1FK7 Geared Servo Motors
Worm Geared Motors

Selection and Ordering Data

Output (S3 60%) P_2 kW (HP)	Output Speed n_2 rpm	Rated Output Torque M_2 Nm (lb_f-ft)	Max. Permiss. Acceleration Torque M_{2max} Nm (lb_f-ft)	Nominal Ratio i_{nom}	Exact Ratio i_{exact}	Cantilever Force Gear Shaft End $F_{rpermiss}$ N (lb_f)	Overload Factor f_B
2.11 (2.89)	325	61.9 (45.7)	126 (92.2)	9.2	1431/155	2194 (493.2)	1.4
2.08 (2.79)	171	116 (85.6)	217 (160.1)	17.5	351/20	2717 (610.8)	1.2
2.05 (2.75)	129 86	152 (112.1) 227 (167.4)	259 (191) 498 (367.3)	23 35	1863/80 2268/65	2986 (671.8) 4881 (1097.3)	1.1 1.5
1.92 (2.57)	51	360 (265.5)	561 (413.8)	59	117/2	5799 (1303.7)	1.0
1.94 (2.6)	43	430 (317.2)	791 (583.4)	70	279/4	7994 (1797.1)	1.2
1.93 (2.59)	171	108 (79.7)	217 (160.1)	17.5	351/20	2717 (610.8)	1.7
	173 129	107 (78.9) 142 (104.7)	373 (275.1) 259 (191)	17.5 23	1998/115 1863/80	3869 (869.8) 2986 (671.3)	3.0 1.6
	128 86	144 (106.2) 213 (157.1)	458 (337.8) 720 (531.1)	23 35	117/5 873/25	4273 (960.6) 6347 (1426.9)	2.7 2.9
1.79 (2.4)	51 43	335 (247.1) 399 (294.3)	561 (413.8) 609 (449.2)	59 70	117/2 2241/32	5799 (1303.7) 6157 (1384.2)	1.4 1.3
3.05 (4.09)	322	90.5 (66.8)	216 (159.3)	9.3	270/29	3143 (706.6)	1.6
3.01 (4.03)	173	166 (122.4)	373 (275.1)	17.5	1998/115	3869 (869.8)	1.5
3.03 (4.06)	172	168 (123.9)	557 (410.8)	17.5	612/35	5040 (1133)	2.2
2.98 (3.99)	128 128	222 (163.7) 222 (163.7)	458 (337.8) 685 (505.3)	23 23	117/5 117/5	4273 (960.6) 5554 (1248.6)	1.4 2.0
2.95 (3.95)	86	328 (241.9)	720 (531.1)	35	873/25	6347 (1426.9)	1.4
3.47 (4.65)	259	128 (94.4)	371 (273.6)	11.5	81/7	4392 (987.4)	1.9
3.44 (4.61)	172	191 (140.9)	557 (410.8)	17.5	612/35	5040 (1133)	1.9
4.50 (6.03)	259	166 (122.4)	371 (273.6)	11.5	81/7	4392 (987.4)	1.3
4.45 (5.97)	172	247 (182.2)	557 (410.8)	17.5	612/35	5040 (1133)	1.3

