1FT6 motors, core type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Core type	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			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	4.8 (6.44)	27 (19.9)	23 (17)	11	**1FT6102-1AC71-■ ■ ■ 1**	4	99 (87.6)	27.5 (60.6)
		8.0 (10.7)	50 (36.9)	38 (28)	17.6	**1FT6105-1AC71-■ ■ ■ 1**	4	168 (148)	39.5 (87.1)
3000	48	1.4 (1.88)	5 (3.7)	4.3 (3.2)	2.9	**1FT6044-1AF71-■ ■ ■ 1**	2	5.1 (4.51)	8.3 (18.3)
	63	1.5 (2.01)	6 (4.4)	4.7 (3.5)	3.4	**1FT6062-1AF71-■ ■ ■ 1**	3	8.5 (7.52)	9.5 (20.9)
		2.2 (2.95)	9.5 (7)	7.0 (5.2)	4.9	**1FT6064-1AF71-■ ■ ■ 1**	3	13 (11.5)	12.5 (27.6)
	80	3.2 (4.29)	13 (9.6)	10.3 (7.6)	8.7	**1FT6082-1AF71-■ ■ ■ 1**	4	30 (26.5)	15 (33.1)
		4.6 (6.17)	20 (14.7)	14.7 (10.8)	11	**1FT6084-1AF71-■ ■ ■ 1**	4	48 (42.4)	20.5 (45.2)
		5.8 (7.78)	27 (19.9)	18.5 (13.6)	13	**1FT6086-1AF71-■ ■ ■ 1**	4	66.5 (58.8)	25.5 (56.2)
4500	63	1.7 (2.28)	6 (4.4)	3.6 (2.7)	3.9	**1FT6062-1AH71-■ ■ ■ 1**	3	8.5 (7.52)	9.5 (20.9)
		2.3 (3.08)	9.5 (7)	4.8 (3.5)	5.5	**1FT6064-1AH71-■ ■ ■ 1**	3	13 (11.5)	12.5 (27.6)
	80	4.9 (6.57)	20 (14.7)	10.5 (7.7)	12.5	**1FT6084-1AH71-■ ■ ■ 1**	4	48 (42.4)	20.5 (45.2)
		5.7 (7.64)	27 (19.9)	12 (8.8)	12.6	**1FT6086-1AH71-■ ■ ■ 1**	4	66.5 (58.8)	25.5 (56.2)
6000	36	0.88 (1.18)	2 (1.5)	1.4 (1)	2.1	**1FT6034-1AK71-■ ■ ■ 1**	2	1.1 (0.97)	4.4 (9.7)
	80	4.1 (5.50)	20 (14.7)	6.5 (4.8)	9.2	**1FT6084-1AK71-■ ■ ■ 1**	4	48 (42.4)	20.5 (45.2)

Type of construction:	IM B5		**1**
Connector outlet direction:	Transverse right (Not for 1FT603/1FT604/1FT606) Transverse left (Not for 1FT603/1FT604/1FT606) Axial NDE Axial DE		**1** **2** **3** **4**
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2047S/R) Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]		**A** **E**
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder ICC22DQ) 22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]		**D** **F**
Shaft extension: Plain shaft Plain shaft	**Shaft and flange accuracy:** Tolerance N Tolerance N	**Holding brake:** Without With	 **G** **H**
Vibration magnitude: Grade A	**Degree of protection:** IP65		**1**

7

Motor type (repeated)	Effi-ciency[2]	Static current	Calculated power P_{calc}[5]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[3]	Booksize format For additional versions and components, see SINAMICS S120 drive system	Power connector	Cable cross-section[4]	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.
1FT6102-1AC7...	93	12.1	5.7 (7.6)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6105-1AC7...	93	21.4	10.5 (14.8)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6044-1AF7...	88	3	1.6 (2.2)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6062-1AF7...	88	4.1	1.9 (2.6)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-1AF7...	89	6.1	3.0 (4.0)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6082-1AF7...	90	9.6	4.1 (5.5)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6084-1AF7...	91	13.2	6.3 (8.5)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6086-1AF7...	91	16.4	8.5 (11.4)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FT6062-1AH7...	89	5.7	2.8 (3.8)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-1AH7...	89	9.0	4.5 (6.0)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6084-1AH7...	91	19.8	9.4 (12.6)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6086-1AH7...	91	23.3	12.7 (17.0)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6034-1AK7...	89	2.6	1.3 (1.7)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6084-1AK7...	91	24.1	12.6 (16.9)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**

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 under Connection system MOTION-CONNECT.

7

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

2) Optimum efficiency in continuous duty.

3) With default setting of the pulse frequency.

4) 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).

5) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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									
1500	100	3.8 (5.1)	27 (19.9)	24.5 (18.1)	8.4	**1FT6102-8AB7■-■ ■ ■ ■**	4	99 (87.6)	27.5 (60.6)
		6.4 (8.6)	50 (36.9)	41 (30.2)	14.5	**1FT6105-8AB7■-■ ■ ■ ■**	4	168 (148)	39.5 (87.1)
		9.6 (12.9)	70 (51.6)	61 (45)	20.5	**1FT6108-8AB7■-■ ■ ■ ■**	4	260 (230)	55.5 (122)
	132	9.7 (13.0)	75 (55.3)	62 (45.7)	19	**1FT6132-6AB71-■ ■ ■ ■**	3	430 (380)	85 (187)
		11.8 (15.8)	95 (70)	75 (55.3)	24	**1FT6134-6AB71-■ ■ ■ ■**	3	547 (484)	100 (220)
		13.8 (18.5)	115 (84.8)	88 (64.9)	27	**1FT6136-6AB71-■ ■ ■ ■**	3	664 (587)	117 (258)

Type of construction:	IM B5	1
	IM B14[2]) (Not for 1FT613)	2
Connector outlet direction:	Transverse right	1
	Transverse left	2
	Axial NDE (Not for 1FT613)	3
	Axial DE	4
Terminal box/ cable entry:	Transverse/from right	5
	Transverse/from left	6
	Axial/from NDE	7
	Axial/from DE	8
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	A
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	E
	Multi-pole resolver	S
	2-pole resolver	T
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	D
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	F
	15 bit resolver (R15DQ)	U
	14 bit resolver (R14DQ)	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
Fitted key and keyway	Tolerance R	Without	D
Fitted key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration magnitude:	Degree of protection:	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67 (Not for 1FT613)	2
Grade A	IP68 (Not for 1FT613)	6
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67 (Not for 1FT613)	5
Grade R	IP68 (Not for 1FT613)	7

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[3]	Static current	Calculated power P_{calc}[6]	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 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.
1FT6102-8AB7...	92	8.7	4.2 (5.6)	9	**6SL312■-■TE21-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6105-8AB7...	92	16.0	7.9 (10.6)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FT6108-8AB7...	93	22.3	11.0 (14.8)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6132-6AB7...	95	21.6	11.8 (15.8)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6134-6AB7...	95	27.0	14.9 (20.0)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6136-6AB7...	95	34	18.1 (24.3)	45	**6SL312■-1 TE24-5AA3**	1.5	4 × 10	**6FX■002-5■S64-....**

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 under Connection system MOTION-CONNECT.

