

Synchronous motors

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 Natural cooling Core type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)	
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			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)	
2 000	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)	
3 000	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)		
4 500	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)	
6 000	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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾			A E				
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn 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				

Selection and ordering data

Motor type (continued)	Static current	Calculated power P_{calc} ⁴⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	I_0 at M_0 $\Delta T=100$ K	P_{calc} for M_0 $\Delta T=100$ K	Rated output current ³⁾	Booksized format	Power connector	Cable cross- section ²⁾	Pre-assembled cable
	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT6102-1AC7...	12.1	5.7 (7.6)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6105-1AC7...	21.4	10.5 (14.8)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6044-1AF7...	3	1.6 (2.2)	3	6SL312-1-TE13-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6062-1AF7...	4.1	1.9 (2.6)	5	6SL312-1-TE15-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6064-1AF7...	6.1	3.0 (4.0)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6082-1AF7...	9.6	4.1 (5.5)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6084-1AF7...	13.2	6.3 (8.5)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6086-1AF7...	16.4	8.5 (11.4)	18	6SL312-1-TE21-8AA3	1.5	4 x 2.5	6FX002-5S31-....
1FT6062-1AH7...	5.7	2.8 (3.8)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6064-1AH7...	9.0	4.5 (6.0)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6084-1AH7...	19.8	9.4 (12.6)	18	6SL312-1-TE21-8AA3	1.5	4 x 4	6FX002-5S41-....
1FT6086-1AH7...	23.3	12.7 (17.0)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6034-1AK7...	2.6	1.3 (1.7)	3	6SL312-1-TE13-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6084-1AK7...	24.1	12.6 (16.9)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Double Motor Module				2			
Type of power cable:							
MOTION-CONNECT 800						8	
MOTION-CONNECT 500						5	
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

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

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 (104 °F).

³⁾ With default setting of the pulse frequency.

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

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 Natural cooling Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			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)
1 500	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	1FT6132-6AB7 1 - ■ ■ ■ ■ ■	3	430 (380)	85 (187)
		11.8 (15.8)	95 (70)	75 (55.3)	24	1FT6134-6AB7 1 - ■ ■ ■ ■ ■	3	547 (484)	100 (220)
		13.8 (18.5)	115 (84.8)	88 (64.9)	27	1FT6136-6AB7 1 - ■ ■ ■ ■ ■	3	664 (587)	117 (258)
Type of construction:			IM B5 IM B14 ²⁾ (not for 1FT613)			1			
						2			
Connector outlet direction:			Transverse right Transverse left Axial NDE (not for 1FT613) Axial DE			1			
						2			
						3			
						4			
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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾ Multi-pole resolver 2-pole resolver			A			
						E			
						S			
						T			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn ¹⁾ 15 bit resolver 14 bit resolver			D			
						F			
						U			
						P			
Shaft extension:			Shaft and flange accuracy:			Holding brake:			
Fitted key and keyway			Tolerance N			without			
Fitted key and keyway			Tolerance N			with			
Fitted key and keyway			Tolerance R			without			
Fitted key and keyway			Tolerance R			with			
Plain shaft			Tolerance N			without			
Plain shaft			Tolerance N			with			
Plain shaft			Tolerance R			without			
Plain shaft			Tolerance R			with			
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 degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current	Calculated power ⁵⁾ P_{calc}	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	I_0 at M_0 $\Delta T=100$ K	P_{calc} for M_0 $\Delta T=100$ K	Rated output current ⁴⁾ I_{rated}	Booksizes format Order No.	Power connector	Cable cross- section ³⁾ mm ²	Pre-assembled cable Order No.
1FT6102-8AB7...	8.7	4.2 (5.6)	9	6SL312-1-TE21-0AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6105-8AB7...	16.0	7.9 (10.6)	18	6SL312-1-TE21-8AA3	1.5	4 x 2.5	6FX002-5S31-....
1FT6108-8AB7...	22.3	11.0 (14.8)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6132-6AB7...	21.6	11.8 (15.8)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6134-6AB7...	27.0	14.9 (20.0)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6136-6AB7...	34	18.1 (24.3)	45	6SL312-1-TE24-5AA3	1.5	4 x 10	6FX002-5S64-....
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Double Motor Module				2			
Type of power cable:							
MOTION-CONNECT 800						8	
MOTION-CONNECT 500						5	
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

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

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

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⁾ With default setting of the pulse frequency.

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

Synchronous motors

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 Natural cooling Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100$ K	M_0 at $\Delta T=100$ K	M_{rated} at $\Delta T=100$ K	I_{rated} at $\Delta T=100$ K	Order No.		J	m
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A			10^{-4} kgm ² (10^{-3} lb _f -in-s ²)	kg (lb)
2 000	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	1FT6132-6AC7 1 - ■■■■	3	430 (380)	85.0 (187)
		13.6 (18.2)	95 (70)	65 (47.9)	27	1FT6134-6AC7 1 - ■■■■	3	547 (484)	100 (220)
		15.5 (20.8)	115 (84.8)	74 (54.5)	30	1FT6136-6AC7 1 - ■■■■	3	664 (587)	117 (258)

