	11.92	17.15	4.72	7.84	11.73	17.29	23.58	
Max. Current [A]	3.65	7.04	10.51	13.95	13.94	23.03	29.12	41.88	13.87	23.06	34.51	50.87	57.92	
Rated Speed [r/min]	1000													
Max. Speed [r/min]	2000													
Inertia	[kg · m ² × 10 ⁻⁴]	6.659	11.999	17.339	22.679	30.71	52.13	83.6	121.35	51.42	80.35	132.41	172.91	291.36
	[gf · cm · s ²]	6.795	12.444	17.693	23.142	31.367	53.194	85.306	123.827	52.47	81.99	135.11	176.44	297.31
Allowable Load Inertia Ratio	10 times of motor inertia						5 times of motor inertia							
Rated Power Rate [kW/s]	12.32	27.36	42.6	57.9	42.72	69.97	98.17	145.48	25.53	45.39	61.97	102.08	112.64	
Speed/Position Detector	Standard Note1	Quad. Type Incremental 3000[P/R]												
	Option	Serial Type 19[Bit]												
Specifications & Features	Structure	Fully closed · Self cooling IP65 Note1												
	Rated Time	Continuous												
	Ambient Temp	Operating : 0 ~ 40[°C] Storage : -10 ~ 60[°C]												
	Ambient Humidity	90[%]RH Below [avoid dew-condensation]												
	Atmosphere	Avoid direct sunlight, no corrosive gas, inflammable gas, oil mist, or dust.												
	E/V	Elevation/vibration 49[m/s ²][5G]												
Weight [kg]	5.5	7.54	9.68	11.78	12.4	17.7	26.3	35.6	16.95	21.95	30.8	37.52	66.2	

Note1) Except for axis penetration, when you attach reducer to the motor, we don't guarantee IP for reducer. If you bend over specification designated in cable standard, it is difficult to guarantee IP marked. It can be satisfied protection grade when you use private cable only.

Speed-Torque Characteristics



SA Series

Plug Specifications



Spec.: 172167-1
(Made by AMP)

Power

Pin No.	Color	Signal
1	Red	U
2	White	V
3	Black	W
4	Green	Ground

(Power Connector Pin Table)

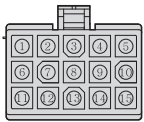


Spec.: 172165-1
(Made by AMP)

Brake

Pin No.	Signal
1	BK+
2	BK-

(Brake Connector Pin Table)

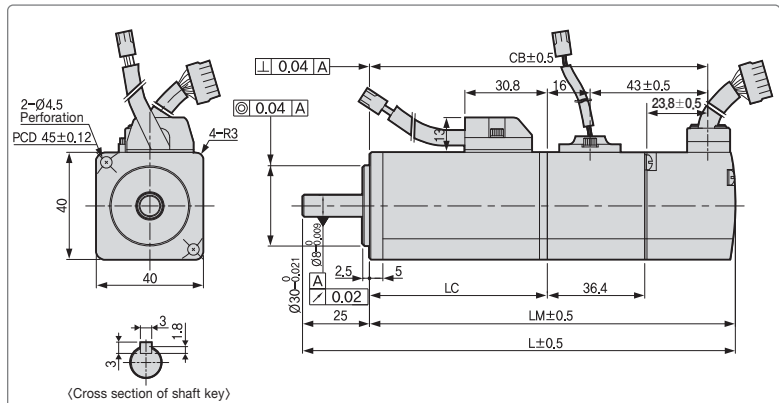


Spec.: 172165-1
(Made by AMP)

Encoder

Pin No.	Signal	Pin No.	Signal
1	A	9	V
2	A	10	V
3	B	11	W
4	B	12	W
5	Z	13	+5V
6	Z	14	0V
7	U	15	SHIELD
8	U		

(Parallel Encoder Connector Pin Table)



Model	External Dimensions(mm)				Weight(kg)
	L	LM	LC	CB	
SAR3A	101.3(137.6)	76.3(112.6)	42.5(42.4)	66.3(102.3)	0.32(0.67)
SAR5A	108.3(144.6)	83.3(119.6)	49.5(49.4)	73.3(109.3)	0.38(0.73)
SA01A	125.3(161.6)	100.3(136.6)	66.5(66.4)	90.3(126.6)	0.5(0.85)
SA015A	145.3	120.3	86.5	110.3	0.7

Note1) Use DC[24V] for brake input power supply. Note2) The () is for brake-attached type. Note3) For external dimensions for oil-sealed type. Please kindly contact us separately.
Note4) Refer to page 74 for serial encoder pin table.