7

1) If the absolute encoder is used, M_{rated} is reduced by 10 %.
2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.
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) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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	63	0.8 (1.1)	4.0 (2.9)	3.7 (2.7)	1.9	**1FT6061-6AC7■-■■■■**	3	6.0 (5.31)	8.0 (7.6)
		1.1 (1.5)	6.0 (4.4)	5.2 (3.8)	2.6	**1FT6062-6AC7■-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		1.7 (2.3)	9.5 (7)	8.0 (5.9)	3.8	**1FT6064-6AC7■-■■■■**	3	13 (11.5)	12.5 (27.6)
	80	1.6 (2.2)	8.0 (5.9)	7.5 (5.5)	4.1	**1FT6081-8AC7■-■■■■**	4	21 (18.5)	12.5 (27.6)
		2.4 (3.2)	13 (9.6)	11.4 (8.4)	6.6	**1FT6082-8AC7■-■■■■**	4	30 (26.5)	15.0 (33.1)
		3.5 (4.7)	20 (14.7)	16.9 (12.5)	8.3	**1FT6084-8AC7■-■■■■**	4	48 (42.4)	20.5 (45.2)
		4.7 (6.3)	27 (19.9)	22.5 (16.6)	10.9	**1FT6086-8AC7■-■■■■**	4	66.5 (58.8)	25.5 (56.2)
	100	4.8 (6.4)	27 (19.9)	23 (17)	11	**1FT6102-8AC7■-■■■■**	4	99 (87.6)	27.5 (60.6)
		8.0 (10.7)	50 (36.9)	38 (28)	17.6	**1FT6105-8AC7■-■■■■**	4	168 (148)	39.5 (87.1)
		11.5 (15.4)	70 (51.6)	55 (40.5)	24.5	**1FT6108-8AC7■-■■■■**	4	260 (230)	55.5 (122)
	132	11.5 (15.4)	75 (55.3)	55 (40.5)	23	**1FT6132-6AC71-■■■■**	3	430 (380)	85.0 (187)
		13.6 (18.2)	95 (70)	65 (47.9)	27	**1FT6134-6AC71-■■■■**	3	547 (484)	100 (220)
		15.5 (20.8)	115 (84.8)	74 (54.5)	30	**1FT6136-6AC71-■■■■**	3	664 (587)	117 (258)

Type of construction:	IM B5	**1**
	IM B14[2] (Not for 1FT613)	**2**
Connector outlet direction:	Transverse right (Not for 1FT606)	**1**
	Transverse left (Not for 1FT606)	**2**
	Axial NDE (Not for 1FT613)	**3**
	Axial DE	**4**
Terminal box/ cable entry: (Only for 1FT61)	Transverse/from right	**5**
	Transverse/from left	**6**
	Axial/from NDE	**7**
	Axial/from DE	**8**
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	**A**
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	**E**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	**D**
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	**F**
	15 bit resolver (R15DQ)	**U**
	14 bit resolver (R14DQ)	**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**
Fitted key and keyway	Tolerance R	Without	**D**
Fitted key and keyway	Tolerance R	With	**E**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**
Plain shaft	Tolerance R	Without	**K**
Plain shaft	Tolerance R	With	**L**

Vibration magnitude:	Degree of protection:	
Grade A	IP64	**0**
Grade A	IP65	**1**
Grade A	IP67 (Not for 1FT613)	**2**
Grade A	IP68 (Not for 1FT613)	**6**
Grade R	IP64	**3**
Grade R	IP65	**4**
Grade R	IP67 (Not for 1FT613)	**5**
Grade R	IP68 (Not for 1FT613)	**7**

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[3]	Static current	Calculated power P_{calc}[6]	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 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.
1FT6061-6AC7...	82	1.9	0.84 (1.1)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6062-6AC7...	84	2.7	1.3 (1.7)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6AC7...	87	4.2	2.0 (2.7)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6081-8AC7...	85	3.9	1.7 (2.3)	5	**6SL312■-■TE15-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6082-8AC7...	87	6.6	2.7 (3.6)	9	**6SL312■-■TE21-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6084-8AC7...	90	8.8	4.2 (5.6)	9	**6SL312■-■TE21-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6086-8AC7...	90	11.3	5.7 (7.6)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6102-8AC7...	93	12.1	5.7 (7.6)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6105-8AC7...	93	21.4	10.5 (14.8)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6108-8AC7...	93	29	14.7 (19.7)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 6	**6FX■002-5■S51-....**
1FT6132-6AC7...	95	29	15.7 (21.1)	30	**6SL312■-1 TE23-0AA3**	1.5	4 × 6	**6FX■002-5■S51-....**
1FT6134-6AC7...	95	36	19.9 (26.7)	45	**6SL312■-1 TE24-5AA3**	1.5	4 × 10	**6FX■002-5■S64-....**
1FT6136-6AC7...	95	42	24.1 (32.3)	45	**6SL312■-1 TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**

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 under Connection system MOTION-CONNECT.

