

1FT7 Compact motors, core type

Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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	5.03 (6.75)	30 (22.1)	24 (17.7)	10	1FT7102 - 1AC7 ■ - 1 ■ ■ ■ 1	5	91.4 (80.9)	26.1 (57.5)	
		7.96 (10.7)	50 (36.9)	38 (28)	15	1FT7105 - 1AC7 ■ - 1 ■ ■ ■ 1	5	178 (157)	44.2 (97.5)	
3 000	48	1.35 (1.81)	5.0 (3.7)	4.3 (3.2)	2.6	1FT7044 - 1AF7 ■ - 1 ■ ■ ■ 1	3	5.43 (4.81)	7.2 (15.9)	
	63	1.7 (2.28)	6.0 (4.4)	5.4 (4.0)	3.9	1FT7062 - 1AF7 ■ - 1 ■ ■ ■ 1	5	7.36 (6.51)	7.1 (15.7)	
		2.39 (3.20)	9.0 (6.6)	7.6 (5.6)	5.2	1FT7064 - 1AF7 ■ - 1 ■ ■ ■ 1	5	11.9 (10.5)	9.7 (21.4)	
	80	3.24 (4.34)	13 (9.6)	10.5 (7.7)	6.6	1FT7082 - 1AF7 ■ - 1 ■ ■ ■ 1	5	26.5 (23.4)	14 (30.9)	
		4.55 (6.10)	20 (14.8)	14.5 (10.7)	8.5	1FT7084 - 1AF7 ■ - 1 ■ ■ ■ 1	5	45.1 (39.9)	20.8 (45.9)	
		5.65 (7.58)	28 (20.7)	18 (13.3)	11	1FT7086 - 1AF7 ■ - 1 ■ ■ ■ 1	5	63.6 (56.2)	27.5 (60.6)	
4 500	80	4.82 (6.46) ³⁾	20 (14.8)	11.5 (8.5) ³⁾	10.1 ³⁾	1FT7084 - 1AH7 ■ - 1 ■ ■ ■ 1	5	45.1 (39.9)	20.8 (45.9)	
		4.71 (6.32)	28 (20.7)	10 (7.4)	10	1FT7086 - 1AH7 ■ - 1 ■ ■ ■ 1	5	63.6 (56.2)	27.5 (60.6)	
6 000	36	0.88 (1.18)	2.0 (1.5)	1.4 (1.0)	2.1	1FT7034 - 1AK7 ■ - 1 ■ ■ ■ 1	3	0.85 (0.75)	3.8 (8.38)	
		63	2.13 (2.86) ¹⁾	6.0 (4.4)	3.7 (2.7) ¹⁾	5.9 ¹⁾	1FT7062 - 1AK7 ■ - 1 ■ ■ ■ 1	5	7.36 (6.51)	7.1 (15.7)
			2.59 (3.47) ²⁾	9.0 (6.6)	5.5 (4.1) ²⁾	6.1 ²⁾	1FT7064 - 1AK7 ■ - 1 ■ ■ ■ 1	5	11.9 (10.5)	9.7 (21.4)
Type IM B5:			Flange 0 Flange 1 (compatible with 1FT6)			0 1				
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				N M			
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn				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				

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

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Selection and ordering data

Motor type (continued)	Static current	Calculated power $P_{calc}^{6)}$	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 ⁵⁾	Booksized format	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A	Order No.	Power connector	Cable cross- section ⁴⁾	Pre-assembled cable
					Size	mm ²	Order No.
1FT7102-1AC7...	12.5	6.28 (8.42)	18	6SL312 - TE21 - 8AA3	1.5	4 x 1.5	6FX 002 - 5 S21 - ...
1FT7105-1AC7...	18	10.47 (14.0)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 - ...
1FT7044-1AF7...	2.8	1.57 (2.11)	3	6SL312 - TE13 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7062-1AF7...	3.9	1.88 (2.52)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7064-1AF7...	5.7	2.83 (3.80)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7082-1AF7...	7.6	4.08 (5.47)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7084-1AF7...	11	6.28 (8.42)	18	6SL312 - TE21 - 8AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7086-1AF7...	15.5	8.80 (11.8)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 - ...
1FT7084-1AH7...	15.6	9.42 (12.6)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 - ...
1FT7086-1AH7...	22.4	13.19 (17.7)	30	6SL312 - 1 TE23 - 0AA3	1.5	4 x 4	6FX 002 - 5 S41 - ...
1FT7034-1AK7...	2.7	1.26 (1.69)	3	6SL312 - TE13 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7062-1AK7...	8.4	3.77 (5.06)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
1FT7064-1AK7...	9	5.65 (7.58)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 - ...
Cooling:							
Internal air cooling				0			
External air cooling				1			
Motor Module:							
Single Motor Module				1			
Double Motor Module				2			
Type of power cable:							
MOTION-CONNECT 800					8		
MOTION-CONNECT 500					5		
Without brake cores							
With brake cores							C
							D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							
....							

