Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FK7 Compact synchronous motor	Number of pole pairs	Moment of inertia of rotor (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at ΔT=100 K	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated} at ΔT=100 K		p	J	m
rpm		kW (HP)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Order No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
Natural cooling									
2000	100	4.29 (5.75)	27 (19.9)	20.5 (15.1)	9.6	**1FK7101-5AC71-1■ ■ ■**	4	79.9 (70.7)	21 (46.3)
		5.23 (7.01)	36 (26.6)	25 (18.4)	11.5	**1FK7103-5AC71-1■ ■ ■**	4	105 (92.9)	29 (63.9)
		7.75 (10.4)	48 (35.4)	37 (27.3)	16	**1FK7105-5AC71-1■ ■ ■**	4	156 (138)	39 (86.2)
3000	48	0.82 (1.10)	3.0 (2.2)	2.6 (1.9)	1.95	**1FK7042-5AF71-1■ ■ ■**	4	3.01 (2.66)	4.9 (10.8)
	63	1.48 (1.98)	6.0 (4.4)	4.7 (3.5)	3.7	**1FK7060-5AF71-1■ ■ ■**	4	7.95 (7.04)	7.0 (15.4)
		2.29 (3.07)	11 (8.2)	7.3 (5.4)	5.6	**1FK7063-5AF71-1■ ■ ■**	4	15.1 (13.3)	11.5 (25.4)
	80	2.14 (2.87)	8.0 (5.9)	6.8 (5.0)	4.4	**1FK7080-5AF71-1■ ■ ■**	4	15.0 (13.2)	10 (22.1)
		3.3 (4.43)	16 (11.8)	10.5 (7.7)	7.4	**1FK7083-5AF71-1■ ■ ■**	4	27.3 (24.1)	14 (30.9)
	100	3.77 (5.06)	18 (13.3)	12.0 (8.8)	8	**1FK7100-5AF71-1■ ■ ■**	4	55.3 (48.9)	19 (41.9)
		4.87 (6.53)	27 (19.9)	15.5 (11.4)	11.8	**1FK7101-5AF71-1■ ■ ■**	4	79.9 (70.7)	21 (46.3)
		5.37 (7.20)[2]	36 (26.6)	20.5 (15.1)[2]	16.5[2]	**1FK7103-5AF71-1■ ■ ■**	4	105 (92.9)	29 (63.9)
		8.17 (11.0)	48 (35.4)	26.0 (19.2)	18	**1FK7105-5AF71-1■ ■ ■**	4	156 (138)	39 (86.2)

Encoder systems for motors without DRIVE-CLiQ interface:	IC2048S/R encoder	**A**
	AM2048S/R encoder[1] AM32S/R encoder[1]	**E** **G**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:	IC22DQ encoder	**D**
	AM22DQ encoder[1] AM16DQ encoder[1]	**F** **K**
	R15DQ resolver	**U**
	R14DQ resolver	**P**

Shaft extension:	Shaft and flange accuracy:	Holding brake:	
Fitted key and keyway	Tolerance N	Without	**A**
Fitted key and keyway	Tolerance N	With	**B**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**

Degree of protection:	IP64	**0**
	IP65 and DE flange IP67	**2**
	IP64 (IP54 for 1FK701) and anthracite paint finish	**3**
	IP65, DE flange IP67 and anthracite paint finish	**5**

To select the type of construction and degree of protection, see Technical definitions.