Type of construction:		IM B5 IM B14 ²⁾ (not for 1FT613)	1 2
Connector outlet direction:		Transverse right (not for 1FT606) Transverse left (not for 1FT606) Axial NDE (not for 1FT613) Axial DE	1 2 3 4
Terminal box/ cable entry: (only for 1FT61)		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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾ Multi-pole resolver 2-pole resolver	A E S T
Encoder systems for motors with DRIVE-CLiQ interface:		22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn ¹⁾ 15 bit resolver 14 bit resolver	D F U P
Shaft extension:	Shaft and flange accuracy:	Holding brake:	A B D E G H K L
Fitted key and keyway	Tolerance N	without	
Fitted key and keyway	Tolerance N	with	
Fitted key and keyway	Tolerance R	without	
Fitted key and keyway	Tolerance R	with	
Plain shaft	Tolerance N	without	
Plain shaft	Tolerance N	with	
Plain shaft	Tolerance R	without	0 1 2 6 3 4 5 7
Plain shaft	Tolerance R	with	
Vibration magnitude:		Degree of protection:	
Grade A	IP64		
Grade A	IP65		
Grade A	IP67		
Grade A	IP68		
Grade R	IP64		
Grade R	IP65		
Grade R	IP67		
Grade R	IP68		

To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current	Calculated power $P_{calc}^{5)}$	SINAMICS S120 Motor Module		Power cable with complete shield		
	I_0 at M_0 $\Delta T=100$ K	P_{calc} for M_0 $\Delta T=100$ K	Rated output current ⁴⁾	Booksize format	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A	Order No.	Power connector	Cable cross-section ³⁾	Pre-assembled cable
					Size	mm ²	Order No.
1FT6061-6AC7...	1.9	0.84 (1.1)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6062-6AC7...	2.7	1.3 (1.7)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6064-6AC7...	4.2	2.0 (2.7)	5	6SL312- - TE15-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6081-8AC7...	3.9	1.7 (2.3)	5	6SL312- - TE15-0AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6082-8AC7...	6.6	2.7 (3.6)	9	6SL312- - TE21-0AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6084-8AC7...	8.8	4.2 (5.6)	9	6SL312- - TE21-0AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6086-8AC7...	11.3	5.7 (7.6)	18	6SL312- - TE21-8AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6102-8AC7...	12.1	5.7 (7.6)	18	6SL312- - TE21-8AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6105-8AC7...	21.4	10.5 (14.8)	30	6SL312- - 1 TE23-0AA3	1.5	4 x 4	6FX002-5 S41-....
1FT6108-8AC7...	29	14.7 (19.7)	30	6SL312- - 1 TE23-0AA3	1.5	4 x 6	6FX002-5 S51-....
1FT6132-6AC7...	29	15.7 (21.1)	30	6SL312- - 1 TE23-0AA3	1.5	4 x 6	6FX002-5 S51-....
1FT6134-6AC7...	36	19.9 (26.7)	45	6SL312- - 1 TE24-5AA3	1.5	4 x 10	6FX002-5 S64-....
1FT6136-6AC7...	42	24.1 (32.3)	45	6SL312- - 1 TE24-5AA3	3	4 x 16	6FX002-5 S14-....
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Double Motor Module				2			
Type of power cable:							
MOTION-CONNECT 800					8		
MOTION-CONNECT 500					5		
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

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) 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) With default setting of the pulse frequency.

5) $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [HP] = \frac{M_0 [lb\cdot in] \times n_{rated}}{63000}$

Synchronous motors

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 Natural cooling Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	Order No.		J	m
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A			10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
3 000	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
IM B14²⁾ (not for 1FT604/1FT613)

Connector outlet direction: Transverse right (not for 1FT604/1FT606)
Transverse left (not for 1FT604/1FT606)
Axial NDE (not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3)
Axial DE

**Terminal box/
cable entry:** Transverse/from right
Transverse/from left
(only for 1FT61)
Axial/from NDE
Axial/from DE

**Encoder systems for motors
without DRIVE-CLiQ interface:** Incremental encoder sin/cos 1 V_{pp} 2 048 S/R
Absolute encoder EnDat 2 048 S/R¹⁾
Multi-pole resolver
2-pole resolver

**Encoder systems for motors
with DRIVE-CLiQ interface:** 22 bit incremental encoder
Absolute encoder, 22 bit single-turn + 12 bit multi-turn¹⁾
15 bit resolver
14 bit resolver

Shaft extension: Fitted key and keyway
Fitted key and keyway
Fitted key and keyway
Fitted key and keyway
Plain shaft
Plain shaft
Plain shaft
Plain shaft

Shaft and flange accuracy: Tolerance N
Tolerance N
Tolerance R
Tolerance R
Tolerance N
Tolerance N
Tolerance R
Tolerance R

Holding brake: without
with
without
with
without
with
without
with

Vibration magnitude: Grade A
Grade A
Grade A
Grade A
Grade R
Grade R
Grade R
Grade R

Degree of protection: IP64
IP65
IP67
IP68
IP64
IP65
IP67
IP68

1
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A
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7

To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}}^{(6)}$	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	I_0 at M_0 $\Delta T = 100 \text{ K}$	P_{calc} for M_0 $\Delta T = 100 \text{ K}$	Rated output current ⁽⁵⁾	Booksized format	Power connector	Cable cross-section ⁽⁴⁾	Pre-assembled cable
	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT6041-4AF7 ...	1.9	0.8 (1.1)	3	6SL312-1-TE13-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6044-4AF7 ...	3.0	1.6 (2.2)	3	6SL312-1-TE13-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6061-6AF7 ...	2.7	1.3 (1.7)	3	6SL312-1-TE13-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6062-6AF7 ...	4.1	1.9 (2.6)	5	6SL312-1-TE15-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6064-6AF7 ...	6.1	3.0 (4.0)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6081-8AF7 ...	5.8	2.5 (3.4)	9	6SL312-1-TE21-0AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6082-8AF7 ...	9.6	4.1 (5.5)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6084-8AF7 ...	13.2	6.3 (8.5)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6086-8AF7 ...	16.4	8.5 (11.4)	18	6SL312-1-TE21-8AA3	1.5	4 x 2.5	6FX002-5S31-....
1FT6102-8AF7 ...	16.9	8.5 (11.4)	18	6SL312-1-TE21-8AA3	1.5	4 x 2.5	6FX002-5S31-....
1FT6105-8AF7 ...	32	15.7 (21.1)	30 ⁽³⁾	6SL312-1-TE23-0AA3	1.5	4 x 10	6FX002-5S61-....
1FT6108-8AF7 ...	41	22.0 (29.5)	45	6SL312-1-TE24-5AA3	3	4 x 10	6FX002-5S14-....
1FT6132-6AF7 ...	43	23.6 (31.7)	45	6SL312-1-TE24-5AA3	3	4 x 10	6FX002-5S14-....

