

Model designations

Moving Coil

S G L F W2 - 30 D 070 A S 1 E

Sigma-7 Series
1st
2nd
3rd + 4th
5th
6th - 8th
9th
10th
11th
12th
digit

Linear Servomotors:

1st digit - Servomotor Type	
Code	Specification
F	With F-type iron core

2nd digit - Moving Coil/Magnetic Way	
Code	Specification
W2	Moving coil

3rd + 4th digit - Magnet Height	
Code	Specification
30	30 mm
45	45 mm
90	90 mm
1D	135 mm

5th digit - Power Supply Voltage	
Code	Specification
A	200 VAC
D	400 VAC

6th ... 8th digit - Length of Moving Coil	
Code	Specification
070	70 mm
120	125 mm
200	205 mm
230	230 mm
380	384 mm

9th digit - Design Revision Order	
Code	Specification
A	Standard model

10th digit - Sensor Specification	
Code	Specification
T	Without polarity sensor, with thermal protector
S	With polarity sensor and thermal protector

11th digit - Options	
Code	Cooling Method
1	Self-cooled
L	Water-cooled*

12th digit - Options	
Code	Connection
E	Metal round connector (Phoenix)

* Contact your YASKAWA representative for information on water-cooled model.

Magnetic Way

S G L F M2 - 30 270 A

Sigma-7 Series
1st
2nd
3rd + 4th
5th - 7th
8th
digit

Linear Servomotors:

1st digit - Servomotor Type	
Code	Specification
F	With F-type iron core

2nd digit - Moving Coil/Magnetic Way	
Code	Specification
M2	Magnetic way

3rd + 4th digit - Magnet Height	
Code	Specification
30	30 mm
45	45 mm
90	90 mm
1D	135 mm

5th ... 7th digit - Length of Magnetic Way	
Code	Specification
270	270 mm
306	306 mm
450	450 mm
510	510 mm
630	630 mm
714	714 mm

8th digit - Design Revision Order	
Code	Specification
A	Standard model with covered magnets

Note: This information is provided to explain model numbers. It is not meant to imply that models are available for all combinations of codes.

Iron-core SGLFW2/SGLFM2 specifications

Operating environment	
Time rating	Continuous
Thermal class	B
Ambient temperature	0 to +40 °C (without freezing)
Ambient humidity	20 to 80% (non-condensing)
Insulation resistance	10 MΩ min., 500 VDC
Excitation	Permanent magnet
Withstand voltage	1,500 VAC for 1 minute (230 V models) 1,800 VAC for 1 minute (400 V models)
Protection methods	Self-cooled or water-cooled*

* Contact your YASKAWA representative for information on water-cooled models.

200 V Models

Linear motor model SGLFW2-		30A				45A		90A			1DA	
		070A	120A	230A		200A	380A	200A	380A	560A	380A	560A
Rated force*1, *2	N	45	90	180	170	280	560	560	1120	1680	1680	2520
Rated current*1	Arms	1.4	1.5	2.9	2.8	4.4	8.7	7.2	14.4	21.6	14.4	21.6
Instantaneous peak force*1	N	135	270	540	500	840	1680	1500	1680	3360	5040	7560
Instantaneous peak current*1	Arms	5.3	5.2	10.5	9.3	16.4	32.7	27.5	26.9	53.9	80.8	53.9
Coil assembly weight	kg	0.5	0.9	1.7		2.9	5.5	5.3	10.1	14.9	14.6	21.5
Force constant	N / Arms	33.3	64.5	64.5		67.5	67.5	82.0	82.0	82.0	123	123
BEMF constant	Vrms / (m/s) / phase	11.1	21.5	21.5		22.5	22.5	27.3	27.3	27.3	41.0	41.0
Motor constant	N/√W	11.3	17.3	24.4		36.9	52.2	58.1	82.2	101	105	129
Electrical time constant	ms	7.6	7.3	7.3		19	19	24	23	24	25	25
Mechanical time constant	ms	3.9	3.0	2.9		2.1	2.0	1.6	1.5	1.5	1.3	1.3
Thermal resistance (with heat sink)	K / W	2.62	1.17	0.79		0.60	0.44	0.45	0.21	0.18	0.18	0.12
Thermal resistance (without heat sink)	K / W	11.3	4.43	2.55		2.64	1.49	1.81	1.03	0.72	0.79	0.55
Magnetic attraction	N	200	630	1260		2120	4240	4240	8480	12700	12700	19100
Combined Magnetic Way, SGLFM2-		30□□□A				45□□□A		90□□□A			1D□□□A	
Combined Serial Converter Unit, JZDP-□□□□-		628	629	630		631	632	633	634	648	649	650
Applicable SERVOPACKs	SGD7S-	1R6A	1R6A	3R8A	2R8A	5R5A	180A	120A	120A	200A	330A	200A
	SGD7W-	1R6A	1R6A	-	2R8A	5R5A	-	-	-	-	-	-