Motor type (repeated)	Efficiency[3]	Static current	Calculated power P_{calc}[7]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[4]	Booksize format For additional versions and components, see chapter SINAMICS S120 drive system	Power connector	Cable cross-section[5]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} for M_0 ΔT=100 K	I_{rated}				
	%	A	kW (HP)	A	Order No.	Size	mm²	Order No.
1FK7101-5AC71...	93	12.3	5.7 (7.64)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FK7103-5AC71...	93	14.7	7.5 (10.0)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FK7105-5AC71...	93	20	10 (13.4)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FK7042-5AF71...	89	2.2	0.9 (1.21)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7060-5AF71...	90	4.5	1.9 (2.55)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7063-5AF71...	91	8	3.5 (4.69)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7080-5AF71...	92	4.8	2.5 (3.35)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7083-5AF71...	93	10.4	5.0 (6.71)	9[6]	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7100-5AF71...	92	11.2	5.7 (7.64)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7101-5AF71...	93	19	8.5 (11.4)	18[6]	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FK7103-5AF71...	93	27.5	11.3 (15.2)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FK7105-5AF71...	94	31	15 (20.1)	30[6]	**6SL312■-1 TE23-0AA3**	1.5	4 × 6	**6FX■002-5■S51-....**

Cooling:
Internal air cooling **0**
External air cooling **1**

Motor Module:
Single Motor Module **1**
Double Motor Module **2**

Power cable:
MOTION-CONNECT 800 **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores **D**

Length code **....**

Information about the cables can be found in chapter Connection system MOTION-CONNECT.

1) If the absolute encoder is used, M_{rated} is reduced by 10 %.

2) These values refer to n = 2500 rpm.

3) Optimum efficiency in continuous duty.

4) With default setting of the pulse frequency.

5) 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 (104 °F).

6) With the specified Motor Module, the motor cannot be fully utilized with M_0 at ΔT = 100 K winding temperature rise. If a Motor Module with a higher rating is used, you must check whether the specified power cable can be connected to it.

7) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}ft] \times n_{rated}}{5250}$

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FK7 Compact synchronous motor	Number of pole pairs	Moment of inertia of rotor (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at ΔT=100 K	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated} at ΔT=100 K		p	J	m
rpm		kW (HP)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Order No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
Natural cooling									
4500	63	1.74 (2.33)	6 (4.43)	3.7 (2.73)	4.1	**1FK7060-5AH71-1■ ■ ■**	4	7.95 (7.04)	7.0 (15.4)
		2.09 (2.81)[2]	11 (8.11)	5 (3.69)[2]	6.1[2]	**1FK7063-5AH71-1■ ■ ■**	4	15.1 (13.3)	11.5 (25.4)
	80	2.39 (3.21)[2]	8 (5.90)	5.7 (4.20)[2]	5.6[2]	**1FK7080-5AH71-1■ ■ ■**	4	15 (13.2)	10 (22.1)
		3.04 (4.08)[3]	16 (11.8)	8.3 (6.12)[3]	9[3]	**1FK7083-5AH71-1■ ■ ■**	4	27.3 (24.1)	14 (30.9)
6000	20	0.05 (0.07)	0.18 (0.13)	0.08 (0.06)	0.85	**1FK7011-5AK71-1■ ■ 3**	4	0.064 (0.06)	0.9 (2.0)
		0.10 (0.13)	0.35 (0.26)	0.16 (0.12)	0.85	**1FK7015-5AK71-1■ ■ 3**	4	0.083 (0.08)	1.1 (2.4)
	28	0.38 (0.51)	0.85 (0.63)	0.6 (0.44)	1.4	**1FK7022-5AK71-1■ ■ ■**	3	0.28 (0.25)	1.8 (4.0)
	36	0.50 (0.67)	1.1 (0.81)	0.8 (0.59)	1.3	**1FK7032-5AK71-1■ ■ ■**	3	0.61 (0.54)	2.7 (6.0)
		0.63 (0.84)	1.6 (1.18)	1 (0.74)	1.3	**1FK7034-5AK71-1■ ■ ■**	3	0.9 (0.80)	3.7 (8.2)
	48	0.69 (0.93)	1.6 (1.18)	1.1 (0.81)	1.7	**1FK7040-5AK71-1■ ■ ■**	4	1.69 (1.50)	3.5 (7.7)
		1.02 (1.37)[4]	3 (2.21)	1.95 (1.44)[4]	3.1[4]	**1FK7042-5AK71-1■ ■ ■**	4	3.01 (2.66)	4.9 (10.8)

