

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FK7 Geared Servo Motors

Offset Shaft Geared Motors

Selection and Ordering Data

Output (S3 60%)	Output Speed	Rated Output Torque	Max. Permiss. Acceleration Torque	Nominal Ratio	Exact Ratio	Cantilever Force Gear Shaft End	Overload Factor
P_2 kW (HP)	n_2 rpm	M_2 Nm (lb _f -ft)	M_{2max} Nm (lb _f -ft)	i_{nom}	i_{exact}	F_{rperm} N (lb _f)	f_B
0.30 (0.4)	696	4.07 (3)	24 (17.7)	4.3	56/13	1021 (229.5)	4.7
	464	6.11 (4.5)	33 (24.3)	6.5	84/13	1169 (262.8)	4.5
	275	10.3 (7.6)	52 (38.4)	11	273/25	1392 (312.9)	4.1
	221	12.9 (9.5)	62 (45.7)	13.5	231/17	1497 (336.5)	3.9
0.41 (0.55)	130	21.8 (16.1)	114 (84.1)	23	3185/138	1786 (401.5)	4.2
	86	33.1 (24.4)	120 (88.5)	35	3575/102	2053 (461.5)	2.9
0.79 (1.06)	696	5.64 (4.2)	45 (33.2)	4.3	56/13	1021 (229.5)	6.7
	464	8.46 (6.2)	64 (47.2)	6.5	84/13	1169 (262.8)	6.3
	275	14.3 (10.5)	99 (73)	11	273/25	1392 (312.9)	5.8
	221	17.8 (13.1)	105 (77.4)	13.5	231/17	1497 (336.5)	5.0
0.79 (1.06)	130	30.2 (22.3)	120 (88.5)	23	3185/138	1786 (401.5)	3.4
	86	45.9 (33.9)	120 (88.5)	35	3575/102	2053 (461.5)	2.2
0.79 (1.06)	696	10.9 (8)	45 (33.2)	4.3	56/13	1021 (229.5)	3.6
	464	16.3 (12)	64 (47.2)	6.5	84/13	1169 (262.8)	3.4
0.79 (1.06)	275	27.5 (20.3)	99 (73)	11	273/25	1392 (312.9)	3.1
	221	34.3 (25.3)	105 (77.4)	13.5	231/17	1497 (336.5)	2.7
0.79 (1.06)	130	58.2 (42.9)	120 (88.5)	23	3185/138	1786 (401.5)	1.8
	128	59.1 (43.6)	233 (171.9)	23	2320/99	2308 (518.8)	3.4
0.79 (1.06)	86	88.4 (65.2)	120 (88.5)	35	3575/102	2053 (461.5)	1.2
	85	89.4 (65.9)	270 (171.9)	35	390/11	2650 (595.7)	2.6
1.43 (1.92)	696	19.6 (14.5)	80 (59)	4.3	56/13	1021 (229.5)	3.2
	464	29.5 (21.8)	91 (67.1)	6.5	84/13	1169 (262.8)	2.4
1.43 (1.92)	275	49.8 (36.7)	105 (77.4)	11	273/25	1392 (312.9)	1.7
	278	49.3 (36.4)	196 (144.6)	11	7303/676	1783 (595.7)	3.1
1.43 (1.92)	221	61.9 (45.7)	105 (77.4)	13.5	231/17	1497 (336.5)	1.3
	220	62.1 (45.8)	210 (154.9)	13.5	109/8	1927 (433.2)	2.6
1.43 (1.92)	128	107 (78.9)	270 (199.2)	23	2320/99	2308 (518.9)	2.0
	85	162 (119.5)	270 (199.2)	35	390/11	2650 (595.7)	1.3
1.43 (1.92)	86	160 (118)	450 (331.9)	35	7252/207	3666 (824.1)	2.2
2.22 (2.98)	696	30.5 (22.5)	80 (59)	4.3	56/13	1021 (229.5)	1.7
	464	45.8 (33.8)	91 (67.1)	6.5	84/13	1169 (269.8)	1.3
2.22 (2.98)	540	39.3 (29)	112 (82.6)	5.6	5341/962	1428 (321)	1.9
	278	76.5 (56.4)	196 (144.6)	11	7303/676	1783 (400.8)	1.7
2.22 (2.98)	220	96.5 (71.2)	210 (154.9)	13.5	109/8	1927 (433.2)	1.4
	128	166 (122.4)	270 (199.2)	23	2320/99	2308 (518.9)	1.1
	86	248 (182.9)	450 (331.9)	35	7252/207	3666 (824.1)	1.2