400 V Models

Linear motor model SGLFW2-		30D			45D		90D			1DA	
		070A	120A	230A	200A	380A	200A	380A	560A	380A	560A
Rated force*1, *2	N	45	90	180	280	560	560	1120	1680	1680	2520
Rated current*1	Arms	1.4	1.5	1.5	2.2	4.3	3.8	7.7	11.5	10.9	16.3
Instantaneous peak force*1	N	135	270	540	840	1680	1500	1680	3360	5040	7560
Instantaneous peak current*1	Arms	5.3	5.2	5.1	8.1	16.2	13.6	14	28	42	39.7
Coil assembly weight	kg	0.5	0.9	1.7	2.9	5.4		5.3	10.1	14.9	14.6
Force constant	N / Arms	33.3	64.5	129	137	136.7		154	154	154	163
BEMF constant	Vrms / (m/s) / phase	11.1	21.5	43	45.6	45.6		51.3	51.3	51.3	54.3
Motor constant	N/√W	11.3	17.3	24.4	37.6	53.2		59.2	83.7	102	103
Electrical time constant	ms	7.6	7.3	7.3	20	19.6		24	24	24	25
Mechanical time constant	ms	3.9	3.0	2.9	2.1	1.9		1.5	1.4	1.4	1.3
Thermal resistance (with heat sink)	K / W	2.62	1.17	0.79	0.6	0.44		0.45	0.21	0.18	0.18
Thermal resistance (without heat sink)	K / W	11.3	4.43	2.55	2.64	1.49		1.81	1.03	0.72	0.79
Magnetic attraction	N	200	630	1260	2120	4240		4240	8480	12700	12700
Combined Magnetic Way, SGLFM2-		30□□□A			45□□□A		90□□□A			1D□□□A	
Combined Serial Converter Unit, JZDP-□□□□-		651	652	653	654	655		657	658	659	660
Applicable SERVOPACKs	SGD7S-	1R9D	1R9D	1R9D	3R5D	8R4D	5R4D	5R4D	120D	170D*3	170D*3
	SGD7W-	1R9D	1R9D	1R9D	3R5D	8R4D	5R4D	5R4D	120D	170D*3	170D*3

*1. These values are for operation in combination with a SERVOPACK when the temperature of the armature winding is 100 °C. The values for other items are at 20 °C. These are typical values.

*2. The rated forces are the continuous allowable force values at a ambient air temperature of 40 °C with an aluminum heat sink of the dimensions given in the following table.

• Heat Sink Dimensions

- 150 mm × 100 mm × 10 mm: SGLFW2-30o070A
- 400 mm × 500 mm × 10 mm: SGLFW2-45A200A, -45A380A, -90A200A
- 609 mm × 762 mm × 10 mm: SGLFW2-90A380A
- 900 mm × 762 mm × 10 mm: SGLFW2-90A560A and -1DA380A
- 1200 mm × 762 mm × 10 mm: SGLFW2-1DA560A
- 254 mm × 254 mm × 25 mm: SGLFW2-30o120A and -30o230A
- 400 mm × 500 mm × 40 mm: SGLFW2-45D200A, -45D380A and -90D200A
- 609 mm × 762 mm × 40 mm: SGLFW2-90D380A
- 900 mm × 762 mm × 40 mm: SGLFW2-90D560A and -1DD380A
- 1400 mm × 900 mm × 40 mm: SGLFW2-1DD560A

*3. Contact your YASKAWA representative for information on these servopack models.