Encoder systems for motors without DRIVE-CLiQ interface:	IC2048S/R encoder	**A**
	AM2048S/R encoder (not for 1FK701 ... 1FK703)[1]	**E**
	AM512S/R encoder (only for 1FK702/1FK703)[1]	**H**
	AM32S/R encoder (not for 1FK701 ... 1FK703)[1]	**G**
	AM16S/R encoder (only for 1FK701 ... 1FK703)[1]	**J**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:[5]	IC22DQ encoder (not for 1FK701)	**D**
	AM22DQ encoder (not for 1FK701 ... 1FK703)[1]	**F**
	AM20DQ encoder (only for 1FK702/1FK703)[1]	**L**
	AM16DQ encoder (not for 1FK701 ... 1FK703)[1]	**K**
	AM15DQ encoder (only for 1FK702/1FK703)[1]	**V**
	R15DQ resolver (not for 1FK701)	**U**
	R14DQ resolver (not for 1FK701)	**P**

Shaft extension:	Shaft and flange accuracy:	Holding brake:	
Fitted key and keyway	Tolerance N	Without	**A**
Fitted key and keyway	Tolerance N	With	**B**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**

Degree of protection:	IP64 (not for 1FK701)	**0**
	IP65 and DE flange IP67 (not for 1FK701)	**2**
	IP64 (IP54 for 1FK701) and anthracite paint finish	**3**
	IP65, DE flange IP67 and anthracite paint finish (not for 1FK701)	**5**

To select the type of construction and degree of protection, see Technical definitions.

Motor type (repeated)	Efficiency[6]	Static current	Calculated power P_{calc}[9]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[7]	Booksize format For additional versions and components, see chapter SINAMICS S120 drive system	Power connector	Cable cross-section[8]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} for M_0 ΔT=100 K	I_{rated}				
	%	A	kW (HP)	A	Order No.	Size	mm²	Order No.
1FK7060-5AH71...	90	6.2	2.8 (3.75)	9	6SL312■-■TE21-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7063-5AH71...	90	12	5.2 (6.97)	18	6SL312■-■TE21-8AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7080-5AH71...	92	7.4	3.8 (5.10)	9	6SL312■-■TE21-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7083-5AH71...	93	15	7.5 (10.1)	18	6SL312■-■TE21-8AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7011-5AK71...	62	1.5	0.11 (0.15)	3	6SL312■-■TE13-0AA3	0.5	4 × 1.5	6FX5 002-5DA20-....
1FK7015-5AK71...	68	1.5	0.22 (0.30)	3	6SL312■-■TE13-0AA3	0.5	4 × 1.5	6FX5 002-5DA20-....
1FK7022-5AK71...	86	1.8	0.5 (0.67)	3	6SL312■-■TE13-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7032-5AK71...	88	1.7	0.7 (0.94)	3	6SL312■-■TE13-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7034-5AK71...	88	1.9	1 (1.34)	3	6SL312■-■TE13-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7040-5AK71...	88	2.25	1 (1.34)	3	6SL312■-■TE13-0AA3	1	4 × 1.5	6FX■002-5■S01-....
1FK7042-5AK71...	89	4.4	1.9 (2.55)	5	6SL312■-■TE15-0AA3	1	4 × 1.5	6FX■002-5■S01-....

Cooling:
Internal air cooling **0**
External air cooling **1**

Motor Module:
Single Motor Module **1**
Double Motor Module **2**

Power cable:
MOTION-CONNECT 800 **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores **D**

Length code **....**

Information about the cables can be found in chapter Connection system MOTION-CONNECT.