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Synchronous Servo Motors

1FK7 Geared Servo Motors
Offset Shaft Geared Motors

Gear Size	Motor Type	Offset Shaft Geared Motors		Order codes			Approx. Total Weight kg (lb)
		Order No.		Gearbox Type	Type of Construction	Mounting Position Type	
	SH						
F202	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C22	G ■ ■	H ■ ■	30.2 (66.6)
F202	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C23	G ■ ■	H ■ ■	30.2 (66.6)
F202	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C24	G ■ ■	H ■ ■	30.2 (66.6)
F202	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C25	G ■ ■	H ■ ■	30.2 (66.6)
F302	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C35	G ■ ■	H ■ ■	37.8 (83.4)
F302	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C36	G ■ ■	H ■ ■	37.8 (83.4)
F402	80	1FK7080 – 5AF71 – 1	■ ■ ■ 5 – Z	C46	G ■ ■	H ■ ■	46.1 (101.7)
F202	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C22	G ■ ■	H ■ ■	35.4 (78.1)
F202	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C23	G ■ ■	H ■ ■	35.4 (78.1)
F302	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C33	G ■ ■	H ■ ■	43 (94.8)
F302	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C34	G ■ ■	H ■ ■	43 (94.8)
F402	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C44	G ■ ■	H ■ ■	51.3 (113.1)
F302	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C35	G ■ ■	H ■ ■	43 (94.8)
F402	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C45	G ■ ■	H ■ ■	51.3 (113.1)
F402	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C46	G ■ ■	H ■ ■	51.3 (113.1)
F602	80	1FK7083 – 5AF71 – 1	■ ■ ■ 5 – Z	C66	G ■ ■	H ■ ■	78.3 (172.7)
F402	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C42	G ■ ■	H ■ ■	53.5 (118)
F402	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C43	G ■ ■	H ■ ■	53.3 (117.5)
F402	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C44	G ■ ■	H ■ ■	53.5 (118)
F402	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C45	G ■ ■	H ■ ■	53.3 (117.5)
F602	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C65	G ■ ■	H ■ ■	80.5 (177.5)
F402	100	1FK7100 – 5AF71 – 1	■ ■ ■ 5 – Z	C46	G ■ ■	H ■ ■	53.3 (117.5)
F402	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C42	G ■ ■	H ■ ■	59.1 (130.3)
F402	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C43	G ■ ■	H ■ ■	59.1 (130.3)
F402	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C44	G ■ ■	H ■ ■	59.1 (130.3)
F602	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C64	G ■ ■	H ■ ■	86.1 (189.9)
F402	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C45	G ■ ■	H ■ ■	59.1 (130.3)
F602	100	1FK7101 – 5AF71 – 1	■ ■ ■ 5 – Z	C66	G ■ ■	H ■ ■	86.1 (189.9)
F402	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C42	G ■ ■	H ■ ■	65.7 (144.9)
F402	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C43	G ■ ■	H ■ ■	65.7 (144.9)
F602	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C63	G ■ ■	H ■ ■	92.7 (204.4)
F402	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C44	G ■ ■	H ■ ■	65.7 (144.9)
F602	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C64	G ■ ■	H ■ ■	92.7 (204.4)
F602	100	1FK7103 – 5AF71 – 1	■ ■ ■ 5 – Z	C65	G ■ ■	H ■ ■	92.7 (204.4)
F602	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C62	G ■ ■	H ■ ■	103 (227.1)
F402	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C42	G ■ ■	H ■ ■	75.7 (166.9)
F602	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C63	G ■ ■	H ■ ■	103 (227.1)
F402	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C43	G ■ ■	H ■ ■	75.7 (166.9)
F602	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C64	G ■ ■	H ■ ■	103 (227.1)
F602	100	1FK7105 – 5AF71 – 1	■ ■ ■ 5 – Z	C65	G ■ ■	H ■ ■	103 (227.1)
• Encoder system in motor:		Incremental encoder sin/cos 1 V _{pp} Absolute encoder EnDat 2,048 pulses/revolution (shaft height 48 and higher) Simple absolute encoder EnDat 32 pulses/revolution (shaft height 48 and higher) Resolver, multipole (pole number = pole number for motor) Resolver, 2-pole	A E G S T				
• Holding brake:		Motor without holding brake Motor with holding brake	U V				