Gear Size	Motor Type SH	Worm Geared Motors Order No.	Order codes Gearbox Type	Type of Construction	Mounting Position Type	Approx. Total Weight kg (lb)
S002 S102	36 36	**1FK7032 – 5AK71 – 1■■5 – Z** **1FK7032 – 5AK71 – 1■■5 – Z**	**E03** **E14**	**G■■** **G■■**	**H■■** **H■■**	6.6 (14.6) 12.9 (28.4)
S002 S102	36 36	**1FK7032 – 5AK71 – 1■■5 – Z** **1FK7032 – 5AK71 – 1■■5 – Z**	**E05** **E16**	**G■■** **G■■**	**H■■** **H■■**	6.6 (14.6) 12.9 (28.4)
S002 S102	36 36	**1FK7032 – 5AK71 – 1■■5 – Z** **1FK7032 – 5AK71 – 1■■5 – Z**	**E07** **E17**	**G■■** **G■■**	**H■■** **H■■**	6.6 (14.6) 12.9 (28.4)
S002 S102	36 36	**1FK7032 – 5AK71 – 1■■5 – Z** **1FK7032 – 5AK71 – 1■■5 – Z**	**E08** **E18**	**G■■** **G■■**	**H■■** **H■■**	6.6 (14.6) 12.9 (28.4)
S102 S102	48 48	**1FK7040 – 5AK71 – 1■■5 – Z** **1FK7040 – 5AK71 – 1■■5 – Z**	**E14** **E16**	**G■■** **G■■**	**H■■** **H■■**	13.7 (30.2) 13.7 (30.2)
S102 S102	48 48	**1FK7040 – 5AK71 – 1■■5 – Z** **1FK7040 – 5AK71 – 1■■5 – Z**	**E17** **E18**	**G■■** **G■■**	**H■■** **H■■**	13.7 (30.2) 13.7 (30.2)
S102 S102	48 48	**1FK7042 – 5AF71 – 1■■5 – Z** **1FK7042 – 5AF71 – 1■■5 – Z**	**E14** **E15**	**G■■** **G■■**	**H■■** **H■■**	15 (33.1) 15 (33.1)
S102 S202	48 48	**1FK7042 – 5AF71 – 1■■5 – Z** **1FK7042 – 5AF71 – 1■■5 – Z**	**E16** **E26**	**G■■** **G■■**	**H■■** **H■■**	15 (33.1) 22.5 (49.6)
S102	48	**1FK7042 – 5AF71 – 1■■5 – Z**	**E17**	**G■■**	**H■■**	15 (33.1)
S202	48	**1FK7042 – 5AF71 – 1■■5 – Z**	**E27**	**G■■**	**H■■**	22.5 (49.6)
S102	48	**1FK7042 – 5AF71 – 1■■5 – Z**	**E18**	**G■■**	**H■■**	15 (33.1)
S202	48	**1FK7042 – 5AF71 – 1■■5 – Z**	**E28**	**G■■**	**H■■**	22.5 (49.6)
S102	63	**1FK7060 – 5AF71 – 1■■5 – Z**	**E13**	**G■■**	**H■■**	17.7 (39)
S102 S202	63 63	**1FK7060 – 5AF71 – 1■■5 – Z** **1FK7060 – 5AF71 – 1■■5 – Z**	**E14** **E24**	**G■■** **G■■**	**H■■** **H■■**	17.7 (39) 25.2 (55.6)
S202 S202 S302	63 63 63	**1FK7060 – 5AF71 – 1■■5 – Z** **1FK7060 – 5AF71 – 1■■5 – Z** **1FK7060 – 5AF71 – 1■■5 – Z**	**E25** **E26** **E36**	**G■■** **G■■** **G■■**	**H■■** **H■■** **H■■**	25.2 (55.6) 25.2 (55.6) 34.4 (75.6)
S202 S302	63 63	**1FK7060 – 5AF71 – 1■■5 – Z** **1FK7060 – 5AF71 – 1■■5 – Z**	**E27** **E37**	**G■■** **G■■**	**H■■** **H■■**	25.2 (55.6) 34.4 (75.6)
S302 S402	63 63	**1FK7060 – 5AF71 – 1■■5 – Z** **1FK7060 – 5AF71 – 1■■5 – Z**	**E38** **E48**	**G■■** **G■■**	**H■■** **H■■**	34.4 (75.6) 43.6 (96.1)

• Encoder system in motor:	Incremental encoder sin/cos 1 V_{pp}	**A**
	Absolute encoder EnDat 2,048 pulses/revolution (shaft height 48 and higher)	**E**
	Absolute encoder EnDat 512 pulses/revolution (shaft height 36 only)	**H**
	Simple absolute encoder EnDat 32 pulses/revolution (shaft height 48 and higher)	**G**
	Resolver, multipole (pole number = pole number for motor)	**S**
	Resolver, 2-pole	**T**
• Holding brake:	Motor **without** holding brake	**U**
	Motor **with** holding brake	**V**

For order codes for type of construction, design, and mounting position, see page 4/32