1) If the absolute encoder is used, M_{rated} is reduced by 10 %.
2) These values refer to n = 4000 rpm.
3) These values refer to n = 3500 rpm.
4) These values refer to n = 5000 rpm.
5) 1FK701 motors are not available with a DRIVE-CLiQ interface. The encoder systems are connected via the SMC (Sensor Module Cabinet-Mounted).
6) Optimum efficiency in continuous duty.
7) With default setting of the pulse frequency.
8) 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 (104 °F).
9) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}ft] \times n_{rated}}{5250}$

1FK7 High Dynamic motors
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FK7 High Dynamic synchronous motors	Number of pole pairs	Moment of inertia of rotor (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at ΔT=100 K	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated} at ΔT=100 K		p	J	m
rpm		kW (HP)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Order No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
Natural cooling									
3000	48	1.1 (1.48)	4 (2.9)	3.5 (2.6)	4	**1FK7044-7AF71-1■■■**	3	1.28 (1.13)	7.7 (17)
	63	1.7 (2.28)	6.4 (4.7)	5.4 (4.0)	5.3	**1FK7061-7AF71-1■■■**	3	3.4 (3.01)	10 (22.1)
		2.51 (3.37)	12 (8.8)	8 (5.9)	7.5	**1FK7064-7AF71-1■■■**	3	6.5 (5.75)	15.5 (34.2)
	80	3.14 (4.21)[2]	22 (16.2)	12 (8.8)[2]	12.5[2]	**1FK7085-7AF71-1■■■**	4	23 (20.3)	23.5 (51.8)
		3.77 (5.06)[3]	28 (20.6)	18 (13.3)[3]	14.5[3]	**1FK7086-7AF71-1■■■**	4	23 (20.3)	23.5 (51.8)
4500	48	1.23 (1.65)	3.1 (2.3)	2.6 (1.9)	4	**1FK7043-7AH71-1■■■**	3	1 (0.89)	6.3 (13.9)
		1.41 (1.89)	4 (2.9)	3 (2.2)	4.9	**1FK7044-7AH71-1■■■**	3	1.28 (1.13)	7.7 (17)
	63	2.03 (2.72)	6.4 (4.7)	4.3 (3.2)	5.9	**1FK7061-7AH71-1■■■**	3	3.4 (3.01)	10 (22.1)
		2.36 (3.16)	12 (8.8)	5 (3.7)	7	**1FK7064-7AH71-1■■■**	3	6.5 (5.75)	15.5 (34.2)
6000	36	0.57 (0.76)	1.3 (1.0)	0.9 (0.7)	1.5	**1FK7033-7AK71-1■■■**	3	0.27 (0.24)	3.1 (6.8)
	48	1.26 (1.69)	3.1 (2.3)	2 (1.5)	4.4	**1FK7043-7AK71-1■■■**	3	1 (0.89)	6.3 (13.9)

Encoder systems for motors without DRIVE-CLiQ interface:	IC2048S/R encoder	**A**
	AM2048S/R encoder (not for 1FK703)[1]	**E**
	AM512/R encoder (only for 1FK703)[1]	**H**
	AM32S/R encoder (not for 1FK703)[1]	**G**
	AM16S/R encoder (only for 1FK703)[1]	**J**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:	IC22DQ encoder	**D**
	AM22DQ encoder (not for 1FK703)[1]	**F**
	AM20DQ encoder (only for 1FK703)[1]	**L**
	AM16DQ encoder (not for 1FK703)[1]	**K**
	AM15DQ encoder (only for 1FK703)[1]	**V**
	R15DQ resolver	**U**
	R14DQ resolver	**P**

Shaft extension:	**Shaft and flange accuracy:**	**Holding brake:**	
Fitted key and keyway	Tolerance N	Without	**A**
Fitted key and keyway	Tolerance N	With	**B**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**

Degree of protection:	IP64	**0**
	IP65 and DE flange IP67	**2**
	IP64 and anthracite paint finish	**3**
	IP65, DE flange IP67 and anthracite paint finish	**5**

To select the type of construction and degree of protection, see Technical definitions.

