

SIMOTICS motors

Feed motors for SINAMICS S120 Combi

SIMOTICS S-1FK7 Compact/1FK7 High Inertia synchronous motors – Natural cooling

Selection and ordering data

Static torque	Rated speed	Shaft height	Rated power	1FK7 synchronous motors Natural cooling	Moment of inertia of rotor		Weight	
M_0 at $\Delta T = 100\text{ K}$	n_{rated}	SH	P_{rated} at $\Delta T = 100\text{ K}$		Without brake	With brake	Without brake	With brake
Nm	rpm		kW	Article No.	10^{-4} kgm^2	10^{-4} kgm^2	kg	kg
1FK7 Compact								
6	3000	63	1.5	1FK7060-2AF71-1 ■ ■ 1	7.7	8.7	7.1	8.5
8	3000	63	1.5	1FK7062-2AF71-1 ■ ■ 1	11.2	12.2	9.1	10.5
	3000	80	2.1	1FK7080-2AF71-1 ■ ■ 1	14.2	17.5	10.3	13.3
11	2000	63	1.9	1FK7063-2AC71-1 ■ ■ 1	14.7	15.7	11.1	12.5
	3000	63	2.3	1FK7063-2AF71-1 ■ ■ 1	14.7	15.7	11.1	12.5
12	2000	80	2.1	1FK7081-2AC71-1 ■ ■ 1	20	23.5	12.9	15.9
	3000	80	2.7	1FK7081-2AF71-1 ■ ■ 1	20	23.5	12.9	15.9
16	2000	80	2.6	1FK7083-2AC71-1 ■ ■ 1	26	29.5	15.6	18.6
	3000	80	3.3	1FK7083-2AF71-1 ■ ■ 1	26	29.5	15.6	18.6
18	2000	100	3.1	1FK7100-2AC71-1 ■ ■ 1	54	62	17.6	21
	3000	100	3.8	1FK7100-2AF71-1 ■ ■ 1	54	62	17.6	21
20	2000	80	3.1	1FK7084-2AC71-1 ■ ■ 1	32.5	35.5	18.3	21.3
	3000	80	3.1	1FK7084-2AF71-1 ■ ■ 1	32.5	35.5	18.3	21.3
27	2000	100	4.3	1FK7101-2AC71-1 ■ ■ 1	79	87	23.0	27.5
36	2000	100	5.2	1FK7103-2AC71-1 ■ ■ 1	104	112	28.5	33.0
48	2000	100	7.7	1FK7105-2AC71-1 ■ ■ 1	154	162	39.0	43.5
1FK7 High Inertia								
3	6000	48	0.9	1FK7042-3BK71-1 ■ ■ 1	5.1	5.4	5.1	5.8
6	3000	63	1.5	1FK7060-3BF71-1 ■ ■ 1	12.5	13.5	7.9	9.3
8.5	3000	63	1.9	1FK7062-3BF71-1 ■ ■ 1	23.5	24.5	10.7	12.1
12	3000	80	2.7	1FK7081-3BF71-1 ■ ■ 1	49	52	15.2	18.2
20	2000	80	3.1	1FK7084-3BC71-1 ■ ■ 1	99	102	23.0	26.0
	3000	80	3.1	1FK7084-3BF71-1 ■ ■ 1	99	102	23.0	26.0

Encoder system for motors with DRIVE-CLIQ interface

20 bit absolute encoder single-turn (AS20DQI encoder)
20 bit absolute encoder single-turn + 12 bit multi-turn (AM20DQI encoder)

Shaft extension	Shaft and flange accuracy	Holding brake	
Feather key and keyway	Tolerance N	Without	Q R A B G H
Feather key and keyway	Tolerance N	With	
Plain shaft	Tolerance N	Without	
Plain shaft	Tolerance N	With	

Motor type (repeated)	Efficiency ¹⁾	Stall current	SINAMICS S120 Combi Power Module	SINAMICS S120 Motor Module Booksize compact format	Power cable with complete shield	
	η	I_0 at M_0 at $\Delta T = 100\text{ K}$	Rated output current	Rated output current	Motor connection and brake connection via power connector	
	%	A	I_{rated}	I_{rated}	Power connector	Cable cross-section ²⁾
			A	A	Size	mm ²
1FK7060-2AF71-...	90	4.45	5	5	1	4 × 1.5
1FK7062-2AF71-...	91	5.3	5	5	1	4 × 1.5
1FK7080-2AF71-...	92	4.9	5	5	1	4 × 1.5
1FK7063-2AC71-...	91	5.3	5	5	1	4 × 1.5
1FK7063-2AF71-...	91	8.0	9	9	1	4 × 1.5
1FK7081-2AC71-...	93	5.0	5	5	1	4 × 1.5
1FK7081-2AF71-...	93	8.7	9	9	1	4 × 1.5
1FK7083-2AC71-...	93	7.5	9	9	1	4 × 1.5
1FK7083-2AF71-...	93	10.1	12	18	1	4 × 1.5
1FK7100-2AC71-...	92	8.4	9	9	1	4 × 1.5
1FK7100-2AF71-...	92	11.1	12	18	1	4 × 1.5
1FK7084-2AC71-...	93	8.5	9	9	1	4 × 1.5
1FK7084-2AF71-...	93	12.1	12	18	1	4 × 1.5
1FK7101-2AC71-...	93	12.3	12	18	1.5	4 × 1.5
1FK7103-2AC71-...	93	14.4	–	18	1.5	4 × 1.5
1FK7105-2AC71-...	93	20.0	–	18	1.5	4 × 2.5
1FK7042-3BK71-...	89	4.4	5	5	1	4 × 1.5
1FK7060-3BF71-...	90	4.45	5	5	1	4 × 1.5
1FK7062-3BF71-...	91	5.3	5	5	1	4 × 1.5
1FK7081-3BF71-...	93	8.7	9	9	1	4 × 1.5
1FK7084-3BC71-...	93	8.5	9	9	1	4 × 1.5
1FK7084-3BF71-...	93	12.1	12	18	1	4 × 1.5

Information about the cables
can be found under
MOTION-CONNECT
connection systems.

¹⁾ Optimum efficiency in continuous duty.

²⁾ The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C.