1FK7 Geared Servo Motors
Worm Geared Motors

Selection and Ordering Data

Output (S3 60%) P_2 kW (HP)	Output Speed n_2 rpm	Rated Output Torque M_2 Nm (lb_f-ft)	Max. Permiss. Acceleration Torque M_{2max} Nm (lb_f-ft)	Nominal Ratio i_{nom}	Exact Ratio i_{exact}	Cantilever Force Gear Shaft End $F_{rpermiss}$ N (lb_f)	Overload Factor f_B
0.28 (0.38)	312 172	8.5 (6.3) 15.3 (11.3)	43 (31.7) 73 (53.8)	9.6 17.5	1107/115 297/17	1689 (379.7) 1938 (445.8)	4.1 3.9
0.27 (0.36)	128 86	20.2 (14.9) 30 (22.1)	82 (60.5) 125 (92.2)	23 35	117/5 873/25	2271 (510.5) 2441 (548.8)	3.3 3.4
0.24 (0.32)	51 52	45.6 (33.6) 45.8 (33.8)	88 (64.9) 172 (126.9)	59 58	117/2 405/7	3082 (692.9) 2889 (649.5)	1.6 3.1
	40 43	57.7 (42.6) 54.8 (40.4)	96 (70.8) 184 (135.7)	75 70	747/10 279/4	3343 (751.5) 3075 (691.3)	1.4 2.7
0.38 (0.51)	172 86	21.2 (15.6) 41.6 (30.7)	110 (81.1) 150 (110.6)	17.5 35	297/17 873/25	1938 (445.8) 2441 (548.8)	4.4 3.0
0.35 (0.47)	52 43	63.4 (46.8) 75.9 (56)	172 (126.9) 184 (135.7)	58 70	405/7 279/4	2889 (649.5) 3075 (691.3)	2.3 2.0
0.73 (0.98)	172 130	40.8 (30.1) 53.6 (39.5)	110 (81.1) 132 (97.4)	17.5 23	297/17 162/7	1938 (445.8) 2128 (478.4)	2.3 2.1
0.72 (0.97)	86 86	80.1 (59.1) 79.9 (58.9)	150 (110.6) 252 (185.9)	35 35	873/25 243/7	2441 (548.8) 3411 (766.8)	1.6 2.7
0.66 (0.88)	52	122 (90)	172 (126.9)	58	405/7	2889 (649.5)	1.2
0.69 (0.92)	52	126 (92.9)	302 (222.8)	58	1863/32	4053 (911.2)	2.1
0.66 (0.88)	43	146 (107.7)	184 (135.7)	70	279/4	3075 (691.3)	1.1
0.68 (0.91)	43	151 (111.4)	324 (239)	70	351/5	4314 (969.8)	1.9
1.35 (1.81)	326	39.5 (29.1)	74 (54.6)	9.2	46/5	1565 (351.8)	1.5
1.33 (1.78)	172 171	73.7 (54.4) 74.4 (54.9)	110 (81.1) 217 (160.1)	17.5 17.5	297/17 351/20	1938 (445.8) 2717 (610.8)	1.2 2.3
1.31 (1.76)	129 86 86	97.9 (72.2) 144 (106.2) 146 (107.7)	259 (191) 310 (228.7) 498 (367.3)	23 35 35	1863/80 243/7 2268/65	2986 (671.8) 3411 (766.8) 4881 (1097.3)	2.1 1.7 2.7
1.24 (1.66)	52 51	227 (167.4) 232 (171.1)	302 (222.8) 561 (413.8)	58 59	1863/32 117/2	4053 (911.2) 5799 (1303.7)	1.0 1.9
	43 43	275 (202.8) 277 (204.3)	609 (449.2) 791 (583.4)	70 70	2241/32 279/4	6157 (1384.1) 7994 (1797.1)	1.7 2.2

Gear Size	Motor Type SH	Worm Geared Motors Order No.	Order codes Gearbox Type	Type of Construction	Mounting Position Type	Approx. Total Weight kg (lb)
S202	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E23**	**G■■**	**H■■**	28.9 (63.7)
S202	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E24**	**G■■**	**H■■**	28.9 (63.7)
S202	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E25**	**G■■**	**H■■**	28.9 (63.7)
S302	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E36**	**G■■**	**H■■**	38.1 (84)
S302	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E37**	**G■■**	**H■■**	38.1 (84)
S402	63	**1FK7063 – 5AF71 – 1 ■■ 5 – Z**	**E48**	**G■■**	**H■■**	47.3 (104.3)
S202	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E24**	**G■■**	**H■■**	28.6 (63.7)
S302	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E34**	**G■■**	**H■■**	37.8 (83.3)
S202	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E25**	**G■■**	**H■■**	28.6 (63.7)
S302	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E35**	**G■■**	**H■■**	37.8 (83.3)
S402	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E46**	**G■■**	**H■■**	47 (103.6)
S302	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E37**	**G■■**	**H■■**	37.8 (83.3)
S302	80	**1FK7080 – 5AF71 – 1 ■■ 5 – Z**	**E38**	**G■■**	**H■■**	37.8 (83.3)
S302	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E33**	**G■■**	**H■■**	43 (94.8)
S302	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E34**	**G■■**	**H■■**	43 (94.8)
S402	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E44**	**G■■**	**H■■**	52.2 (115.1)
S302	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E35**	**G■■**	**H■■**	43 (94.8)
S402	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E45**	**G■■**	**H■■**	52.2 (115.1)
S402	80	**1FK7083 – 5AF71 – 1 ■■ 5 – Z**	**E46**	**G■■**	**H■■**	52.2 (115.1)
S402	100	**1FK7100 – 5AF71 – 1 ■■ 5 – Z**	**E43**	**G■■**	**H■■**	54.4 (120)
S402	100	**1FK7100 – 5AF71 – 1 ■■ 5 – Z**	**E44**	**G■■**	**H■■**	54.4 (120)
S402	100	**1FK7101 – 5AF71 – 1 ■■ 5 – Z**	**E43**	**G■■**	**H■■**	60 (132.3)
S402	100	**1FK7101 – 5AF71 – 1 ■■ 5 – Z**	**E44**	**G■■**	**H■■**	60 (132.3)

• Encoder system in motor:	Incremental encoder sin/cos 1 V_{pp}	**A**
	Absolute encoder EnDat 2,048 pulses/revolution (shaft height 48 and higher)	**E**
	Simple absolute encoder EnDat 32 pulses/revolution (shaft height 48 and higher)	**G**
	Resolver, multipole (pole number = pole number for motor)	**S**
	Resolver, 2-pole	**T**
• Holding brake:	Motor **without** holding brake	**U**
	Motor **with** holding brake	**V**

For order codes for type of construction, design, and mounting position, see page 4/32