Motor type (repeated)	Efficiency[4]	Static current	Calculated power P_{calc}[7]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[5]	Booksize format For additional versions and components, see chapter SINAMICS S120 drive system	Power connector	Cable cross section[6]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} for M_0 ΔT=100 K	I_{rated}				
	%	A	kW (HP)	A	Order No.	Size	mm^2	Order No.
1FK7044-7AF71...	91	4.5	1.3 (1.74)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7061-7AF71...	93	6.1	2.0 (2.68)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7064-7AF71...	93	11	3.8 (5.10)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7085-7AF71...	92	22.5	6.9 (9.25)	30	**6SL312■- 1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FK7086-7AF71...	93	21	8.8 (11.8)	30	**6SL312■- 1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FK7043-7AH71...	90	4.5	1.5 (2.01)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7044-7AH71...	91	6.3	1.9 (2.55)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7061-7AH71...	93	8	3.0 (4.02)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7064-7AH71...	93	15	5.7 (7.64)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7033-7AK71...	88	2.2	0.8 (1.07)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FK7043-7AK71...	90	6.4	1.9 (2.55)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**

Cooling:
Internal air cooling **0**
External air cooling **1**

Motor Module:
Single Motor Module **1**
Double Motor Module **2**

Power cable:
MOTION-CONNECT 800 **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores **D**

Length code **....**

Information about the cables can be found in chapter Connection system MOTION-CONNECT.

1) If the absolute encoder is used, M_{rated} is reduced by 10 %.

2) These values refer to n = 2500 rpm.

3) These values refer to n = 2000 rpm.

4) Optimum efficiency in continuous duty.

5) With default setting of the pulse frequency.

6) 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 (104 °F).

7) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}ft] \times n_{rated}}{5250}$

1FK7 Compact/1FK7 High Dynamic motors for 230 V 1 AC Power Modules – natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	**1FK7 Compact/High Dynamic synchronous motors Connection to SINAMICS S120 230 V 1 AC Power Modules**	Number of pole pairs	Moment of inertia of rotor (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at ΔT=100 K	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated} at ΔT=100 K		p	J	m
rpm		kW (HP)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Order No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
Natural cooling									
3000	36	0.31 (0.42)	1.15 (0.85)	1.0 (0.74)	1.6	**1FK7032-5AF21-1■ ■ ■**	3	0.61 (0.54)	2.7 (5.9)
		0.38 (0.51)	1.3 (0.96)	1.2 (0.89)	2	**1FK7033-7AF21-1■ ■ ■**	3	0.27 (0.24)	3.1 (6.8)
		0.46 (0.62)	1.6 (1.18)	1.45 (1.07)	1.8	**1FK7034-5AF21-1■ ■ ■**	3	0.9 (0.8)	3.7 (8.2)
	48	0.82 (1.10)	3 (2.21)	2.6 (1.92)	3.5	**1FK7042-5AF21-1■ ■ ■**	4	3.01 (2.66)	4.9 (10.8)
		0.79 (1.06)	2.7 (1.99)	2.5 (1.84)	3.8	**1FK7043-7AF21-1■ ■ ■**	3	1 (0.89)	6.3 (13.9)
6000	20	0.05 (0.07)	0.18 (0.13)	0.08 (0.06)	0.5	**1FK7011-5AK21-1■ ■ 3**	4	0.064 (0.06)	0.9 (2.0)
		0.10 (0.13)	0.35 (0.26)	0.16 (0.12)	0.5	**1FK7015-5AK21-1■ ■ 3**	4	0.083 (0.08)	1.1 (2.4)
	28	0.38 (0.51)	0.85 (0.63)	0.6 (0.44)	1.4	**1FK7022-5AK21-1■ ■ ■**	3	0.28 (0.25)	1.8 (4.0)