SB Series

Plug Specifications



Spec.: 172167-1
(Made by AMP)

Power

Pin No.	Color	Signal
1	Red	U
2	White	V
3	Black	W
4	Green	Ground

(Power Connector Pin Table)

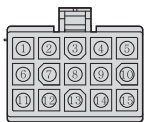


Spec.: 172165-1
(Made by AMP)

Brake

Pin No.	Signal
1	BK+
2	BK-

(Brake Connector Pin Table)

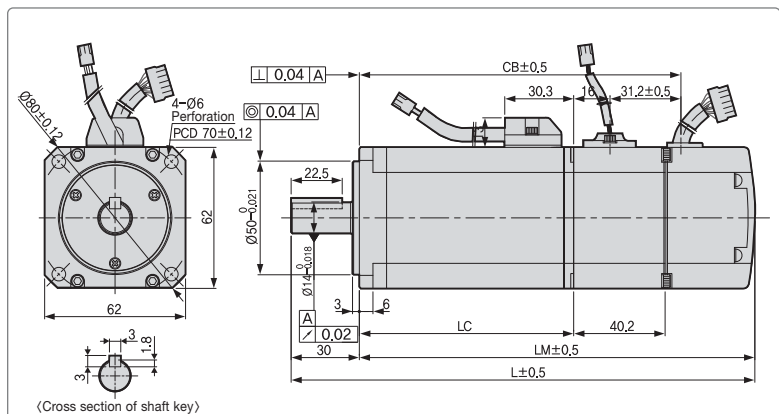


Spec.: 172171-1
(Made by AMP)

Encoder

Pin No.	Signal	Pin No.	Signal
1	A	9	V
2	A	10	V
3	B	11	W
4	B	12	W
5	Z	13	+5V
6	Z	14	0V
7	U	15	SHIELD
8	U		

(Parallel Encoder Connector Pin Table)



Model	External Dimensions(mm)				Weight(kg)
	L	LM	LC	CB	
SB01A	122(162)	92(132)	52.5(52.3)	59.5(99.5)	0.82(1.4)
SB02A	136(176)	106(146)	66.5(66.3)	73.5(113.5)	1.08(1.66)
SB04A	164(204)	134(174)	94.5(94.3)	101.5(141.5)	1.58(2.16)

Note1) Use DC[24V] for brake input power supply. Note2) The () is for brake-attached type. Note3) For external dimensions for oil-sealed type. Please kindly contact us separately.
Note4) Refer to page 74 for serial encoder pin table.

SC Series

Plug Specifications



Spec.: 172167-1
(Made by AMP)

Power

Pin No.	Color	Signal
1	Red	U
2	White	V
3	Black	W
4	Green	Ground

(Power Connector Pin Table)

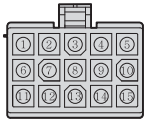


Spec.: 172165-1
(Made by AMP)

Brake

Pin No.	Signal
1	BK+
2	BK-

(Brake Connector Pin Table)