Cooling:

Internal air cooling
External air cooling0
1

Motor Module:

Single Motor Module
Double Motor Module1
2

Type of power cable:

MOTION-CONNECT 800
MOTION-CONNECT 5008
5Without brake cores
With brake coresC
D

For length code as well as power and signal cables, see Connection system MOTION-CONNECT.

....

- 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) With the specified Motor Module, the motor cannot be fully utilized with M_0 at $\Delta T = 100 \text{ K}$ 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) 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) With default setting of the pulse frequency.

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

Synchronous motors

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 Natural cooling Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	Order No.		J	m
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A			10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
4 500	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 IM B14 ²⁾				1			
						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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾ Multi-pole resolver 2-pole resolver				A			
						E			
						S			
						T			
Encoder systems for motors with DRIVE-CLiQ interface:		22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn ¹⁾ 15 bit resolver 14 bit resolver				D			
						F			
						U			
						P			
Shaft extension:		Shaft and flange accuracy:				Holding brake:			
Fitted key and keyway		Tolerance N				without			
Fitted key and keyway		Tolerance N				with			
Fitted key and keyway		Tolerance R				without			
Fitted key and keyway		Tolerance R				with			
Plain shaft		Tolerance N				without			
Plain shaft		Tolerance N				with			
Plain shaft		Tolerance R				without			
Plain shaft		Tolerance R				with			
Vibration magnitude:		Degree of protection:				A			
Grade A		IP64				B			
Grade A		IP65				D			
Grade A		IP67				E			
Grade A		IP68				G			
Grade R		IP64				H			
Grade R		IP65				K			
Grade R		IP67				L			
Grade R		IP68				0			

To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T=100$ K	Calculated power $P_{calc}^{(6)}$ P_{calc} for M_0 $\Delta T=100$ K	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
			Rated output current ⁵⁾ I_{rated}	Booksize format Order No.	Power connector	Cable cross-section ⁴⁾ mm ²	Pre-assembled cable Order No.
1FT6061-6AH7...	4	1.9 (2.6)	5	6SL312-1-TE15-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6062-6AH7...	5.7	2.8 (3.8)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6064-6AH7...	9.0	4.5 (6.0)	9	6SL312-1-TE21-0AA3	1	4 x 1.5	6FX002-5S01-....
1FT6081-8AH7...	8.6	3.8 (5.1)	9	6SL312-1-TE21-0AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6082-8AH7...	14.8	6.1 (8.2)	18	6SL312-1-TE21-8AA3	1.5	4 x 1.5	6FX002-5S21-....
1FT6084-8AH7...	19.8	9.4 (12.6)	18 ³⁾	6SL312-1-TE21-8AA3	1.5	4 x 4	6FX002-5S41-....
1FT6086-8AH7...	23.3	12.7 (17.0)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6102-8AH7...	24.1	12.7 (17.0)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Double Motor Module				2			
Type of power cable:							
MOTION-CONNECT 800						8	
MOTION-CONNECT 500						5	
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

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) With the specified Motor Module, the motor cannot be fully utilized with M_0 at $\Delta T = 100$ 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) 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) With default setting of the pulse frequency.

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

Synchronous motors

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 Natural cooling Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	Order No.		J	m
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A			10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
6 000	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	1FT6061-6AK71 - ■■■■	3	6.0 (5.31)	8.0 (17.6)
		1.3 (1.7)	6.0 (4.4)	2.1 (1.5)	3.2	1FT6062-6AK71 - ■■■■	3	8.5 (7.52)	9.5 (20.9)
		1.3 (1.7)	9.5 (7.0)	2.1 (1.5)	3.5	1FT6064-6AK71 - ■■■■	3	13.0 (11.5)	12.5 (27.6)
	80	2.9 (4.0)	8.0 (5.9)	4.6 (3.4)	7.7	1FT6081-8AK71 - ■■■■	4	21.0 (18.5)	12.5 (27.6)
		3.5 (4.7)	13.0 (9.6)	5.5 (4.1)	9.1	1FT6082-8AK71 - ■■■■	4	30.0 (26.5)	15.0 (33.1)
		4.1 (5.5)	20.0 (14.7)	6.5 (4.8)	9.2	1FT6084-8AK71 - ■■■■	4	48.0 (42.4)	20.5 (45.2)

Type of construction: IM B5
IM B14²⁾ (not for 1FT602/1FT603/1FT604)

Connector outlet direction: Transverse right (not for 1FT603/1FT604/1FT606)
Transverse left (not for 1FT603/1FT604/1FT606)
Axial NDE
Axial DE

Encoder systems for motors without DRIVE-CLiQ interface: Incremental encoder sin/cos 1 V_{pp} 2 048 S/R
Absolute encoder EnDat 2 048 S/R¹⁾ (not for 1FT602)
Absolute encoder EnDat 512 S/R¹⁾ (only for 1FT602)
Multi-pole resolver
2-pole resolver