Synchronous motor:	1FK7 Compact	**5**
	1FK7 High Dynamic	**7**
Encoder systems for motors without DRIVE-CLiQ interface:	IC2048S/R encoder	**A**
	AM2048S/R encoder (only for 1FK704)[1]	**E**
	AM512/R encoder (only for 1FK702/1FK703)[1]	**H**
	AM32S/R encoder (only for 1FK704)[1]	**G**
	AM16S/R encoder) (not for 1FK704)[1]	**J**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:[2]	IC22DQ encoder (not for 1FK701)	**D**
	AM22DQ encoder (only for 1FK704)[1]	**F**
	AM20DQ encoder (only for 1FK702/1FK703)[1]	**L**
	AM16DQ encoder (only for 1FK704)[1]	**K**
	AM15DQ encoder (only for 1FK702/1FK703)[1]	**V**
	R15DQ resolver (not for 1FK701)	**U**
	R14DQ resolver (not for 1FK701)	**P**

Shaft extension:	**Shaft and flange accuracy:**	**Holding brake:**	
Fitted key and keyway	Tolerance N	Without	**A**
Fitted key and keyway	Tolerance N	With	**B**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**

Degree of protection:	IP64 (not for 1FK701)	**0**
	IP65 and DE flange IP67 (not for 1FK701)	**2**
	IP64 (IP54 for 1FK701) and anthracite paint finish	**3**
	IP65, DE flange IP67 and anthracite paint finish (not for 1FK701)	**5**

To select the type of construction and degree of protection, see Technical definitions.

Motor type (repeated)	Efficiency[3]	Static current	Calculated power P_{calc}[7]	SINAMICS S120 Power Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[4]	Blocksize format without line filter For additional versions and components, see chapter SINAMICS S120 drive system	Power connector	Cable cross-section[5]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} for M_0 ΔT=100 K	I_{rated}				
	%	A	kW (HP)	A	Order No.	Size	mm²	Order No.
1FK7032-5AF21...	85	1.7	0.36 (0.48)	2.3	**6SL3210-1SB12-3UA0**	1	4 × 1.5	**6FX■002-5■G01-....**
1FK7033-7AF21...	86	2.2	0.41 (0.5)	2.3	**6SL3210-1SB12-3UA0**	1	4 × 1.5	**6FX■002-5■G01-....**
1FK7034-5AF21...	85	1.9	0.5 (0.67)	2.3	**6SL3210-1SB12-3UA0**	1	4 × 1.5	**6FX■002-5■G01-....**
1FK7042-5AF21...	89	3.9	0.94 (1.26)	3.9	**6SL3210-1SB14-0UA0**	1	4 × 1.5	**6FX■002-5■G01-....**
1FK7043-7AF21...	88	3.9	0.85 (1.14)	3.9	**6SL3210-1SB14-0UA0**	1	4 × 1.5	**6FX■002-5■G01-....**
1FK7011-5AK21...	62	0.85	0.11 (0.15)	0.9	**6SL3210-1SB11-0UA0**	0.5[6]	4 × 1.5	**6FX5002-5DA30-....**
1FK7015-5AK21...	68	0.85	0.22 (0.30)	0.9	**6SL3210-1SB11-0UA0**	0.5[6]	4 × 1.5	**6FX5002-5DA30-....**
1FK7022-5AK21...	85	1.8	0.53 (0.71)	2.3	**6SL3210-1SB12-3UA0**	1	4 × 1.5	**6FX■002-5■G01-....**

Cooling:
Internal air cooling **0**

Motor Module:
Single Motor Module **1**

Power cable:
MOTION-CONNECT 800 **8**
MOTION-CONNECT 500 **5**

Without brake cores **C**
With brake cores **D**

Length code ....

Information about the cables can be found in chapter Connection system MOTION-CONNECT.

1) If the absolute encoder is used, M_{rated} is reduced by 10 %.

2) 1FK701 motors are not available with a DRIVE-CLiQ interface. The encoder systems are connected via the SMC (Sensor Module Cabinet-Mounted).

3) Optimum efficiency in continuous duty.

4) With default setting of the pulse frequency.

5) 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 (104 °F).

6) This power cable is fitted with a connector with M17 thread at the motor end and brake cores as standard (4 × 1.5 mm² + 2 × 1.5 mm²).

7) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}ft] \times n_{rated}}{5250}$

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FK7 High Inertia synchronous motors	Number of pole pairs	Moment of inertia of rotor (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at ΔT=100 K	M_0 at ΔT=100 K	M_{rated} at ΔT=100 K	I_{rated} at ΔT=100 K		p	J	m
rpm		kW (HP)	Nm (lb_f-ft)	Nm (lb_f-ft)	A	Order No.		10^{-4} kgm^2 (10^{-3} lb_f-in-s^2)	kg (lb)
Natural cooling									
2000	80	3.1 (4.16)	20 (14.7)	15 (11.1)	7.1	**1FK7084-3BC71-1■■■**	4	99 (87.6)	22.7 (50.1)
3000	63	1.5 (2.01)	6 (4.4)	4.7 (3.5)	3.7	**1FK7060-3BF71-1■■■**	4	12.5 (11.1)	7.8 (17.2)
		1.6 (2.15)	8 (5.9)	5.1 (3.8)	3.5	**1FK7062-3BF71-1■■■**	4	23.6 (20.9)	10.6 (23.4)
	80	2.7 (3.62)	12 (8.9)	8.7 (6.4)	7	**1FK7081-3BF71-1■■■**	4	49 (43.4)	15.2 (33.5)
		3.1 (4.16)	20 (14.8)	10 (7.4)	6.8	**1FK7084-3BF71-1■■■**	4	99 (87.6)	22.7 (50.1)
6000	48	0.9 (1.21)	3 (2.2)	1.5 (1.1)	2.45	**1FK7042-3BK71-1■■■**	4	5.05 (4.47)	5.1 (11.3)

Encoder systems for motors without DRIVE-CLiQ interface:	IC2048S/R encoder	**A**
	AM2048S/R encoder	**E**
Encoder systems for motors with DRIVE-CLiQ interface:	IC22DQ encoder	**D**
	AM22DQ encoder	**F**

Shaft extension:	**Shaft and flange accuracy:**	**Holding brake:**	
Fitted key	Tolerance N	Without	**A**
Fitted key	Tolerance N	With	**B**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**

Degree of protection:	IP64 and anthracite paint finish	**0**
	IP65 and anthracite paint finish	**1**
	IP65, DE flange IP67 and anthracite paint finish	**2**

To select the degree of protection and type of construction, see Technical definitions.

Motor type (repeated)	Efficiency[1]	Static current	Calculated power P_{calc}[4]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[2]	Booksize format For additional versions and components, see chapter SINAMICS S120 drive system	Power connector	Cable cross-section[3]	Pre-assembled cable
	η	I_0 at M_0 ΔT=100 K	P_{calc} for M_0 ΔT=100 K	I_{rated}				
	%	A	kW (HP)	A	Order No.	Size	mm^2	Order No.
1FK7084-3BC71...	93	8.8	4.2 (5.63)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■N01-....**
1FK7060-3BF71...	90	4.5	1.9 (2.55)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■N01-....**
1FK7062-3BF71...	91	5	2.5 (3.35)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■N01-....**
1FK7081-3BF71...	93	9	3.8 (5.10)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■N01-....**
1FK7084-3BF71...	93	12.5	6.3 (8.45)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■N01-....**
1FK7042-3BK71...	89	4.4	1.9 (2.55)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■N01-....**

Cooling:	
Internal air cooling	**0**
External air cooling	**1**
Motor Module:	
Single Motor Module	**1**
Double Motor Module	**2**

Power cable:	
MOTION-CONNECT 800	**8**
MOTION-CONNECT 500	**5**
Without brake cores	**C**
With brake cores	**D**
Length code	**....**

Information about the cables can be found in chapter Connection system MOTION-CONNECT.

1) Optimum efficiency in continuous duty.

2) With default setting of the pulse frequency.

3) 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 (104 °F).

4) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}ft] \times n_{rated}}{5250}$