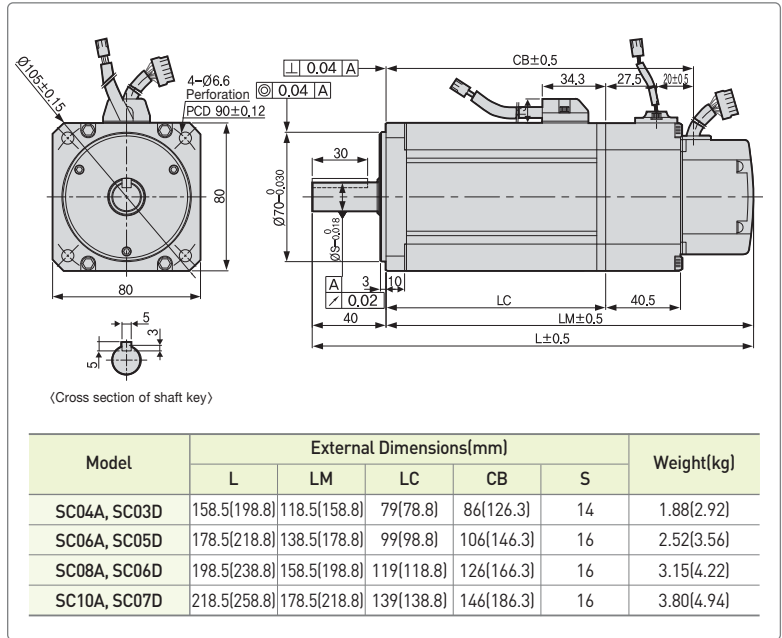
Spec.: 172171-1
(Made by AMP)

Encoder

Pin No.	Signal	Pin No.	Signal
1	A	9	V
2	Ā	10	V̄
3	B	11	W
4	B̄	12	W̄
5	Z	13	+5V
6	Z̄	14	0V
7	U	15	SHIELD
8	Ū		

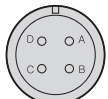
(Parallel Encoder Connector Pin Table)

Note1 Use DC[24V] for brake input power supply. **Note2** The [] is for brake-attached type. **Note3** For external dimensions for oil-sealed type. Please kindly contact us separately. **Note4** Refer to page 74 for serial encoder pin table.



SE, SEP Series

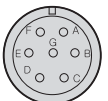
Plug Specifications



Spec.: MS3102A20-4P
(Standard)

Power

Pin No.	Signal
A	U
B	V
C	W
D	Ground



Spec.: MS3102A20-15P
(Brake-attached type)

Brake

Pin No.	Signal	Pin No.	Signal
A	U	D	Ground
B	V	E	BK+
C	W	F	BK-

1. Incremental type



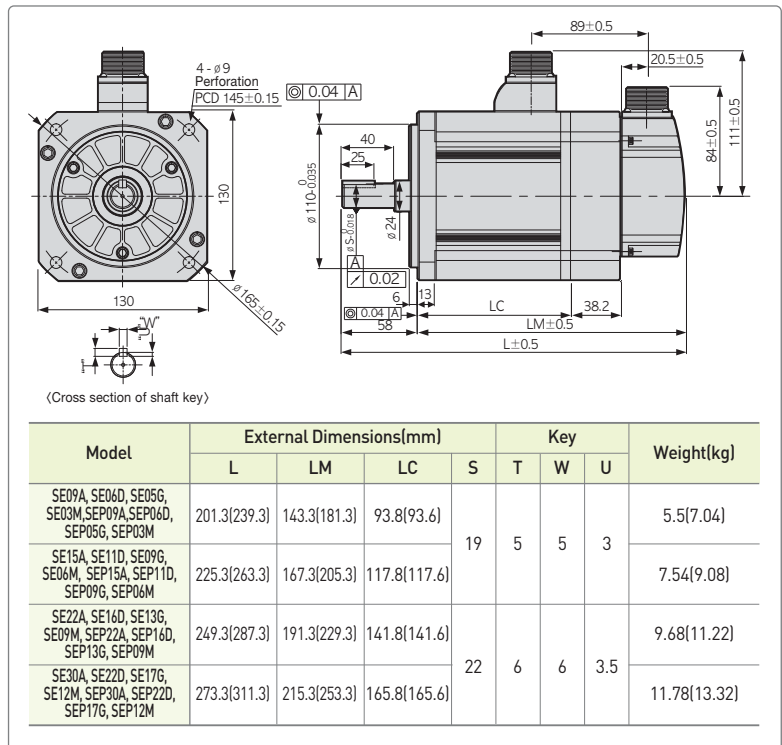
Spec.: MS3102A20-29P

Encoder

Pin No.	Signal	Pin No.	Signal
A	A	M	V
B	Ā	N	V̄
C	B	P	W
D	B̄	R	W̄
E	Z	H	+5V
F	Z̄	G	0V
K	U	J	SHIELD
L	Ū		

(Parallel Encoder Connector Pin Table)

Note1 Use DC[24V] for brake input power supply. **Note2** The [] is for brake-attached type. **Note3** For external dimensions for oil-sealed type. Please kindly contact us separately. **Note4** Refer to page 74 for serial encoder pin table.