Encoder systems for motors with DRIVE-CLiQ interface: 22 bit incremental encoder
Absolute enc. 22 bit single-turn + 12 bit multi-turn¹⁾ (not for 1FT602)
Absolute enc. 20 bit single-turn + 12 bit multi-turn (only for 1FT602)
15 bit resolver
14 bit resolver

Shaft extension: Fitted key and keyway
Fitted key and keyway
Fitted key and keyway
Fitted key and keyway
Plain shaft
Plain shaft
Plain shaft
Plain shaft

Shaft and flange accuracy: Tolerance N
Tolerance N
Tolerance R
Tolerance R
Tolerance N
Tolerance N
Tolerance R
Tolerance R

Holding brake: without
with
without
with
without
with
without
with

Vibration magnitude: Grade A
Grade A
Grade A
Grade A
Grade R
Grade R
Grade R
Grade R

Degree of protection: IP64
IP65 (not for 1FT602)
IP67
IP68 (not for 1FT602)
IP64
IP65 (not for 1FT602)
IP67
IP68 (not for 1FT602)

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To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}}^{5)}$	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	I_0 at M_0 $\Delta T=100$ K	P_{calc} for M_0 $\Delta T=100$ K	Rated output current ⁴⁾	Booksize format	Power connector	Cable cross- section ³⁾	Pre-assembled cable
	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT6021-6AK7 ...	1.25	0.3 (0.4)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6024-6AK7 ...	1.25	0.5 (0.7)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6031-4AK7 ...	1.4	0.6 (0.8)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6034-4AK7 ...	2.6	1.3 (1.7)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6041-4AK7 ...	3.0	1.6 (2.2)	3	6SL312- - TE13-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6044-4AK7 ...	5.9	3.1 (4.2)	9	6SL312- - TE21-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6061-6AK7 ...	5.0	2.5 (3.4)	5	6SL312- - TE15-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6062-6AK7 ...	7.6	3.8 (5.1)	9	6SL312- - TE21-0AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6064-6AK7 ...	12.0	4.0 (5.4)	18	6SL312- - TE21-8AA3	1	4 x 1.5	6FX002-5 S01-....
1FT6081-8AK7 ...	11.1	5.0 (6.7)	18	6SL312- - TE21-8AA3	1.5	4 x 1.5	6FX002-5 S21-....
1FT6082-8AK7 ...	17.3	8.2 (11.0)	18	6SL312- - TE21-8AA3	1.5	4 x 2.5	6FX002-5 S31-....
1FT6084-8AK7 ...	24.1	12.6 (16.9)	30	6SL312- - 1 TE23-0AA3	1.5	4 x 4	6FX002-5 S41-....
Cooling:							
Internal air cooling							0
External air cooling							1
Motor Module:							
Single Motor Module							1
Double Motor Module							2
Type of power cable:							
MOTION-CONNECT 800							8
MOTION-CONNECT 500							5
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

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) 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) With default setting of the pulse frequency.

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

Synchronous motors

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 Forced ventilation ²⁾ Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			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)
1 500	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)
2 000	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 IM B14 ³⁾ (not for 1FT613)			1			
						2			
Connector outlet direction:			Transverse right Transverse left Axial NDE (not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3) Axial DE			1			
						2			
						3			
						4			
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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾ Multi-pole resolver 2-pole resolver			A			
						E			
						S			
						T			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn ¹⁾ 15 bit resolver 14 bit resolver			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 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⁾					0	
Grade A			IP64					1	
Grade A			IP65					3	
Grade R			IP64					4	
Grade R			IP65						

To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Forced ventilation

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T=100$ K A	Calculated power $P_{calc}^{7)}$ P_{calc} for M_0 $\Delta T=100$ K kW (HP)	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
			Rated output current ⁶⁾ I_{rated} A	Booksize format Order No.	Power connector Size	Cable cross- section ⁵⁾ mm ²	Pre-assembled cable Order No.
1FT6105-8SB7...	21.9	10.2 (13.7)	30	6SL312-1TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6108-8SB7...	30	14.1 (18.9)	30	6SL312-1TE23-0AA3	1.5	4 x 6	6FX002-5S51-....
1FT6132-6SB7...	36	17.3 (23.2)	45	6SL312-1TE24-5AA3	3	4 x 10	6FX002-5S14-....
1FT6134-6SB7...	44	22.0 (29.5)	60	6SL312-1TE26-0AA3	3	4 x 10	6FX002-5S14-....
1FT6136-6SB7...	55	27.5 (36.9)	60	6SL312-1TE26-0AA3	3	4 x 16	6FX002-5S23-....
1FT6105-8SC7...	30	13.6 (18.2)	30	6SL312-1TE23-0AA3	1.5	4 x 6	6FX002-5S51-....
1FT6108-8SC7...	41	18.8 (25.2)	45	6SL312-1TE24-5AA3	3	4 x 10	6FX002-5S14-....
1FT6132-6SC7...	47	23.0 (30.8)	60	6SL312-1TE26-0AA3	3	4 x 10	6FX002-5S14-....
1FT6134-6SC7...	58	29.3 (39.3)	60	6SL312-1TE26-0AA3	3	4 x 16	6FX002-5S23-....
1FT6136-6SC7...	77	36.6 (49.1)	85	6SL312-1TE28-5AA3	3	4 x 25	6FX002-5DS33-....
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Type of power cable:							
MOTION-CONNECT 800						8	
MOTION-CONNECT 500						5	
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

Notes on blower motor for forced ventilation:

	Shaft heights 80 and 100	Shaft height 132
Direction of air flow	From NDE to DE	From DE to NDE
Connection system	Connector size 1	Terminal box
Type of connecting cable	6FX.002-5CA01-....	6FX.008-1BB11-....
Pin and terminal assignments	Pin 1: L1, Pin 2: N	U1/L1: V2/L2: W3/L3
Supply voltage	1-phase 220/260 V AC, 50/60 Hz	3-phase 400/460 V AC, 50/60 Hz
Max. fan current	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) 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 default setting of the pulse frequency.