1) These values refer to $n = 5\,500\text{ rpm}$.2) These values refer to $n = 4\,500\text{ rpm}$.3) These values refer to $n = 4\,000\text{ rpm}$.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) $P_{calc} [\text{kW}] = \frac{M_0 [\text{Nm}] \times n_{rated}}{9550}$ $P_{calc} [\text{HP}] = \frac{M_0 [\text{lb}_f\text{-in}] \times n_{rated}}{63000}$

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Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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	4.08 (5.47)	30 (22.1)	26 (19.2)	8	1FT7102 - 5AB7 - 1	5	91.4 (80.9)	26.1 (57.5)
		6.60 (8.85)	50 (36.9)	42 (31.0)	13	1FT7105 - 5AB7 - 1	5	178 (157)	44.2 (97.5)
		9.58 (12.8)	70 (51.6)	61 (45.0)	16	1FT7108 - 5AB7 - 1	5	248 (219)	59.0 (130)
Type IM B5:			Flange 0 Flange 1 (compatible with 1FT6)			0 1			
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				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn +12 bit multi-turn				D F		
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 R			IP64						3
Grade R			IP65						4
Grade R			IP67						5

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

1FT7 Compact motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100\text{ K}$ A	Calculated power $P_{\text{calc}}^{3)}$ P_{calc} for M_0 $\Delta T = 100\text{ K}$ kW (HP)	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
			Rated output current ²⁾ I_{rated} A	Booksize format Order No.	Power connector Size	Cable cross- section ¹⁾ mm ²	Pre-assembled cable Order No.
1FT7102-5AB7...	9	4.71 (6.32)	9	6SL312 - - TE21 - 0AA3	1.5	4 x 1.5	6FX 002 - 5 S21 -
1FT7105-5AB7...	15	7.85 (10.5)	18	6SL312 - - TE21 - 8AA3	1.5	4 x 1.5	6FX 002 - 5 S21 -
1FT7108-5AB7...	18	10.99 (14.7)	18	6SL312 - - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 -
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							
With brake cores							C D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							
							

¹⁾ 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).

²⁾ With default setting of the pulse frequency.

³⁾ $P_{\text{calc}} [\text{kW}] = \frac{M_0 [\text{Nm}] \times n_{\text{rated}}}{9550}$ $P_{\text{calc}} [\text{HP}] = \frac{M_0 [\text{lb}_f\text{-in}] \times n_{\text{rated}}}{63000}$

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Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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)
2 000	80	2.39 (3.20)	13 (9.6)	11.4 (8.4)	4.9	1FT7082 - 5AC7■ - 1 ■ ■ ■ ■	5	26.5 (23.5)	14 (30.9)
		3.54 (4.75)	20 (14.8)	16.9 (12.5)	8.4	1FT7084 - 5AC7■ - 1 ■ ■ ■ ■	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	22.5 (16.6)	9.2	1FT7086 - 5AC7■ - 1 ■ ■ ■ ■	5	63.6 (56.3)	27.5 (60.6)
	100	5.03 (6.75)	30 (22.1)	24.0 (17.7)	10	1FT7102 - 5AC7■ - 1 ■ ■ ■ ■	5	91.4 (80.9)	26.1 (57.5)
		7.96 (10.7)	50 (36.9)	38.0 (28.0)	15	1FT7105 - 5AC7■ - 1 ■ ■ ■ ■	5	178 (157)	44.2 (97.5)
		10.5 (14.1)	70 (51.6)	50.0 (36.9)	18	1FT7108 - 5AC7■ - 1 ■ ■ ■ ■	5	248 (219)	59 (130)
Type IM B5:			Flange 0 Flange 1 (compatible with 1FT6)			0 1			
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				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn +12 bit multi-turn				D F		
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 R			IP64						3
Grade R			IP65						4
Grade R			IP67						5

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

1FT7 Compact motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T=100\text{ K}$ A	Calculated power $P_{\text{calc}}^{3)}$ P_{calc} for M_0 $\Delta T=100\text{ K}$ kW (HP)	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
			Rated output current ²⁾ I_{rated} A	Booksized format Order No.	Power connector Size	Cable cross- section ¹⁾ mm ²	Pre-assembled cable Order No.
1FT7082-5AC7...	5	2.72 (3.65)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7084-5AC7...	9	4.19 (5.62)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7086-5AC7...	10.6	5.86 (7.86)	18	6SL312 - TE21 - 8AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7102-5AC7...	12.5	6.28 (8.42)	18	6SL312 - TE21 - 8AA3	1.5	4 x 1.5	6FX 002 - 5 S21 -
1FT7105-5AC7...	18	10.47 (14.0)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 -
1FT7108-5AC7...	25	14.66 (19.7)	30	6SL312 - 1TE23 - 0AA3	1.5	4 x 4	6FX 002 - 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							
With brake cores							C D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							

¹⁾ 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).