HB Series [Hollow Shaft type]

Plug Specifications



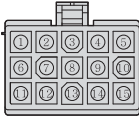
Spec.: 172167-1
(Made by AMP)

Power

Pin No.	Color	Signal
1	Red	U
2	White	V
3	Black	W
4	Green	Ground

(Power Connector Pin Table)

1. Incremental type

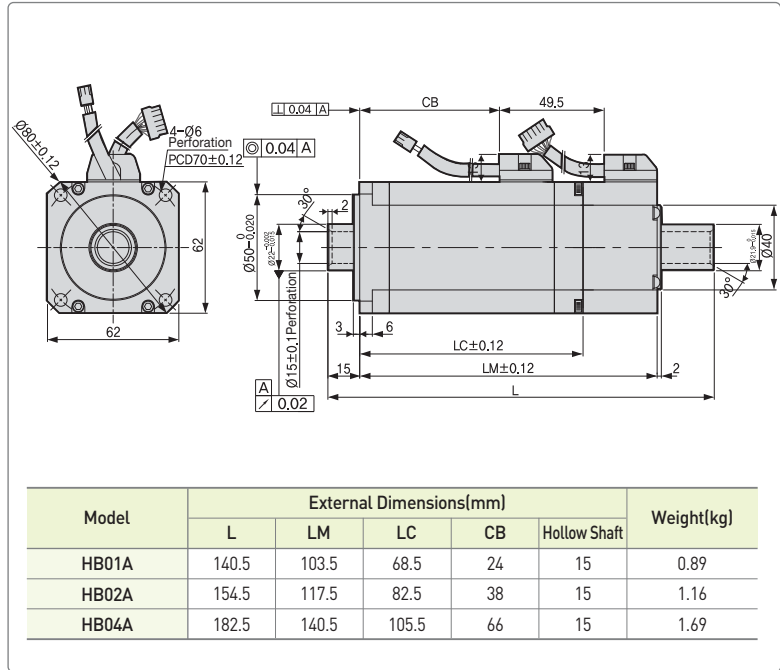


Spec.: 172171-1
(Made by AMP)

Encoder

Pin No.	Signal	Pin No.	Signal
1	A	9	V
2	A	10	V
3	B	11	W
4	B	12	W
5	Z	13	+5V
6	Z	14	0V
7	U	15	SHIELD
8	U		

(Parallel Encoder Connector Pin Table)



HE Series [Hollow Shaft type]

Plug Specifications



Spec.: MS3102A20-4P
(Standard)

Power

Pin No.	Signal
A	U
B	V
C	W
D	Ground

(Power Connector Pin Table)