7) $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [HP] = \frac{M_0 [lb-ft] \times n_{rated}}{63000}$

Synchronous motors

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 Forced ventilation ²⁾ Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)			
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			J	m			
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A	Order No.		10^{-4}kgm^2 ($10^{-3}\text{lb}_f\text{-in-s}^2$)	kg (lb)			
3 000	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)				
4 500	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)			
6 000	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 IM B14 ³⁾ (not for 1FT613)			1						
						2						
Connector outlet direction (not for 1FT6136-6SF71):			Transverse right Transverse left Axial NDE (not for 1FT613 and not for 1FT6 with DRIVE-CLiQ and power connector size 3) Axial DE			1						
						2						
						3						
						4						
Terminal box/ cable entry: (only for 1FT61)			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} 2 048 S/R Absolute encoder EnDat 2 048 S/R ¹⁾ Multi-pole resolver 2-pole resolver			A						
						E						
						S						
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn ¹⁾ 15 bit resolver 14 bit resolver			D						
						F						
						U						
Shaft extension: Fitted key and keyway Fitted key and keyway Fitted key and keyway Fitted key and keyway Plain shaft Plain shaft Plain shaft Plain shaft			Shaft and flange accuracy: Tolerance N Tolerance N Tolerance R Tolerance R Tolerance N Tolerance N Tolerance R Tolerance R			Holding brake: without with without with without with without with			A			
									B			
									D			
									E			
									G			
									H			
									K			
									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 degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Forced ventilation

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100$ K A	Calculated power P_{calc} ⁸⁾ P_{calc} for M_0 $\Delta T = 100$ K kW (HP)	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
			Rated output current ⁷⁾ I_{rated} A	Booksized format Order No.	Power connector Size	Cable cross- section ⁶⁾ mm ²	Pre-assembled cable Order No.
1FT6084-8SF7...	18.2	8.2 (11.0)	18 ⁵⁾	6SL312-1-TE21-8AA3	1.5	4 x 2.5	6FX002-5S31-....
1FT6086-8SF7...	25	11.0 (14.8)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6105-8SF7...	42	20.4 (27.4)	45	6SL312-1-TE24-5AA3	3	4 x 10	6FX002-5S14-....
1FT6108-8SF7...	62	28.3 (37.9)	60 ⁵⁾	6SL312-1-TE26-0AA3	3	4 x 16	6FX002-5S23-....
1FT6132-6SF7...	69	34.6 (46.4)	85	6SL312-1-TE28-5AA3	3	4 x 25	6FX002-5DS33-....
1FT6134-6SF7...	83	44.0 (59.0)	85	6SL312-1-TE28-5AA3	3	4 x 25	6FX002-5DS33-....
1FT6136-6SF7...	110	55.0 (73.8)	132	6SL312-1-TE31-3AA3	Terminal box (max. 4 x 35)		
1FT6084-8SH7...	26	12.3 (16.5)	30	6SL312-1-TE23-0AA3	1.5	4 x 4	6FX002-5S41-....
1FT6086-8SH7...	38	16.5 (22.1)	45	6SL312-1-TE24-5AA3	3	4 x 10	6FX002-5S14-....
1FT6105-8SH7...	59	30.6 (41.0)	85	6SL312-1-TE28-5AA3	3	4 x 16	6FX002-5S23-....
1FT6084-8SK7...	35	16.3 (21.9)	45	6SL312-1-TE24-5AA3	1.5	4 x 10	6FX002-5S64-....
1FT6086-8SK7...	44	22.0 (29.5)	45	6SL312-1-TE24-5AA3	3	4 x 10	6FX002-5S14-....
Cooling: Internal air cooling External air cooling				0 1			
Motor Module: Single Motor Module Double Motor Module				1 2			
Type of power cable: MOTION-CONNECT 800 MOTION-CONNECT 500						8 5	
Without brake cores With brake cores							C D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

Notes on blower motor for forced ventilation:

	Shaft heights 80 and 100	Shaft height 132
Direction of air flow	From NDE to DE	From DE to NDE
Connection system	Connector size 1	Terminal box
Type of connecting cable	6FX.002-5CA01-....	6FX.008-1BB11-....
Pin and terminal assignments	Pin 1: L1, Pin 2: N	U1/L1: V2/L2: W3/L3
Supply voltage	1-phase 220/260 V AC, 50/60 Hz	3-phase 400/460 V AC, 50/60 Hz
Max. fan current	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) With the specified Motor Module, the motor cannot be fully utilized with M_0 at $\Delta T = 100$ 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.

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 default setting of the pulse frequency.