7

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

2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

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) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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	0.7 (0.9)	2.6 (1.9)	2.15 (1.6)	1.7	**1FT6041-4AF71-■■■■**	2	2.9 (2.57)	6.6 (14.6)
		1.4 (1.9)	5.0 (3.7)	4.3 (3.2)	2.9	**1FT6044-4AF71-■■■■**	2	5.1 (4.51)	8.3 (18.3)
	63	1.1 (1.5)	4.0 (2.9)	3.5 (2.6)	2.6	**1FT6061-6AF7■-■■■■**	3	6.0 (5.31)	8.0 (17.6)
		1.5 (2.0)	6.0 (4.4)	4.7 (3.5)	3.4	**1FT6062-6AF7■-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		2.2 (3.0)	9.5 (7)	7.0 (5.2)	4.9	**1FT6064-6AF7■-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	2.2 (3.0)	8.0 (5.9)	6.9 (5.1)	5.6	**1FT6081-8AF7■-■■■■**	4	21.0 (18.5)	12.5 (27.6)
		3.2 (4.3)	13 (9.6)	10.3 (7.6)	8.7	**1FT6082-8AF7■-■■■■**	4	30.0 (26.5)	15.0 (33.1)
		4.6 (6.2)	20 (14.7)	14.7 (10.8)	11	**1FT6084-8AF7■-■■■■**	4	48.0 (42.4)	20.5 (45.2)
		5.8 (7.8)	27 (19.9)	18.5 (13.6)	13	**1FT6086-8AF7■-■■■■**	4	66.5 (58.8)	25.5 (56.2)
	100	6.1 (8.2)	27 (19.9)	19.5 (14.4)	13.2	**1FT6102-8AF7■-■■■■**	4	99.0 (87.6)	27.5 (60.6)
		9.7 (13.0)	50 (36.9)	31 (22.8)	22.5	**1FT6105-8AF7■-■■■■**	4	168 (148)	39.5 (87.1)
		11.6 (15.6)	70 (51.6)	37 (27.3)	25	**1FT6108-8AF7■-■■■■**	4	260 (230)	55.5 (122.4)
	132	11.3 (15.2)	75 (55.3)	36 (26.5)	23	**1FT6132-6AF71-■■■■**	3	430 (380)	85.0 (187.4)

Type of construction:	IM B5	1
	IM B14[2] (Not for 1FT604/1FT613)	2
Connector outlet direction:	Transverse right (Not for 1FT604/1FT606)	1
	Transverse left (Not for 1FT604/1FT606)	2
	Axial NDE (Not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3)	3
	Axial DE	4
Terminal box/ cable entry: (Only for 1FT61)	Transverse/from right	5
	Transverse/from left	6
	Axial/from NDE	7
	Axial/from DE	8
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	A
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	E
	Multi-pole resolver	S
	2-pole resolver	T
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	D
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	F
	15 bit resolver (R15DQ)	U
	14 bit resolver (R14DQ)	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
Fitted key and keyway	Tolerance R	Without	D
Fitted key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration magnitude:	Degree of protection:	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67 (Not for 1FT613)	2
Grade A	IP68 (Not for 1FT613)	6
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67 (Not for 1FT613)	5
Grade R	IP68 (Not for 1FT613)	7

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[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 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	mm^2	Order No.
1FT6041-4AF7 ...	85	1.9	0.8 (1.1)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6044-4AF7 ...	88	3.0	1.6 (2.2)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6061-6AF7 ...	86	2.7	1.3 (1.7)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6062-6AF7 ...	88	4.1	1.9 (2.6)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6AF7 ...	89	6.1	3.0 (4.0)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6081-8AF7 ...	88	5.8	2.5 (3.4)	9	**6SL312■-■TE21-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6082-8AF7 ...	90	9.6	4.1 (5.5)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6084-8AF7 ...	91	13.2	6.3 (8.5)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6086-8AF7 ...	91	16.4	8.5 (11.4)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FT6102-8AF7 ...	93	16.9	8.5 (11.4)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FT6105-8AF7 ...	94	32	15.7 (21.1)	30[6]	**6SL312■-1TE23-0AA3**	1.5	4 × 10	**6FX■002-5■S61-....**
1FT6108-8AF7 ...	93	41	22.0 (29.5)	45	**6SL312■-1TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6132-6AF7 ...	95	43	23.6 (31.7)	45	**6SL312■-1TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**

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 under Connection system MOTION-CONNECT.

7

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

2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

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) $P_{calc}\ [kW] = \frac{M_0\ [Nm] \times n_{rated}}{9550}$ $P_{calc}\ [HP] = \frac{M_0\ [lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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	1.4 (1.9)	4.0 (2.9)	2.9 (2.1)	3.4	**1FT6061-6AH7■-■■■■**	3	6.0 (5.31)	8.0 (17.6)
		1.7 (2.3)	6.0 (4.4)	3.6 (2.7)	3.9	**1FT6062-6AH7■-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		2.3 (3.1)	9.5 (7.0)	4.8 (3.5)	5.5	**1FT6064-6AH7■-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	2.7 (3.6)	8.0 (5.9)	5.8 (4.3)	7.3	**1FT6081-8AH7■-■■■■**	4	21.0 (18.5)	12.5 (27.6)
		4.0 (5.4)	13.0 (9.6)	8.5 (6.3)	11.0	**1FT6082-8AH7■-■■■■**	4	30.0 (26.5)	15.0 (33.1)
		4.9 (6.6)	20.0 (14.7)	10.5 (7.7)	12.5	**1FT6084-8AH7■-■■■■**	4	48.0 (42.4)	20.5 (45.2)
		5.7 (7.6)	27.0 (19.9)	12.0 (8.8)	12.6	**1FT6086-8AH7■-■■■■**	4	66.5 (58.8)	25.5 (56.2)
	100	5.7 (7.6)	27.0 (19.9)	12.0 (8.8)	12.0	**1FT6102-8AH7■-■■■■**	4	99.0 (87.6)	27.5 (60.6)

Type of construction:	IM B5	1
	IM B14[2]	2
Connector outlet direction:	Transverse right (Not for 1FT606)	1
	Transverse left (Not for 1FT606)	2
	Axial NDE	3
	Axial DE	4
Terminal box/ cable entry: (Only for 1FT61)	Transverse/from right	5
	Transverse/from left	6
	Axial/from NDE	7
	Axial/from DE	8
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	A
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	E
	Multi-pole resolver	S
	2-pole resolver	T
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	D
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	F
	15 bit resolver (R15DQ)	U
	14 bit resolver (R14DQ)	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
Fitted key and keyway	Tolerance R	Without	D
Fitted key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration magnitude:	**Degree of protection:**	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67	2
Grade A	IP68	6
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67	5
Grade R	IP68	7

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[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 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.
1FT6061-6AH7...	88	4	1.9 (2.6)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6062-6AH7...	89	5.7	2.8 (3.8)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6AH7...	89	9.0	4.5 (6.0)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6081-8AH7...	89	8.6	3.8 (5.1)	9	**6SL312■-■TE21-0AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6082-8AH7...	90	14.8	6.1 (8.2)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6084-8AH7...	91	19.8	9.4 (12.6)	18[6]	**6SL312■-■TE21-8AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6086-8AH7...	91	23.3	12.7 (17.0)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6102-8AH7...	93	24.1	12.7 (17.0)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**

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 under Connection system MOTION-CONNECT.