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1FK7 Geared Servo Motors

Offset Shaft Geared Motors

Selection and Ordering Data

Output (S3 60%)	Output Speed	Rated Output Torque	Max. Permiss. Acceleration Torque	Nominal Ratio	Exact Ratio	Cantilever Force Gear Shaft End	Overload Factor
P_2 kW (HP)	n_2 rpm	M_2 Nm (lb _f -ft)	M_{2max} Nm (lb _f -ft)	i_{nom}	i_{exact}	F_{rperm} N (lb _f)	f_B
2.08 (2.79)	540	36.6 (27)	173 (127.6)	5.6	5341/962	1428 (321)	4.0
	278	71.3 (52.6)	210 (154.9)	11	7303/676	1783 (400.8)	2.5
	220	89.9 (66.3)	210 (154.9)	13.5	109/8	1927 (433.2)	2.0
	128	155 (114.3)	270 (199.2)	23	2320/99	2308 (518.9)	1.5
	128	155 (114.3)	450 (331.9)	24	588/25	3210 (721.6)	2.5
	86	231 (170.4)	450 (331.9)	35	7252/207	3666 (824.1)	1.7
	86	231 (170.4)	700 (516.3)	35	2210/63	4523 (1016.8)	2.6
	86	231 (170.4)	700 (516.3)	35	2210/63	4523 (1016.8)	2.6
3.20 (4.29)	540	56.5 (41.7)	173 (127.6)	5.6	5341/962	1428 (321)	2.0
	278	110 (81.1)	210 (154.9)	11	7303/676	1783 (400.8)	1.3
	278	110 (81.1)	350 (258.2)	11	1456/135	2475 (556.4)	2.1
	224	136 (100.3)	350 (258.2)	13.5	7696/575	2660 (598)	1.7
	221	138 (101.8)	550 (405.7)	13.5	5984/441	3296 (741)	2.6
	128	240 (177)	450 (331.9)	24	588/25	3210 (721.6)	1.2
	129	236 (174.1)	700 (516.3)	23	325/14	3942 (886.2)	1.9
	86	357 (263.3)	700 (516.3)	35	2210/63	4523 (1016.8)	1.3
	85	359 (264.8)	1100 (811.4)	35	845/24	6120 (1375.8)	2.0
	85	359 (264.8)	1100 (811.4)	35	845/24	6120 (1375.8)	2.0
3.66 (4.91)	516	67.7 (49.9)	482 (355.5)	5.8	3784/651	2484 (558.4)	4.8
	277	126 (92.9)	550 (405.7)	11	682/63	3057 (687.2)	2.9
	221	158 (116.5)	550 (405.7)	13.5	5984/441	3296 (741)	2.3
	129	270 (199.2)	700 (516.3)	23	325/14	3942 (886.2)	1.7
	129	271 (199.9)	1100 (811.4)	23	1885/81	5331 (1198.5)	2.7
	86	408 (300.9)	700 (516.3)	35	2210/63	4523 (1016.8)	1.1
	86	408 (300.9)	700 (516.3)	35	2210/63	4523 (1016.8)	1.1
	86	408 (300.9)	700 (516.3)	35	2210/63	4523 (1016.8)	1.1
4.72 (6.33)	516	87.4 (64.5)	482 (355.5)	5.8	3784/651	2484 (558.4)	3.2
	277	163 (120.2)	550 (405.7)	11	682/63	3057 (687.2)	1.9
	221	204 (150.5)	550 (405.7)	13.5	5984/441	3296 (741)	1.5
	220	205 (151.2)	1000 (737.6)	13.5	871/64	4458 (1002.2)	2.8
	129	349 (257.4)	700 (516.3)	23	325/14	3942 (886.2)	1.2
	85	529 (390.2)	1100 (811.4)	35	845/24	6120 (1375.8)	1.2
	85	529 (390.2)	1100 (811.4)	35	845/24	6120 (1375.8)	1.2
	85	529 (390.2)	1100 (811.4)	35	845/24	6120 (1375.8)	1.2
5.20 (6.97)	430	115 (84.8)	482 (355.5)	5.8	3784/651	2484 (558.4)	2.4
	231	215 (158.6)	550 (405.7)	11	682/63	3057 (687.2)	1.5
	231	215 (158.6)	991 (731)	11	2077/192	4130 (928.2)	2.6
	184	269 (198.4)	550 (405.7)	13.5	5984/441	3296 (741)	1.2
	183	270 (199.2)	1000 (737.6)	13.5	871/64	4458 (1002.2)	2.1
	108	460 (339.3)	1100 (811.4)	23	1885/81	5331 (1198.5)	1.4
	108	460 (339.3)	1100 (811.4)	23	1885/81	5331 (1198.5)	1.4
	108	460 (339.3)	1100 (811.4)	23	1885/81	5331 (1198.5)	1.4
7.93 (10.63)	529	143 (105.5)	766 (565)	5.7	1407/248	3330 (748.6)	2.9
	516	147 (108.4)	482 (355.5)	6	3784/651	2484 (558.4)	1.8
	277	273 (101.4)	991 (731)	11	2077/192	4130 (922.2)	2.0
	277	273 (101.4)	550 (405.7)	11	682/63	3057 (687.2)	1.1
	220	343 (253)	1000 (737.6)	13.6	871/64	4458 (1002.2)	1.6
	129	587 (433)	1100 (811.4)	24	1885/81	5331 (1198.5)	1.0

