

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FK7 geared servomotors with LP+ planetary gearbox

Selection and ordering data

Motor	LP+ planetary gearbox single-stage		Available gear ratio $i =$		Input speed, max. S3-60 %	Output torque, max. S3-60 %		Output shaft radial force, max. ¹⁾	Gearbox moment of inertia
Type	Torsional backlash ≤ 12 arcmin				n_{G1} rpm	M_{G2} at $i = 5$ Nm (lb _f -ft)	M_{G2} at $i = 10$ Nm (lb _f -ft)	F_r N (lb _f)	J_G at $i = 5/10$ 10 ⁻⁴ kgm ² (10 ⁻³ lb _f -in-s ²)
	Type	Gearbox weight, approx.	5	10					
		kg (lb)							
1FK7022	LP 050-MO1	0.75 (1.65)	✓	–	8000	12 (8.9)	11 (8.1)	650 (146)	0.055 (0.05)
1FK7022	LP 070-MO1	2 (4.41)	–	✓	6000	35 (25.8)	32 (23.6)	1450 (326)	0.28 (0.25)
1FK7032			✓	✓					
1FK7033			✓	✓					
1FK7034			✓	✓					
1FK7040	LP 090-MO1	4 (8.82)	✓	✓	6000	90 (66.4)	80 (59.0)	1900 (427)	1.77 (1.57)
1FK7042			✓	✓					
1FK7043			✓	✓					
1FK7044			✓	✓					
1FK7060	LP 120-MO1	8.6 (19.0)	✓	✓	4800	220 (162)	200 (148)	4000 (899)	5.42 (4.80)
1FK7061			✓	✓					
1FK7062			✓	✓					
1FK7063			✓	✓					
1FK7064			✓	–					
1FK7080	LP 155-MO1	17 (37.5)	✓	✓	3600	450 (332)	350 (258)	6000 (1349)	25.7 (22.8)
1FK7081			✓	✓					
1FK7083			✓	✓					
1FK7084			✓	✓					
1FK7085			✓	✓					
1FK7086			✓	✓					
1FK7100			✓	✓					
1FK7101			✓	–					
1FK7103			✓	–					
1FK7105			✓	–					
Gear shaft With feather key			Order code V40 V42						

Preconditions:

With the following motor versions, LP+ planetary gearboxes can be mounted:

- Plain motor shaft extension, shaft and flange accuracy tolerance N, without/with holding brake
- IP64 degree of protection and anthracite paint finish

LP+ planetary gearboxes can therefore only be ordered with these motors:

1FK7 . . . -2 A . 7 1 -1 . 0 Compact
1FK7 . . . -3 B . 7 1 -1 . 0 High Inertia
1FK7 . . . -4 C . 7 1 -1 . 0 High Dynamic
G without brake
H with brake

or

1FK7 0 2 . -5 A . 7 1 -1 . G 5
1FK7 0 2 . -5 A . 7 1 -1 . H 5

When ordering a motor with gearbox, **-Z** should be added to the order number.

Example:

1FK7042 motor with holding brake
 with single-stage LP+ planetary gearbox
 with $i = 5$ and gear shaft with feather key
 1FK7042-3BK71-1AH0-**Z**
V40

Continuous duty

Continuous duty is permissible at the rated speed and rated torque. The gearbox temperature may not exceed 90 °C (194 °F).

LP+ planetary gearbox single-stage Torsional backlash ≤ 12 arcmin	Rated input speed	Rated output torque	
Type	n_{G1}	M_{G2} at $i = 5$	M_{G2} at $i = 10$
	rpm	Nm (lb _f -ft)	Nm (lb _f -ft)
LP 050-MO1	4000	5.7 (4.2)	–
LP 070-MO1	3700	18 (13.3)	16.5 (12.2)
LP 090-MO1	3400	45 (33.2)	40 (29.5)
LP 120-MO1	2600	110 (81.1)	100 (73.8)
LP 155-MO1	2000	320 (236)	190 (140)

✓ Possible

– Not possible

¹⁾ In relation to the center of the output shaft at 100 rpm.