7

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

2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

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) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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									
6000	28	0.19 (0.3)	0.4 (0.3)	0.3 (0.2)	1.1	**1FT6021-6AK71-■■■■**	3	0.21 (0.19)	1.2 (2.6)
		0.31 (0.4)	0.8 (0.6)	0.5 (0.4)	0.9	**1FT6024-6AK71-■■■■**	3	0.34 (0.30)	2.1 (4.6)
	36	0.47 (0.6)	1.0 (0.7)	0.75 (0.6)	1.2	**1FT6031-4AK71-■■■■**	2	0.65 (0.58)	3.1 (6.8)
		0.88 (1.2)	2.0 (1.5)	1.4 (1.0)	2.1	**1FT6034-4AK71-■■■■**	2	1.1 (0.97)	4.4 (9.7)
	48	1.1 (1.5)	2.6 (1.9)	1.7 (1.3)	2.4	**1FT6041-4AK71-■■■■**	2	2.9 (2.57)	6.6 (14.6)
		1.9 (2.6)	5.0 (3.7)	3.0 (2.2)	4.1	**1FT6044-4AK71-■■■■**	2	5.1 (4.51)	8.3 (18.3)
	63	1.3 (1.7)	4.0 (2.9)	2.1 (1.5)	3.1	**1FT6061-6AK7■-■■■■**	3	6.0 (5.31)	8.0 (17.6)
		1.3 (1.7)	6.0 (4.4)	2.1 (1.5)	3.2	**1FT6062-6AK7■-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		1.3 (1.7)	9.5 (7.0)	2.1 (1.5)	3.5	**1FT6064-6AK7■-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	2.9 (4.0)	8.0 (5.9)	4.6 (3.4)	7.7	**1FT6081-8AK7■-■■■■**	4	21.0 (18.5)	12.5 (27.6)
		3.5 (4.7)	13.0 (9.6)	5.5 (4.1)	9.1	**1FT6082-8AK7■-■■■■**	4	30.0 (26.5)	15.0 (33.1)
		4.1 (5.5)	20.0 (14.7)	6.5 (4.8)	9.2	**1FT6084-8AK7■-■■■■**	4	48.0 (42.4)	20.5 (45.2)

Type of construction:	IM B5	**1**							
	IM B14[2] (Not for 1FT602/1FT603/1FT604)	**2**							
Connector outlet direction:	Transverse right (Not for 1FT603/1FT604/1FT606)	**1**							
	Transverse left (Not for 1FT603/1FT604/1FT606)	**2**							
	Axial NDE	**3**							
	Axial DE	**4**							
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048 S/R)		**A**						
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1] (Not for 1FT602)		**E**						
	Absolute encoder EnDat 512 S/R (encoder AM512S/R)[1] (Only for 1FT602)		**H**						
	Multi-pole resolver		**S**						
	2-pole resolver		**T**						
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)		**D**						
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ) (Not for 1FT602)[1]		**F**						
	20 bit absolute encoder single-turn +12 bit multi-turn (encoder AM20DQ) (Only for 1FT602)[1]		**L**						
	15 bit resolver (R15DQ)		**U**						
	14 bit resolver (R14DQ)		**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**						
Fitted key and keyway	Tolerance R	Without	**D**						
Fitted key and keyway	Tolerance R	With	**E**						
Plain shaft	Tolerance N	Without	**G**						
Plain shaft	Tolerance N	With	**H**						
Plain shaft	Tolerance R	Without	**K**						
Plain shaft	Tolerance R	With	**L**						
Vibration magnitude:	**Degree of protection:**								
Grade A	IP64								**0**
Grade A	IP65 (Not for 1FT602)								**1**
Grade A	IP67								**2**
Grade A	IP68 (Not for 1FT602)								**6**
Grade R	IP64								**3**
Grade R	IP65 (Not for 1FT602)								**4**
Grade R	IP67								**5**
Grade R	IP68 (Not for 1FT602)								**7**

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[3]	Static current	Calculated power P_{calc}[6]	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 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	mm^2	Order No.
1FT6021-6AK7...	71	1.25	0.3 (0.4)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6024-6AK7...	80	1.25	0.5 (0.7)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6031-4AK7...	87	1.4	0.6 (0.8)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6034-4AK7...	89	2.6	1.3 (1.7)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6041-4AK7...	88	3	1.6 (2.2)	3	**6SL312■-■TE13-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6044-4AK7...	89	5.9	3.1 (4.2)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6061-6AK7...	88	5	2.5 (3.4)	5	**6SL312■-■TE15-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6062-6AK7...	89	7.6	3.8 (5.1)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6AK7...	89	12	4.0 (5.4)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6081-8AK7...	89	11.1	5.0 (6.7)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 1.5	**6FX■002-5■S21-....**
1FT6082-8AK7...	90	17.3	8.2 (11.0)	18	**6SL312■-■TE21-8AA3**	1.5	4 × 2.5	**6FX■002-5■S31-....**
1FT6084-8AK7...	91	24.1	12.6 (16.9)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**

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 under Connection system MOTION-CONNECT.

7

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

2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

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) $P_{calc}\ [kW] = \frac{M_0\ [Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\ [HP] = \frac{M_0\ [lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Forced ventilation

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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)
Forced ventilation[2]									
1500	100	9.3 (12.5)	65.0 (47.9)	59.0 (43.5)	21.7	**1FT6105-8SB7■-■■■■**	4	168 (148)	45.5 (100)
		13.0 (17.4)	90.0 (66.3)	83.0 (61.2)	31	**1FT6108-8SB7■-■■■■**	4	260 (230)	61.5 (135)
	132	16.0 (21.5)	110 (81.1)	102 (75.5)	36	**1FT6132-6SB71-■■■■**	3	430 (380)	91.0 (200)
		20.4 (27.4)	140 (103)	130 (95.8)	45	**1FT6134-6SB71-■■■■**	3	547 (484)	106 (233)
		25.1 (33.7)	175 (129)	160 (117)	55	**1FT6136-6SB71-■■■■**	3	664 (587)	123 (271)
2000	100	11.7 (15.7)	65.0 (47.9)	56.0 (41.3)	28	**1FT6105-8SC7■-■■■■**	4	168 (148)	45.5 (100)
		16.8 (22.5)	90.0 (66.3)	80.0 (59)	40	**1FT6108-8SC7■-■■■■**	4	260 (230)	61.5 (135)
	132	20.5 (27.5)	110 (81.1)	98.0 (72.2)	46	**1FT6132-6SC71-■■■■**	3	430 (380)	91.0 (200)
		26.2 (35.1)	140 (103)	125 (92.1)	57	**1FT6134-6SC71-■■■■**	3	547 (484)	106 (233)
		32.5 (43.6)	175 (129)	155 (114)	72	**1FT6136-6SC71-■■■■**	3	664 (587)	123 (271)

