Model designations

Moving Coil

S G L F W - 20 D 090 A P □

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

1st digit - Specification

Code	Servomotor Type
F	With F-type iron core

2nd digit - Moving Coil/Magnetic Way

Code	Specification
W	Moving coil

3rd + 4th digit - Magnet Height

Code	Specification
20	20 mm
35	36 mm
50	47.5 mm
1Z	95 mm

5th digit - Voltage

Code	Specification
A	200 VAC

6th - 8th digit - Length of Moving Coil

Code	Specification
090	91 mm
120	127 mm
200	215 mm
230	235 mm
380	395 mm

9th digit - Design Revision Order

Code	Specification
A, B…	

10th digit - Sensor Specification

Code	Specification
P	With polarity sensor
None	Without polarity sensor

11th digit - Connector for Servomotor Main Circuit Cable

Code	Specification	Applicable Models
None	Connector from Tyco Electronics Japan G.K.	All models
D	Connector from Interconnectron GmbH	SGLFW-35, -50, -1Z□200B

Magnetic Way

S G L F M - 20 324 A □

Sigma-7 Series Linear Servomotors	1st	2nd	3rd + 4th	5th - 7th	8th	9th	digit

1st digit - Servomotor Type

Code	Specification
F	With F-type iron core

2nd digit - Moving Coil/Magnetic Way

Code	Specification
M	Magnetic way

3rd + 4th digit - Magnet Height

Code	Specification
20	20 mm
35	36 mm
50	47.5 mm
1Z	95 mm

5rd ... 7th digit - Length of Magnetic Way

Code	Specification
324	324 mm
405	405 mm
540	540 mm
675	675 mm
756	756 mm
945	945 mm

8th digit - Design Revision Order

Code	Specification
A, B…	

9th digit - Options

Code	Specification
None	Without options
C	With magnet cover

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

Coreless SGLGW/SGLGM 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
Protection methods	Self-cooled or air-cooled

200 V class, with standard-force magnetic way

Linear motor model SGLGW-		30A		40A			60A			90A		
		050C	080C	140C	253C	365C	140C	253C	365C	200C	370C	535C
Rated force*1, *2	N	12.5	25	47	93	140	70	140	210	325	550	750
Rated current*1	Arms	0.51	0.79	0.8	1.6	2.4	1.2	2,2	3.3	4.4	7.5	10.2
Instantaneous peak force*1	N	40	80	140	280	420	220	440	660	1300	2200	3000
Instantaneous peak current*1	Arms	1.6	2.5	2.4	4.9	7.3	3.5	7.0	10.5	17.6	30.0	40.8
Coil assembly weight	kg	0.1	0.15	0.34	0.60	0.87	0.42	0.76	1.1	2.2	3.6	4.9
Force constant	N / Arms	26.4	33.9	61.5	61.5	61.5	66.6	66.6	66.6	78	78	78
BEMF constant	Vrms / (m/s) / phase	8.8	11.3	20.5	20.5	20.5	22.2	22.2	22.2	26.0	26.0	26.0
Motor constant	N/√W	3.66	5.63	7.79	11.0	13.5	11.1	15.7	19.2	26.0	36.8	45.0
Electrical time constant	ms	0.19	0.41	0.43	0.43	0.43	0.45	0.45	0.45	1.4	1.4	1.4
Mechanical time constant	ms	7.5	4.7	5.6	5	4.8	3.4	3.1	3	3.3	2.7	2.4
Thermal resistance (with heat sink)	K / W	5.19	3.11	1.67	0.87	0.58	1.56	0.77	0.51	0.39	0.26	0.22
Thermal resistance (without heat sink)	K / W	8.13	6.32	3.02	1.80	1.23	2.59	1.48	1.15	1.09	0.63	0.47
Magnetic attraction	N	0	0	0	0	0	0	0	0	0	0	0
Combined Magnetic Way, SGLGM-		30□□□A		40□□□C□			60□□□C□			90□□□A□		
Combined Serial Converter Unit, JZDP-□□□□-		250	251	252	253	254	258	259	260	264	265	266
Applicable SERVOPACKs	SGD7S-	R70A	R90A	R90A	1R6A	2R8A	1R6A	2R8A	5R5A	120A	180A	200A
	SGD7W-	1R6A	1R6A	1R6A	1R6A	2R8A	1R6A	2R8A	5R5A	-	-	-

200 V class, with high-force magnetic may

Linear motor model SGLGW-		40A			60A		
		140C	253C	365C	140C	253C	365C
Rated force*1, *2	N	57	114	171	85	170	255
Rated current*1	Arms	0.8	1.6	2.4	1.2	2.2	3.3
Instantaneous peak force*1	N	230	460	690	360	720	1080
Instantaneous peak current*1	Arms	3.2	6.5	9.7	5.0	10.0	14.9
Coil assembly weight	kg	0.34	0.6	0.87	0.42	0.76	1.1
Force constant	N / Arms	76.0	76.0	76.0	77.4	77.4	77.4
BEMF constant	Vrms / (m/s) / phase	25.3	25.3	25.3	25.8	25.8	25.8
Motor constant	N/√W	9.62	13.6	16.7	12.9	18.2	22.3
Electrical time constant	ms	0.43	0.43	0.43	0.45	0.45	0.45
Mechanical time constant	ms	3.7	3.2	3.1	2.5	2.3	2.2
Thermal resistance (with heat sink)	K / W	1.67	0.87	0.58	1.56	0.77	0.51
Thermal resistance (without heat sink)	K / W	3.02	1.80	1.23	2.59	1.48	1.15
Magnetic attraction	N	0	0	0	0	0	0
Combined Magnetic Way, SGLGM-		40□□□C□-M			60□□□C□-M		
Combined Serial Converter Unit, JZDP-□□□□-		255	256	257	261	262	263
Applicable SERVOPACKs	SGD7S-	1R6A	2R8A	3R8A	1R6A	3R8A	7R6A
	SGD7W-	1R6A	2R8A	5R5A	1R6A	5R5A	7R6A

*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
  - 200 mm × 300 mm × 12 mm: SGLGW-30A050C, -30A080C, -40A140C, and -60A140C
  - 300 mm × 400 mm × 12 mm: SGLGW-40A253C and -60A253C
  - 400 mm × 500 mm × 12 mm: SGLGW-40A365C and -60A365C
  - 800 mm × 900 mm × 12 mm: SGLGW-90A200C, -90A370C, and -90A535C