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

Synchronous motors

1FT6 Big Servo motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT6 synchronous motors Big Servo Forced ventilation ¹⁾	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}		P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			J	
rpm	SH	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)
1 500	160	60.5 (81.1)	425 (313)	385 (283)	136	1FT6163-8SB76 - ■■■■	4	2 300 (2 035)	170 (374)
		85 (114)	600 (442)	540 (398)	174	1FT6168-8SB76 - ■■■■	4	3 100 (2 743)	210 (463)
2 500	160	89 (119)	425 (313)	340 (250)	185	1FT6163-8SD76 - ■■■■	4	2 300 (2 035)	170 (374)
Type of construction: ³⁾			IM B35			6			
Terminal box at top, cable entry:			Transverse right Transverse left Axial NDE Axial DE			5 6 7 8			
Encoder systems for motors without DRIVE-CLiQ interface			Incremental encoder sin/cos 1 V _{pp} 2 048 S/R Absolute encoder EnDat 2 048 S/R Multi-pole resolver 2-pole resolver			A E S T			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn 15 bit resolver 14 bit resolver			D F U P			
Shaft extension:			Shaft and flange accuracy:			Holding brake:			
Fitted key and keyway			Tolerance N			without			
Fitted key and keyway			Tolerance R			without			
Plain shaft			Tolerance N			without			
Plain shaft			Tolerance R			without			
Vibration magnitude:						Degree of protection: ²⁾			
Grade A						IP64			
Grade A						IP65			
Grade R						IP64			
Grade R						IP65			

To select the degree of protection and type of construction, see the selection guide.

Selection and ordering data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}}^{6)}$	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via terminal box Type gk 630		
	I_0 at $\Delta T = 100 \text{ K}$	P_{calc} for M_0 $\Delta T = 100 \text{ K}$	Rated output current ⁵⁾ $I_{\text{rated}}^{4)}$	Booksize format Order No.	Cable entry terminal box	Max. con- nectable cable cross- section mm ²	Power cable/ By the meter Order No.
1FT6163-8SB76-....	151	66.8 (89.6)	200	6SL312 -1TE32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX 008-1BB50-....
1FT6168-8SB76-....	194	94.2 (126)	200	6SL312 -1TE32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX 008-1BB50-....
1FT6163-8SD76-....	226	111 (148)	200	6SL312 -1TE32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX 008-1BB50-....
Cooling:							
Internal air cooling							0
External air cooling							1
Motor Module:							
Single Motor Module							1
Type of power cable:							
MOTION-CONNECT 800							8
MOTION-CONNECT 500							5
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

Notes on blower motor for forced ventilation:

	Shaft height 160
Direction of air flow	From DE to NDE
Connection system	Terminal box
Type of connecting cable	6FX.008-1BB11-....
Pin and terminal assignments	U1/L1: V2/L2: W3/L3
Supply voltage	400/480 V 3 AC 50/60 Hz
Max. fan current	0.8 A
Sound pressure level L_{pA} (1 m)	74 dB

1) 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.

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

3) 1FT616 Big Servo motors of construction type IM B35 can be mounted on the flange only.

4) Motor Modules are assigned according to the motor rated current.

5) With default setting of the pulse frequency.

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

Synchronous motors

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 Water cooling ¹⁾²⁾ Standard type	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	Order No.		J	m
rpm		kW (HP)	Nm (lb _f -ft)	Nm (lb _f -ft)	A			10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
1 500	100	18.2 (24.4)	119 (87.7)	116 (85.5)	43	1FT6108-8WB7 ■ ■ ■ ■ ■	4	260 (230)	61.5 (135)
2 000	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)
3 000	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)
4 500	63	4.7 (6.3)	10.2 (7.5)	10.0 (7.4)	9.6	1FT6062-6WH7 ■ ■ ■ ■ ■	3	8.5 (7.52)	9.5 (20.9)
		7.5 (10.1)	16.2 (11.9)	16.0 (11.8)	15.2	1FT6064-6WH7 ■ ■ ■ ■ ■	3	13.0 (11.5)	12.5 (27.6)
	80	16.5 (22.1)	35.0 (25.8)	35.0 (25.8)	39	1FT6084-8WH7 ■ ■ ■ ■ ■	4	48.0 (42.4)	21.0 (46.3)
		21.2 (28.4)	47.0 (34.6)	45.0 (33.2)	53	1FT6086-8WH7 ■ ■ ■ ■ ■	4	66.5 (58.8)	26.0 (57.3)
6 000	63	6.2 (8.3)	10.2 (7.5)	9.8 (7.2)	12.7	1FT6062-6WK7 ■ ■ ■ ■ ■	3	8.5 (7.52)	9.5 (20.9)
		9.9 (13.3)	16.2 (11.9)	15.8 (11.6)	20	1FT6064-6WK7 ■ ■ ■ ■ ■	3	13.0 (11.5)	12.5 (27.6)
	80	21.4 (28.7)	35.0 (25.8)	34.0 (25.1)	51	1FT6084-8WK7 ■ ■ ■ ■ ■	4	48.0 (42.4)	21.0 (46.3)
		27.7 (37.2)	47.0 (34.6)	44.0 (32.4)	58	1FT6086-8WK7 ■ ■ ■ ■ ■	4	66.5 (58.8)	26.0 (57.3)

Type of construction:

 IM B5
 IM B14³⁾ (not for 1FT613)

 1
 2

Connector outlet direction:

 Transverse right (not for 1FT606)
 Transverse left (not for 1FT606)
 Axial NDE (not for 1FT6 with DRIVE-CLiQ and power connec. size 3)
 Axial DE (1FT6062 only with water connec. on side or below)²⁾

 1
 2
 3
 4

Terminal box/cable entry:
 (only for 1FT61)

 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} 2 048 S/R
 Absolute encoder EnDat 2 048 S/R
 Multi-pole resolver
 2-pole resolver

 A
 E
 S
 T

Encoder systems for motors with DRIVE-CLiQ interface:

 22 bit incremental encoder
 Absolute encoder, 22 bit single-turn + 12 bit multi-turn
 15 bit resolver
 14 bit resolver

 D
 F
 U
 P

Shaft extension:

 Fitted key and keyway
 Fitted key and keyway
 Fitted key and keyway
 Fitted key and keyway
 Plain shaft
 Plain shaft
 Plain shaft
 Plain shaft

Shaft and flange accuracy:

 Tolerance N
 Tolerance N
 Tolerance R
 Tolerance R
 Tolerance N
 Tolerance N
 Tolerance R
 Tolerance R

Holding brake:

 without
 with
 without
 with
 without
 with
 without
 with

 A
 B
 D
 E
 G
 H
 K
 L

Vibration magnitude:

 Grade A
 Grade A
 Grade A
 Grade A
 Grade R
 Grade R
 Grade R
 Grade R

Degree of protection:

 IP64
 IP65
 IP67 (not for 1FT61)
 IP68 (not for 1FT61)
 IP64
 IP65
 IP67 (not for 1FT61)
 IP68 (not for 1FT61)

 0
 1
 2
 6
 3
 4
 5
 7

To select the degree of protection and type of construction, see the selection guide.

1FT6 motors, standard type
Water cooling

Selection and ordering data

Motor type (continued)	Static current	Calculated power P_{calc} ⁷⁾	SINAMICS S120 Motor Module		Power cable with complete shield		
	I_0 at M_0 $\Delta T = 100 \text{ K}$	P_{calc} for M_0 $\Delta T = 100 \text{ K}$	Rated output current ⁶⁾	Booksize format	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A	Order No.	Power connector	Cable cross- section ⁵⁾	Pre-assembled cable
					Size	mm ²	Order No.
1FT6108-8WB7...	43	18.7 (25.1)	45	6SL312- 1TE24-5AA3	3	4 x 10	6FX 002-5 S14-....
1FT6105-8WC7...	58	17.8 (23.9)	60	6SL312- 1TE26-0AA3	3	4 x 16	6FX 002-5 S23-....
1FT6108-8WC7...	57	24.9 (33.4)	60	6SL312- 1TE26-0AA3	3	4 x 16	6FX 002-5 S23-....
1FT6062-6WF7...	6.9	3.2 (4.3)	9	6SL312- 1TE21-0AA3	1	4 x 1.5	6FX 002-5 S01-....
1FT6064-6WF7...	10.3	5.1 (6.8)	18	6SL312- 1TE21-8AA3	1	4 x 1.5	6FX 002-5 S01-....
1FT6084-8WF7...	24.5	11.0 (14.8)	30	6SL312- 1TE23-0AA3	1.5	4 x 4	6FX 002-5 S41-....
1FT6086-8WF7...	34	14.8 (19.9)	45	6SL312- 1TE24-5AA3	1.5	4 x 10	6FX 002-5 S64-....
1FT6105-8WF7...	83	26.7 (35.8)	85	6SL312- 1TE28-5AA3	3	4 x 25	6FX5 002-5DS33-....
1FT6108-8WF7...	86	37.4 (50.2)	85 ⁴⁾	6SL312- 1TE28-5AA3	3	4 x 35	6FX5 002-5DS43-....
1FT6062-6WH7...	9.7	4.8 (6.4)	18	6SL312- 1TE21-8AA3	1	4 x 1.5	6FX 002-5 S01-....
1FT6064-6WH7...	15.4	7.6 (10.2)	18	6SL312- 1TE21-8AA3	1	4 x 2.5	6FX 002-5 S11-....
1FT6084-8WH7...	37	16.5 (22.1)	45	6SL312- 1TE24-5AA3	1.5	4 x 10	6FX 002-5 S64-....
1FT6086-8WH7...	52	22.1 (29.6)	60	6SL312- 1TE26-0AA3	3	4 x 16	6FX 002-5 S23-....
1FT6062-6WK7...	12.9	6.4 (8.6)	18	6SL312- 1TE21-8AA3	1	4 x 1.5	6FX 002-5 S01-....
1FT6064-6WK7...	20.5	10.2 (13.7)	30	6SL312- 1TE23-0AA3	1	4 x 2.5	6FX 002-5 S11-....
1FT6084-8WK7...	47	22.0 (29.5)	60	6SL312- 1TE26-0AA3	3	4 x 10	6FX 002-5 S14-....
1FT6086-8WK7...	59	29.5 (39.6)	60	6SL312- 1TE26-0AA3	3	4 x 16	6FX 002-5DS23-....
Cooling:							
Internal air cooling							
External air cooling							
Motor Module:							
Single Motor Module							
Double Motor Module							
Type of power cable:							
MOTION-CONNECT 800							
MOTION-CONNECT 500							
Without brake cores							
With brake cores							
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

Notes on water cooling:

- Inlet temperature of cooling water: max. 30 °C (86 °F)
- Cooling water throughput: at least 5 l/min (1.32 US gallons)
- Pressure ahead of motor: $p_{\text{max}} = 3 \text{ bar}$ (43.5 psi)
- 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 (1.45 psi)

1) Delivered as standard with water connection at top.

2) Water connection on right side: Add **-Z** + order code
Q20 to order numberWater connection on left side: Add **-Z** + order code**Q21 to order number**Water connection below: Add **-Z** + order code**Q22 to order number.**

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

4) With the specified Motor Module, the motor cannot be fully utilized with M_0 at $\Delta T = 100 \text{ K}$ 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.

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 default setting of the pulse frequency.