Type of construction:	IM B5	**1**
	IM B14[3] (Not for 1FT613)	**2**
Connector outlet direction:	Transverse right	**1**
	Transverse left	**2**
	Axial NDE (Not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3)	**3**
	Axial DE	**4**
Terminal box/ cable entry:	Transverse/from right	**5**
	Transverse/from left	**6**
	Axial/from NDE	**7**
	Axial/from DE	**8**
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	**A**
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	**E**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	**D**
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	**F**
	15 bit resolver (R15DQ)	**U**
	14 bit resolver (R14DQ)	**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**
Fitted key and keyway	Tolerance R	Without	**D**
Fitted key and keyway	Tolerance R	With	**E**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**
Plain shaft	Tolerance R	Without	**K**
Plain shaft	Tolerance R	With	**L**

Vibration magnitude:	Degree of protection:[4]	
Grade A	IP64	**0**
Grade A	IP65	**1**
Grade R	IP64	**3**
Grade R	IP65	**4**

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[5]	Static current	Calculated power P_{calc}[8]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[6]	Booksize format For additional versions and components, see SINAMICS S120 drive system	Power connector	Cable cross-section[7]	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.
1FT6105-8SB7...	92	21.9	10.2 (13.7)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6108-8SB7...	93	30	14.1 (18.9)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 6	**6FX■002-5■S51-....**
1FT6132-6SB7...	95	36	17.3 (23.2)	45	**6SL312■-1TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6134-6SB7...	95	44	22.0 (29.5)	60	**6SL312■-1TE26-0AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6136-6SB7...	96	55	27.5 (36.9)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**
1FT6105-8SC7...	93	30	13.6 (18.2)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 6	**6FX■002-5■S51-....**
1FT6108-8SC7...	93	41	18.8 (25.2)	45	**6SL312■-1TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6132-6SC7...	95	47	23.0 (30.8)	60	**6SL312■-1TE26-0AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6134-6SC7...	96	58	29.3 (39.3)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**
1FT6136-6SC7...	96	77	36.6 (49.1)	85	**6SL312■-1TE28-5AA3**	3	4 × 25	**6FX■002-5DG33-....**

Cooling:		
Internal air cooling	**0**	
External air cooling	**1**	
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 under Connection system MOTION-CONNECT.

Notes on forced ventilation

	Motors 1FT608/1FT610	Motors 1FT613
Direction of air flow	From NDE to DE	From DE to NDE
Connection	Power connector size 1 Cable, pre-assembled 6FX.002-5CA01-....	Terminal box Cable, by the meter 6FX.008-1BB11-....
Pin and terminal assignments	Pin 1: L1, Pin 2: N	U1/L1: V2/L2: W3/L3
Supply voltage	220 V 1 AC, 50 Hz 260 V 1 AC, 60 Hz	380 ... 420 V 3 AC, 50 Hz 380 ... 480 V 3 AC, 60 Hz
Fan current, max.	0.3 A	0.4 A
Weight of the fan module, approx.	4.8 kg (10.6 lb)	5.6 kg (12.3 lb)
Sound pressure level L_{pA} (1 m)	70 dB	74 dB

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

2) Not for use in environments containing electrically conductive dust. Forced ventilation cannot be used in the presence of flammable, corrosive, electrically conductive or explosive dust.

3) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

4) The degree of protection refers to the motor. The built-on fan meets the requirements of degree of protection IP54.

5) Optimum efficiency in continuous duty.

6) With default setting of the pulse frequency.

7) 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).

8) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Forced ventilation

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque[1]	Rated current	1FT6 synchronous motors Standard type	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			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)
Forced ventilation[2]									
3000	80	6.9 (9.3)	26.0 (19.2)	22.0 (16.2)	17	**1FT6084-8SF7■-■ ■ ■ ■**	4	48.0 (42.4)	25.0 (55.1)
		9.7 (13.0)	35.0 (25.8)	31.0 (22.8)	24.5	**1FT6086-8SF7■-■ ■ ■ ■**	4	66.5 (58.8)	30.0 (66.2)
	100	15.7 (21.1)	65.0 (47.9)	50.0 (36.9)	35	**1FT6105-8SF7■-■ ■ ■ ■**	4	168 (148)	45.5 (100)
		22 (29.5)	90.0 (66.3)	70.0 (51.6)	53	**1FT6108-8SF7■-■ ■ ■ ■**	4	260 (230)	61.5 (135)
	132	28.3 (38.0)	110 (81.1)	90.0 (66.3)	62	**1FT6132-6SF71-■ ■ ■ ■**	3	430 (380)	91.0 (200)
		34.6 (46.4)	140 (103)	110 (81.1)	72	**1FT6134-6SF71-■ ■ ■ ■**	3	547 (484)	106 (233)
		45.5 (61.0)	175 (129)	145 (106)	104	**1FT6136-6SF71-■ ■ ■ ■**	3	664 (587)	123 (271)
4500	80	9.4 (12.6)	26.0 (19.2)	20.0 (14.7)	24.5	**1FT6084-8SH7■-■ ■ ■ ■**	4	48.0 (42.4)	25.0 (55.1)
		12.7 (17.0)	35.0 (25.8)	27.0 (19.9)	31.5	**1FT6086-8SH7■-■ ■ ■ ■**	4	66.5 (58.8)	30.0 (66.2)
	100	18.8 (25.2)	65.0 (47.9)	40.0 (29.9)	41	**1FT6105-8SH7■-■ ■ ■ ■**	4	168 (148)	45.5 (100)
6000	80	10.7 (14.4)	26.0 (19.2)	17.0 (12.5)	25.5	**1FT6084-8SK7■-■ ■ ■ ■**	4	48.0 (42.4)	25.0 (55.1)
		13.8 (18.5)	35.0 (25.8)	22.0 (16.2)	29	**1FT6086-8SK7■-■ ■ ■ ■**	4	66.5 (58.8)	30.0 (66.2)