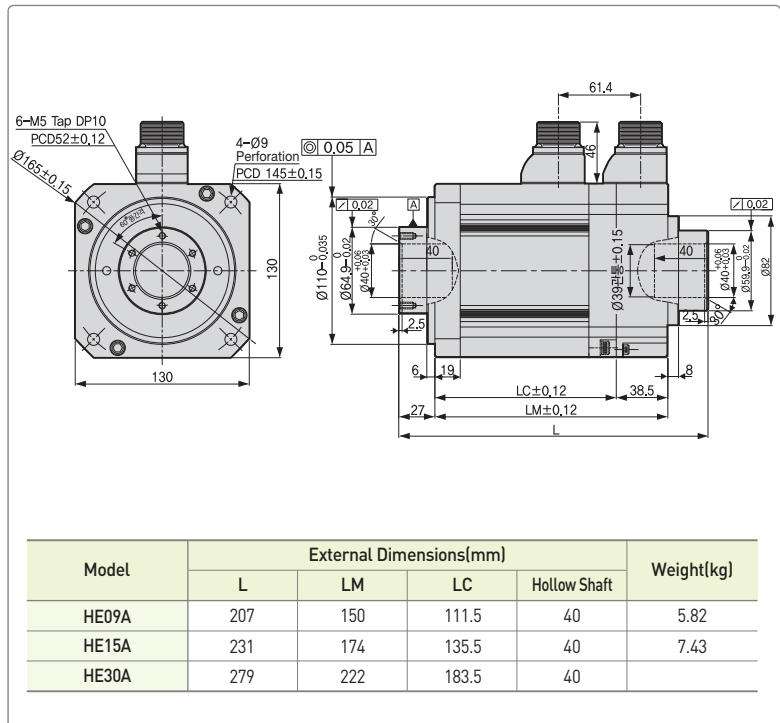


Spec.: MS3102A20-29P

Encoder

Pin No.	Signal	Pin No.	Signal
A	A	M	V
B	A	N	V
C	B	P	W
D	B	R	W
E	Z	H	+5V
F	Z	G	0V
K	U	J	SHIELD
L	U		

(Parallel Encoder Connector Pin Table)



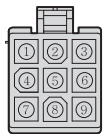
Electric Brake Specifications

Applicable Motor Series	XML-SA,FAL	XML-SB,FB,FBL	XML-SC,FC,FCL	XML-SE,SEP,FE,FEP	XML-SE,SEP,FF,FFP	XML-SG,SGP,FG,FGP
Purpose	Maintenance					
Input voltage [V]	DC 24V	DC 24V	DC 24V	DC 24V	DC 24V	DC 90V
Static friction torque [N · m]	0.32	1.47	3.23	10.4	40	74
Capacity [W]	6	6.5	9	19.4	25	32
Coil resistance [Ω]	96	89	64	29.6	23	327
Rated current [A]	0.25	0.27	0.38	0.81	1.04	0.28
Braking mechanism	Spring brake					
Insulation grade	GraDde F					

- Note1)** For the Electronic Brake that is attached to our Servo Motor, the same specifications are to be applied as per the series.
- Note2)** Do not use it for braking purpose because the electronic brake is only for maintaining the stopped condition.
- Note3)** The characteristics of electronic brake is measured at 20°C
- Note4)** Please make sure to always check the voltage specification on the motor because indicated brake specifications are subject to change.

S Series Encoder Pin Map

SA, SB, SC Series

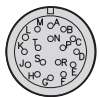


Plug Specification:
172169-1(AMP)

Single Turn (N)		Multi Turn (M)	
핀번호	신호명	핀번호	신호명
1	MA	1	MA
2	MA	2	MA
3	SLO	3	SLO
4	SLO	4	SLO
5	-	5	VDD_B
6	-	6	GND_B
7	+5V	7	+5V
8	OV	8	OV
9	SHIELD	9	SHIELD

(Serial Encoder Connector Pin Table)

SE, SF, SG Series



17 Pole Plug
(MS3102A20-29P)

Single Turn (N)				Multi Turn (M)			
Pin No.	Signal	Pin No.	Signal	Pin No.	신호명	Pin No.	Signal
A	MA	M	-	A	MA	M	-
B	MA	N	-	B	MA	N	-
C	SLO	P	-	C	SLO	P	-
D	SLO	R	-	D	SLO	R	-
E	-	H	+5V	E	VDD_B	H	+5V
F	-	G	OV	F	GND_B	G	OV
K	-	J	MA	K	-	J	MA
L	-	-	-	L	-	-	-

(Serial Encoder Connector Pin Table)

Heat Sink Specifications

Flange	Dimensions(mm)	Materials
AP04	250 X 250 X 6	Aluminum
AP06	250 X 250 X 6	
AP08	250 X 250 X 12	
AP13	350 X 350 X 20	
AP18	550 X 550 X 30	
AP22	650 X 650 X 35	

- Note1)** The data on the product features is measured when those heat sinks are applied.

Servo Motor