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

Synchronous motors

1FT6 Big Servo motors Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT6 synchronous motors Big Servo Water cooling	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
n_{rated}	SH	P_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$			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)
1 500	132	23.6 (31.7)	155 (114)	150 (110)	58	1FT6132-6WB76 - ■■■■	3	430 (380)	90.0(198)
		29.1 (39.0)	200 (147)	185 (136)	67	1FT6134-6WB76 - ■■■■	3	547 (484)	103 (227)
		36.1 (48.4)	240 (176)	230 (169)	90	1FT6136-6WB76 - ■■■■	3	665 (588)	120 (264)
		45.5 (61.0)	300 (221)	290 (213)	112	1FT6138-6WB76 - ■■■■	3	845 (747)	137 (302)
	160	70.7 (94.8)	450 (331)	450 (331)	160	1FT6163-8WB76 - ■■■■	4	2 300 (2 035)	170 (374)
		108.4 (145.4)	700 (515)	690 (508)	221	1FT6168-8WB76 - ■■■■	4	3 100 (2 743)	210 (463)
2 500	132	35.3 (47.3)	155 (114)	135 (99.5)	82	1FT6132-6WD76 - ■■■■	3	430 (380)	90.0(198)
		48.4 (64.9)	200 (147)	185 (136)	115	1FT6134-6WD76 - ■■■■	3	547 (484)	103 (227)
		57.6 (77.2)	240 (176)	220 (162)	149	1FT6136-6WD76 - ■■■■	3	665 (588)	120 (264)
		72.0 (96.6)	300 (221)	275 (202)	162	1FT6138-6WD76 - ■■■■	3	845 (747)	137 (302)
	160	117.8 (158.0)	450 (331)	450 (331)	240	1FT6163-8WD76 - ■■■■	4	2 300 (2 035)	170 (374)
Type of construction: ¹⁾			IM B35			6			
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} 2 048 S/R Absolute encoder EnDat 2 048 S/R Multi-pole resolver 2-pole resolver			A E S T			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn 15 bit resolver 14 bit resolver			D F U P			
Shaft extension: Fitted key and keyway Fitted key and keyway Plain shaft Plain shaft			Shaft and flange accuracy: Tolerance N Tolerance R Tolerance N Tolerance R			Holding brake: without without without without		A D G K	
Vibration magnitude: Grade A Grade A Grade R Grade R			Degree of protection: IP64 IP65 IP64 IP65			0 1 3 4			

To select the degree of protection, see selection guide.

Selection and ordering data

Motor type (continued)	Static current	Calculated power P_{calc} ⁴⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via terminal box Type gk 630		
	I_0 at M_0 $\Delta T = 100 \text{ K}$	P_{calc} for M_0 $\Delta T = 100 \text{ K}$	Rated output current ²⁾	Booksize format	Cable cross-section terminal box	Max. con- nectable cable cross- section	Power cable By the meter
	A	kW (HP)	A	Order No.		mm ²	Order No.
1FT6132-6WB76-...	58	24.3 (23.6)	60	6SL312 -1TE 26-0AA3	2 x M32 x 1.5	2 x 4 x 16	6FX008-1BB61-....
1FT6134-6WB76-...	73	31.4 (42.1)	85	6SL312 -1TE 28-5AA3	2 x M40 x 1.5	2 x 4 x 35	6FX008-1BB35-....
1FT6136-6WB76-...	92	37.7 (50.6)	132	6SL312 -1TE 31-3AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6138-6WB76-...	112	47.1 (63.2)	132	6SL312 -1TE 31-3AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6163-8WB76-...	160	70.7 (94.8)	200	6SL312 -1TE 32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6168-8WB76-...	225	110 (147)	260	6SL3320 -1TE 32-6AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6132-6WD76-...	92	40.6 (54.4)	85 ³⁾	6SL312 -1TE 28-5AA3	2 x M40 x 1.5	2 x 4 x 35	6FX008-1BB35-....
1FT6134-6WD76-...	122	52.4 (70.3)	132	6SL312 -1TE 31-3AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6136-6WD76-...	158	62.8 (84.2)	200	6SL312 -1TE 32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6138-6WD76-...	167	78.5 (105)	200	6SL312 -1TE 32-0AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
1FT6163-8WD76-...	240	118 (158)	260	6SL3320 -1TE 32-6AA3	2 x M50 x 1.5	2 x 4 x 50	6FX008-1BB50-....
Cooling:							
Internal air cooling							
External air cooling							
Motor Module:							
Single Motor Module							
Type of power cable:							
MOTION-CONNECT 800							
MOTION-CONNECT 500							
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

Notes on water cooling:

- Inlet temperature of cooling water: max. 30 °C (86 °F)
- Cooling water throughput:
1FT613: at least 8 l/min (2.11 US gallons)
1FT616: at least 10 l/min (2.64 US gallons)
- Pressure ahead of motor: $p_{\text{max}} = 6 \text{ bar}$ (87 psi)
- Cooling water connection:
1FT613: G 3/8".
1FT616: G 1/2".
- Coolant: water with up to 25 % corrosion protection
(recommendation: Tyfocor)
- Loss of pressure between inlet and outlet < 0.1 bar (1.45 psi)

1) 1FT616 Big Servo motors of construction type IM B35 can be mounted on the flange only.

2) With default setting of the pulse frequency.

3) With the specified Motor Module, the motor cannot be fully utilized with M_0 at $\Delta T = 100 \text{ K}$ 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) $P_{\text{calc}} [\text{kW}] = \frac{M_0 [\text{Nm}] \times n_{\text{rated}}}{9550}$ $P_{\text{calc}} [\text{HP}] = \frac{M_0 [\text{lb-ft-in}] \times n_{\text{rated}}}{63000}$