Type of construction:	IM B5	1
	IM B14[3] (Not for 1FT613)	2
Connector outlet direction: (Not for 1FT6136-6SF71)	Transverse right	1
	Transverse left	2
	Axial NDE (Not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3)	3
	Axial DE	4
Terminal box/ cable entry: (Only for 1FT61)	Transverse/from right	5
	Transverse/from left	6
	Axial/from NDE	7
	Axial/from DE	8
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	A
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)[1]	E
	Multi-pole resolver	S
	2-pole resolver	T
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	D
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)[1]	F
	15 bit resolver (R15DQ)	U
	14 bit resolver (R14DQ)	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
Fitted key and keyway	Tolerance R	Without	D
Fitted key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration magnitude:	Degree of protection:[4]	
Grade A	IP64	0
Grade A	IP65	1
Grade R	IP64	3
Grade R	IP65	4

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Efficiency[5]	Static current	Calculated power	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
				Rated output current[6]	Booksize format For additional versions and components, see SINAMICS S120 drive system	Power connector	Cable cross-section[7]	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.
1FT6084-8SF7...	91	18.2	8.2 (11.0)	18[8]	6SL312■-■TE21-8AA3	1.5	4 × 2.5	6FX■002-5■S31-....
1FT6086-8SF7...	91	25	11.0 (14.8)	30	6SL312■-1TE23-0AA3	1.5	4 × 4	6FX■002-5■S41-....
1FT6105-8SF7...	94	42	20.4 (27.4)	45	6SL312■-1TE24-5AA3	3	4 × 10	6FX■002-5■S14-....
1FT6108-8SF7...	94	62	28.3 (37.9)	60[8]	6SL312■-1TE26-0AA3	3	4 × 16	6FX■002-5■S23-....
1FT6132-6SF7...	95	69	34.6 (46.4)	85	6SL312■-1TE28-5AA3	3	4 × 25	6FX■002-5DG33-....
1FT6134-6SF7...	96	83	44.0 (59.0)	85	6SL312■-1TE28-5AA3	3	4 × 25	6FX■002-5DG33-....
1FT6136-6SF7...	96	110	55.0 (73.8)	132	6SL312■-1TE31-3AA3	Terminal box (max. 4 × 35)		
1FT6084-8SH7...	91	26	12.3 (16.5)	30	6SL312■-1TE23-0AA3	1.5	4 × 4	6FX■002-5■S41-....
1FT6086-8SH7...	93	38	16.5 (22.1)	45	6SL312■-1TE24-5AA3	3	4 × 10	6FX■002-5■S14-....
1FT6105-8SH7...	94	59	30.6 (41.0)	85	6SL312■-1TE28-5AA3	3	4 × 16	6FX■002-5■S23-....
1FT6084-8SK7...	91	35	16.3 (21.9)	45	6SL312■-1TE24-5AA3	1.5	4 × 10	6FX■002-5■S64-....
1FT6086-8SK7...	93	44	22.0 (29.5)	45	6SL312■-1TE24-5AA3	3	4 × 10	6FX■002-5■S14-....

Cooling:		**Power cable:**	
Internal air cooling	0	MOTION-CONNECT 800	8
External air cooling	1	MOTION-CONNECT 500	5
Motor Module:		Without brake cores	C
Single Motor Module	1	With brake cores	D
Double Motor Module	2	Length code	....

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

Notes on forced ventilation

	Motors 1FT608/1FT610	Motors 1FT613
Direction of air flow	From NDE to DE	From DE to NDE
Connection	Power connector size 1 Cable, pre-assembled 6FX.002-5CA01-....	Terminal box Cable, by the meter 6FX.008-1BB11-....
Pin and terminal assignments	Pin 1: L1, Pin 2: N	U1/L1: V2/L2: W3/L3
Supply voltage	220 V 1 AC, 50 Hz 260 V 1 AC, 60 Hz	380 ... 420 V 3 AC, 50 Hz 380 ... 480 V 3 AC, 60 Hz
Fan current, max.	0.3 A	0.4 A
Weight of the fan module, approx.	4.8 kg (10.6 lb)	5.6 kg (12.3 lb)
Sound pressure level L_{pA} (1 m)	70 dB	74 dB

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

2) Not for use in environments containing electrically conductive dust. Forced ventilation cannot be used in the presence of flammable, corrosive, electrically conductive or explosive dust.

3) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

4) The degree of protection refers to the motor. The built-on fan meets the requirements of degree of protection IP54.

5) Optimum efficiency in continuous duty.

6) With default setting of the pulse frequency.

7) 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).

8) 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.

9) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT6 synchronous motors Standard type	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			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)
Water cooling[1] – SH 63/SH 80/SH 100									
1500	100	18.2 (24.4)	119 (87.7)	116 (85.5)	43	**1FT6108-8WB7■-■■■■**	4	260 (230)	61.5 (135)
2000	100	17.2 (23.1)	85.0 (62.6)	82.0 (60.4)	60	**1FT6105-8WC7■-■■■■**	4	168 (148)	45.5 (100)
		24.1 (32.3)	119 (87.7)	115 (84.8)	57	**1FT6108-8WC7■-■■■■**	4	260 (230)	61.5 (135)
3000	63	3.2 (4.3)	10.2 (7.5)	10.0 (7.4)	6.9	**1FT6062-6WF7■-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		5.1 (6.8)	16.2 (11.9)	16.0 (11.8)	10.3	**1FT6064-6WF7■-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	11.0 (14.8)	35.0 (25.8)	35.0 (25.8)	27	**1FT6084-8WF7■-■■■■**	4	48.0 (42.4)	21.0 (46.3)
		14.5 (19.4)	47.0 (34.6)	46.0 (33.9)	37	**1FT6086-8WF7■-■■■■**	4	66.5 (58.8)	26.0 (57.3)
	100	24.5 (32.9)	85.0 (62.6)	78.0 (57.5)	82	**1FT6105-8WF7■-■■■■**	4	168 (148)	45.5 (100)
		34.2 (45.9)	119 (87.7)	109 (80.3)	81	**1FT6108-8WF7■-■■■■**	4	260 (230)	61.5 (135)

Type of construction:	IM B5	1
	IM B14[2] (Not for 1FT613)	2
Connector outlet direction:	Transverse right (Not for 1FT606)	1
	Transverse left (Not for 1FT606)	2
	Axial NDE (Not for 1FT6 with DRIVE-CLiQ and power connec. size 3)	3
	Axial DE (1FT6062 only with water connection side or below)[3]	4
Terminal box/ cable entry: (Only for 1FT61)	Transverse/from right	5
	Transverse/from left	6
	Axial/from NDE	7
	Axial/from DE	8
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	A
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)	E
	Multi-pole resolver	S
	2-pole resolver	T
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	D
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)	F
	15 bit resolver (R15DQ)	U
	14 bit resolver (R14DQ)	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
Fitted key and keyway	Tolerance R	Without	D
Fitted key and keyway	Tolerance R	With	E
Plain shaft	Tolerance N	Without	G
Plain shaft	Tolerance N	With	H
Plain shaft	Tolerance R	Without	K
Plain shaft	Tolerance R	With	L