Synchronous Servo Motors

1FK7 Geared Servo Motors Offset Shaft Geared Motors

Gear Size	Motor Type	Offset Shaft Geared Motors	Order codes			Approx. Total Weight	
			Order No.	Gearbox Type	Type of Construction		Mounting Position Type
	SH					kg (lb)	
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C11	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C12	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C13	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C14	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C15	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	36	1FK7032 – 5AK71 – 1	■ ■ ■ 5 – Z	C16	G ■ ■ ■	H ■ ■ ■	13.8 (30.4)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C11	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C12	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C13	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C14	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C15	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7040 – 5AK71 – 1	■ ■ ■ 5 – Z	C16	G ■ ■ ■	H ■ ■ ■	14.6 (32.2)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C11	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C12	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C13	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C14	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C15	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F202	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C25	G ■ ■ ■	H ■ ■ ■	24.1 (53.1)
F102	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C16	G ■ ■ ■	H ■ ■ ■	15.9 (35.1)
F202	48	1FK7042 – 5AF71 – 1	■ ■ ■ 5 – Z	C26	G ■ ■ ■	H ■ ■ ■	24.1 (53.1)
F102	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C11	G ■ ■ ■	H ■ ■ ■	18.6 (41)
F102	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C12	G ■ ■ ■	H ■ ■ ■	18.6 (41)
F102	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C13	G ■ ■ ■	H ■ ■ ■	18.6 (41)
F202	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C23	G ■ ■ ■	H ■ ■ ■	26.8 (59.1)
F102	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C14	G ■ ■ ■	H ■ ■ ■	18.6 (41)
F202	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C24	G ■ ■ ■	H ■ ■ ■	26.8 (59.1)
F202	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C25	G ■ ■ ■	H ■ ■ ■	26.8 (59.1)
F202	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C26	G ■ ■ ■	H ■ ■ ■	26.8 (59.1)
F302	63	1FK7060 – 5AF71 – 1	■ ■ ■ 5 – Z	C36	G ■ ■ ■	H ■ ■ ■	34.4 (75.9)
F102	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C11	G ■ ■ ■	H ■ ■ ■	22.3 (49.2)
F102	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C12	G ■ ■ ■	H ■ ■ ■	22.3 (49.2)
F202	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C22	G ■ ■ ■	H ■ ■ ■	30.5 (67.3)
F202	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C23	G ■ ■ ■	H ■ ■ ■	30.5 (67.3)
F202	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C24	G ■ ■ ■	H ■ ■ ■	30.5 (67.3)
F202	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C25	G ■ ■ ■	H ■ ■ ■	30.5 (67.3)
F302	63	1FK7063 – 5AF71 – 1	■ ■ ■ 5 – Z	C36	G ■ ■ ■	H ■ ■ ■	38.1 (84)
• Encoder system in motor:	Incremental encoder sin/cos 1 V _{pp} Absolute encoder EnDat 2,048 pulses/revolution (shaft height 48 and higher) Absolute encoder EnDat 512 pulses/revolution (shaft height 36 only) Simple absolute encoder EnDat 32 pulses/revolution (shaft height 48 and higher) Resolver, multipole (pole number = pole number for motor) Resolver, 2-pole	A E H G S T					
• Holding brake:	Motor without holding brake Motor with holding brake	U V					
For order codes for type of construction, design, and mounting position, see page 4/32							