Vibration magnitude:	Degree of protection:	
Grade A	IP64	0
Grade A	IP65	1
Grade A	IP67 (Not for 1FT610.-8WF7.- with terminal box)	2
Grade A	IP68 (Not for 1FT610.-8WF7.- with terminal box)	6
Grade R	IP64	3
Grade R	IP65	4
Grade R	IP67 (Not for 1FT610.-8WF7.- with terminal box)	5
Grade R	IP68 (Not for 1FT610.-8WF7.- with terminal box)	7

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[4]	Static current	Calculated power P_{calc}[8]	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 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	mm²	Order No.
1FT6108-8WB7...	91	43	18.7 (25.1)	45	**6SL312■-1TE24-5AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6105-8WC7...	91	58	17.8 (23.9)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**
1FT6108-8WC7...	93	57	24.9 (33.4)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**
1FT6062-6WF7...	84	6.9	3.2 (4.3)	9	**6SL312■-■TE21-0AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6WF7...	87	10.3	5.1 (6.8)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6084-8WF7...	89	24.5	11.0 (14.8)	30	**6SL312■-1TE23-0AA3**	1.5	4 × 4	**6FX■002-5■S41-....**
1FT6086-8WF7...	89	34	14.8 (19.9)	45	**6SL312■-1TE24-5AA3**	1.5	4 × 10	**6FX■002-5■S64-....**
1FT6105-8WF7...	93	83	26.7 (35.8)	85	**6SL312■-1TE28-5AA3**	3	4 × 25	**6FX5 002-5DG33-....**
1FT6108-8WF7...	95	86	37.4 (50.2)	85[7]	**6SL312■-1TE28-5AA3**	3	4 × 35	**6FX5 002-5DG43-....**

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 under Connection system MOTION-CONNECT.

Notes on water cooling for 1FT6 motors

Inlet temperature of cooling water, max.	30 °C (86 °F)
Cooling water throughput, min.	5 l/min (5 l = 1.1 British gallons/1.32 US gallons)
Pressure at motor inlet	p_{max} = 2.5 bar
Cooling water connection	G 3/8“
Coolant	Water with up to 25 % corrosion protection (recommendation: Tyfocor)
Loss of pressure between inlet and outlet	< 0.1 bar

7

1) Delivered as standard with water connection at top.

2) Same flange as for IM B5 type of construction, but with metric threaded insert in the four mounting holes.

3) See options.

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) 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.

8) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT6 synchronous motors Standard type	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			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)
Water cooling[1] – SH 63/SH 80									
4500	63	4.7 (6.3)	10.2 (7.5)	10.0 (7.4)	9.6	**1FT6062-6WH71-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		7.5 (10.1)	16.2 (11.9)	16.0 (11.8)	15.2	**1FT6064-6WH71-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	16.5 (22.1)	35.0 (25.8)	35.0 (25.8)	39	**1FT6084-8WH71-■■■■**	4	48.0 (42.4)	21.0 (46.3)
		21.2 (28.4)	47.0 (34.6)	45.0 (33.2)	53	**1FT6086-8WH71-■■■■**	4	66.5 (58.8)	26.0 (57.3)
6000	63	6.2 (8.3)	10.2 (7.5)	9.8 (7.2)	12.7	**1FT6062-6WK71-■■■■**	3	8.5 (7.52)	9.5 (20.9)
		9.9 (13.3)	16.2 (11.9)	15.8 (11.6)	20	**1FT6064-6WK71-■■■■**	3	13.0 (11.5)	12.5 (27.6)
	80	21.4 (28.7)	35.0 (25.8)	34.0 (25.1)	51	**1FT6084-8WK71-■■■■**	4	48.0 (42.2)	21.0 (46.3)
		27.7 (37.2)	47.0 (34.6)	44.0 (32.4)	58	**1FT6086-8WK71-■■■■**	4	66.5 (58.8)	26.0 (57.3)

Type of construction:	IM B5	**1**
Connector outlet direction:	Transverse right (Not for 1FT606)	**1**
	Transverse left (Not for 1FT606)	**2**
	Axial NDE (Not for 1FT6 with DRIVE-CLiQ and power connector size 3)	**3**
	Axial DE (Not for 1FT6084-8WK)/(1FT6062 only with water connection on side or below)[2]	**4**
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R)	**A**
	Absolute encoder EnDat 2048 S/R (encoder AM2048S/R)	**E**
	Multi-pole resolver	**S**
	2-pole resolver	**T**
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ)	**D**
	22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ)	**F**
	15 bit resolver (R15DQ)	**U**
	14 bit resolver (R14DQ)	**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**
Fitted key and keyway	Tolerance R	Without	**D**
Fitted key and keyway	Tolerance R	With	**E**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance N	With	**H**
Plain shaft	Tolerance R	Without	**K**
Plain shaft	Tolerance R	With	**L**

Vibration magnitude:	Degree of protection:	
Grade A	IP64	**0**
Grade A	IP65	**1**
Grade A	IP67	**2**
Grade A	IP68	**6**
Grade R	IP64	**3**
Grade R	IP65	**4**
Grade R	IP67	**5**
Grade R	IP68	**7**

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[3]	Static current	Calculated power P_{calc}[6]	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 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.
1FT6062-6WH7...	88	9.7	4.8 (6.4)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6WH7...	90	15.4	7.6 (10.2)	18	**6SL312■-■TE21-8AA3**	1	4 × 2.5	**6FX■002-5■S11-....**
1FT6084-8WH7...	91	37	16.5 (22.1)	45	**6SL312■-1TE24-5AA3**	1.5	4 × 10	**6FX■002-5■S64-....**
1FT6086-8WH7...	93	52	22.1 (29.6)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**
1FT6062-6WK7...	90	12.9	6.4 (8.6)	18	**6SL312■-■TE21-8AA3**	1	4 × 1.5	**6FX■002-5■S01-....**
1FT6064-6WK7...	92	20.5	10.2 (13.7)	30	**6SL312■-1TE23-0AA3**	1	4 × 2.5	**6FX■002-5■S11-....**
1FT6084-8WK7...	92	47	22.0 (29.5)	60	**6SL312■-1TE26-0AA3**	3	4 × 10	**6FX■002-5■S14-....**
1FT6086-8WK7...	93	59	29.5 (39.6)	60	**6SL312■-1TE26-0AA3**	3	4 × 16	**6FX■002-5■S23-....**

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 under Connection system MOTION-CONNECT.

Notes on water cooling for 1FT6 motors:

Inlet temperature of cooling water, max.	30 °C (86 °F)
Cooling water throughput, min.	5 l/min (5 l = 1.1 British gallons/1.32 US gallons)
Pressure at motor inlet	p_{max} = 2.5 bar
Cooling water connection	G 3/8“
Coolant	Water with up to 25 % corrosion protection (recommendation: Tyfocor)
Loss of pressure between inlet and outlet	< 0.1 bar

7

1) Delivered as standard with water connection at top.
2) See options.
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) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$

1FT6 motors, standard type
Water cooling

Selection and ordering

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT6 synchronous motors Standard type	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			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)
Water cooling – SH 132									
1500	132	23.6 (31.6)	155 (1372)	150 (1328)	58	**1FT6132-6WB76-■ ■ ■ ■**	3	430 (381)	90 (198)
		29.1 (39.0)	200 (1770)	185 (1637)	67	**1FT6134-6WB76-■ ■ ■ ■**	3	547 (484)	103 (227)
		36.1 (48.4)	240 (2124)	230 (2036)	90	**1FT6136-6WB76-■ ■ ■ ■**	3	665 (589)	120 (265)
		45.5 (61.0)	300 (2655)	290 (2567)	112	**1FT6138-6WB76-■ ■ ■ ■**	3	845 (748)	137 (302)
2500	132	35.3 (47.3)	155 (1372)	135 (1195)	82	**1FT6132-6WD76-■ ■ ■ ■**	3	430 (381)	90 (198)
		48.4 (64.9)	200 (1770)	185 (1637)	115	**1FT6134-6WD76-■ ■ ■ ■**	3	547 (484)	103 (227)
		57.6 (77.2)	240 (2124)	220 (2036)	149	**1FT6136-6WD76-■ ■ ■ ■**	3	665 (589)	120 (265)
		72.0 (96.6)	300 (2655)	275 (2434)	162	**1FT6138-6WD76-■ ■ ■ ■**	3	845 (748)	137 (302)

Type of construction:	IM B35	**6**
Terminal box/ cable entry:	Transverse/from right Transverse/from left Axial/from NDE Axial/from DE	**5** **6** **7** **8**
Encoder systems for motors without DRIVE-CLiQ interface:	Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks (encoder IC2048S/R) Absolute encoder EnDat 2048 S/R (encoder AM2048S/R) Multi-pole resolver 2-pole resolver	**A** **E** **S** **T**
Encoder systems for motors with DRIVE-CLiQ interface:	22 bit incremental encoder + commutation position (encoder IC22DQ) 22 bit absolute encoder single-turn +12 bit multi-turn (encoder AM22DQ) 15 bit resolver (R15DQ) 14 bit resolver (R14DQ)	**D** **F** **U** **P**

Shaft extension:	Shaft and flange accuracy:	Holding brake:	
Fitted key and keyway	Tolerance N	Without	**A**
Fitted key and keyway	Tolerance R	Without	**D**
Plain shaft	Tolerance N	Without	**G**
Plain shaft	Tolerance R	Without	**K**

Vibration magnitude:	Degree of protection:	
Grade A	IP64	**0**
Grade A	IP65	**1**
Grade R	IP64	**3**
Grade R	IP65	**4**

To select the type of construction and degree of protection, see Selection guides.

Motor type (repeated)	Effi-ciency[1]	Static current	Calculated power P_{calc}[4]	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via terminal box type gk630		
				Rated output current[2]	Booksize format For additional versions and components, see SINAMICS S120 drive system	Cable entry Terminal box	Connecta-ble cable cross-sec-tion, max.	Power cable by the meter
	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.
1FT6132-6WB7 ...	95	58	24.3 (32.6)	60	**6SL312■-1TE26-0AA3**	2 × M32 × 1.5	2 × 4 × 16	**6FX■008-1BB61-....**
1FT6134-6WB7 ...	96	73	31.4 (42.1)	85	**6SL312■-1TE28-5AA3**	2 × M40 × 1.5	2 × 4 × 35	**6FX■008-1BB35-....**
1FT6136-6WB7 ...	96	92	37.7 (50.6)	132	**6SL312■-1TE31-3AA3**	2 × M50 × 1.5	2 × 4 × 50	**6FX■008-1BB50-....**
1FT6138-6WB7 ...	96	112	47.1 (63.2)	132	**6SL312■-1TE31-3AA3**	2 × M50 × 1.5	2 × 4 × 50	**6FX■008-1BB50-....**
1FT6132-6WD7 ...	95	92	40.6 (54.4)	85[3]	**6SL312■-1TE28-5AA3**	2 × M40 × 1.5	2 × 4 × 35	**6FX■008-1BB35-....**
1FT6134-6WD7 ...	96	122	52.4 (70.3)	132	**6SL312■-1TE31-3AA3**	2 × M50 × 1.5	2 × 4 × 50	**6FX■008-1BB50-....**
1FT6136-6WD7 ...	96	158	62.8 (84.2)	200	**6SL312■-1TE32-0AA3**	2 × M50 × 1.5	2 × 4 × 50	**6FX■008-1BB50-....**
1FT6138-6WD7 ...	96	167	78.5 (105)	200	**6SL312■-1TE32-0AA3**	2 × M50 × 1.5	2 × 4 × 50	**6FX■008-1BB50-....**

Cooling:		**Power cable:**	
Internal air cooling	**0**	MOTION-CONNECT 800	**8**
External air cooling	**1**	MOTION-CONNECT 500	**5**
Motor Module:		Length code	**....**
Single Motor Module	**1**		

Information about the cables can be found under Connection system MOTION-CONNECT

Notes on water cooling for 1FT6 motors:

Inlet temperature of cooling water, max.	30 °C (86 °F)
Cooling water throughput, min.	8 l/min (8 l = 1.76 British gallons/2.11 US gallons)
Pressure at motor inlet	p_{max} = 6 bar
Cooling water connection	G 3/8“
Coolant	Water with up to 25 % corrosion protection (recommendation: Tyfocor)
Loss of pressure between inlet and outlet	< 0.1 bar

7

1) Optimum efficiency in continuous duty.

2) With default setting of the pulse frequency.

3) 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.

4) $P_{calc}\,[kW] = \frac{M_0\,[Nm] \times n_{rated}}{9550}$ $\quad P_{calc}\,[HP] = \frac{M_0\,[lb_f\text{-}in] \times n_{rated}}{63000}$