²⁾ With default setting of the pulse frequency.

³⁾ $P_{\text{calc}} [\text{kW}] = \frac{M_0 [\text{Nm}] \times n_{\text{rated}}}{9550}$ $P_{\text{calc}} [\text{HP}] = \frac{M_0 [\text{lb}_f\text{-in}] \times n_{\text{rated}}}{63000}$

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Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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)
3 000	48	0.85 (1.14)	3.0 (2.2)	2.7 (2.0)	2.1	1FT7042 - 5AF7 - 1	3	2.81 (2.49)	4.6 (10.1)
		1.35 (1.81)	5.0 (3.7)	4.3 (3.2)	2.6	1FT7044 - 5AF7 - 1	3	5.43 (4.81)	7.2 (15.9)
		1.76 (2.36)	7.0 (5.2)	5.6 (4.1)	3.5	1FT7046 - 5AF7 - 1	3	7.52 (6.66)	9.3 (20.5)
	63	1.70 (2.28)	6.0 (4.4)	5.4 (4.0)	3.9	1FT7062 - 5AF7 - 1	5	7.36 (6.51)	7.1 (15.7)
		2.39 (3.20)	9.0 (6.6)	7.6 (5.6)	5.2	1FT7064 - 5AF7 - 1	5	11.9 (10.5)	9.7 (21.4)
		2.92 (3.92)	12.0 (8.9)	9.3 (6.9)	7.2	1FT7066 - 5AF7 - 1	5	16.4 (14.5)	12.3 (27.1)
		3.42 (4.59)	15.0 (11.1)	10.9 (8.0)	6.7	1FT7068 - 5AF7 - 1	5	23.2 (20.5)	16.3 (35.9)
	80	3.24 (4.34)	13.0 (9.6)	10.3 (7.6)	6.6	1FT7082 - 5AF7 - 1	5	26.5 (23.5)	14.0 (30.9)
		4.55 (6.10)	20.0 (14.8)	14.5 (10.7)	8.5	1FT7084 - 5AF7 - 1	5	45.1 (39.9)	20.8 (45.9)
		5.62 (7.54)	28.0 (20.7)	18 (13.3)	11	1FT7086 - 5AF7 - 1	5	63.6 (56.3)	27.5 (60.6)
	100	6.28 (8.42)	30.0 (22.1)	20 (14.8)	12	1FT7102 - 5AF7 - 1	5	91.4 (80.9)	26.1 (57.5)
		8.80 (11.8)	50.0 (36.9)	28 (20.7)	15	1FT7105 - 5AF7 - 1	5	178 (157)	44.2 (97.5)
		8.17 (11.0)	70.0 (51.6)	20 (14.8)	12	1FT7108 - 5AF7 - 1	5	248 (220)	59.0 (130)
Type IM B5:		Flange 0 Flange 1 (compatible with 1FT6)			0 1				
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				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn +12 bit multi-turn				D F		
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 R			IP64					3	
Grade R			IP65					4	
Grade R			IP67					5	

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Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100$ K	Calculated power $P_{calc}^{3)}$ 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 ²⁾ I_{rated}	Booksize format Order No.	Power connector Size	Cable cross- section ¹⁾ mm ²	Pre-assembled cable Order No.
1FT7042-5AF7...	2.1	0.94 (1.26)	3	6SL312 - TE13 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7044-5AF7...	2.8	1.57 (2.11)	3	6SL312 - TE13 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7046-5AF7...	4	2.20 (2.95)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7062-5AF7...	3.9	1.88 (2.52)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7064-5AF7...	5.7	2.83 (3.80)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7066-5AF7...	8.4	3.77 (5.06)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7068-5AF7...	8.3	4.71 (6.32)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7082-5AF7...	7.6	4.08 (5.47)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7084-5AF7...	11	6.28 (8.42)	18	6SL312 - TE21 - 8AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7086-5AF7...	15.5	8.80 (11.8)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 -
1FT7102-5AF7...	18	9.42 (12.6)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 -
1FT7105-5AF7...	26	15.71 (21.0)	30	6SL312 - 1TE23 - 0AA3	1.5	4 x 4	6FX 002 - 5 S41 -
1FT7108-5AF7...	36	21.99 (29.5)	45	6SL312 - 1TE24 - 5AA3	1.5	4 x 6	6FX 002 - 5 S51 -
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.							

¹⁾ 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).

²⁾ With default setting of the pulse frequency.

³⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [HP] = \frac{M_0 [lb_f \cdot in] \times n_{rated}}{63000}$

1FT7 Compact motors, standard type

Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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	48	1.32 (1.77) ¹⁾	7.0 (5.2)	3.6 (2.7) ¹⁾	4.7 ¹⁾	1FT7046 - 5AH7 - 1 ■ ■ ■ ■	3	7.52 (6.66)	9.3 (20.5)
	63	2.55 (3.42) ²⁾	12 (8.9)	6.1 (4.5) ²⁾	7.5 ²⁾	1FT7066 - 5AH7 - 1 ■ ■ ■ ■	5	16.4 (14.5)	12.3 (27.1)
	80	3.77 (5.06)	13 (9.6)	8.0 (5.9)	8.4	1FT7082 - 5AH7 - 1 ■ ■ ■ ■	5	26.5 (23.5)	14.0 (30.9)
		4.82 (6.46) ²⁾	20 (14.8)	11.5 (8.5) ²⁾	10.1 ²⁾	1FT7084 - 5AH7 - 1 ■ ■ ■ ■	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	10 (7.4)	10	1FT7086 - 5AH7 - 1 ■ ■ ■ ■	5	63.6 (56.3)	27.5 (60.6)
Type IM B5:			Flange 0 Flange 1 (compatible with 1FT6)			0 1			
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				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder Absolute encoder, 22 bit single-turn + 12 bit multi-turn				D F		
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 R			IP64						3
Grade R			IP65						4
Grade R			IP67						5

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

1FT7 Compact motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100$ K A	Calculated power P_{calc} ⁵⁾ 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 ⁴⁾ I_{rated} A	Booksize format Order No.	Power connector Size	Cable cross- section ³⁾ mm ²	Pre-assembled cable Order No.
1FT7046-5AH7...	8.1	3.30 (4.43)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7066-5AH7...	13.6	5.65 (7.58)	18	6SL312 - TE21 - 8AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7082-5AH7...	12.3	6.13 (8.22)	18	6SL312 - TE21 - 8AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7084-5AH7...	15.6	9.42 (12.6)	18	6SL312 - TE21 - 8AA3	1.5	4 x 2.5	6FX 002 - 5 S31 -
1FT7086-5AH7...	22.4	13.19 (17.7)	30	6SL312 - 1 TE23 - 0AA3	1.5	4 x 4	6FX 002 - 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) These values refer to $n = 3\,500$ rpm.2) These values refer to $n = 4\,000$ rpm.

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

1FT7 Compact motors, standard type

Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact 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 (lbf-ft)	Nm (lbf-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lbf-in-s}^2$)	kg (lb)		
6 000	36	0.88 (1.18)	2.0 (1.5)	1.4 (1.0)	2.1	1FT7034 - 5AK7 ■ - 1 ■ ■ ■ ■	3	0.85 (0.75)	3.8 (8.38)		
		1.07 (1.43)	3.0 (2.2)	1.7 (1.3)	2.4	1FT7036 - 5AK7 ■ - 1 ■ ■ ■ ■	3	1.33 (1.18)	5.0 (11.0)		
	48	1.26 (1.69)	3.0 (2.2)	2.0 (1.5)	3	1FT7042 - 5AK7 ■ - 1 ■ ■ ■ ■	3	2.81 (2.49)	4.6 (10.1)		
		1.41 (1.89) ¹⁾	5.0 (3.7)	3.0 (2.2) ¹⁾	3.6 ¹⁾	1FT7044 - 5AK7 ■ - 1 ■ ■ ■ ■	3	5.43 (4.81)	7.2 (15.9)		
	63	2.13 (2.86) ²⁾	6.0 (4.4)	3.7 (2.7) ²⁾	5.9 ²⁾	1FT7062 - 5AK7 ■ - 1 ■ ■ ■ ■	5	7.36 (6.51)	7.1 (15.7)		
		2.59 (3.47) ¹⁾	9.0 (6.6)	5.5 (4.1) ¹⁾	6.1 ¹⁾	1FT7064 - 5AK7 ■ - 1 ■ ■ ■ ■	5	11.9 (10.5)	9.7 (21.4)		
Type IM B5:			Flange 0				0	■	■	■	
			Flange 1 (compatible with 1FT6)				1				
Encoder systems for motors without DRIVE-CLiQ interface:			Incremental encoder sin/cos 1 V _{pp} 2 048 S/R				N	M	■	■	
			Absolute encoder EnDat 2 048 S/R								
Encoder systems for motors with DRIVE-CLiQ interface:			22 bit incremental encoder				D	F	■	■	
			Absolute encoder, 22 bit single-turn +12 bit multi-turn								
Shaft extension:			Shaft and flange accuracy:			Holding brake:		A	B	■	■
Fitted key and keyway			Tolerance N			without					
Fitted key and keyway			Tolerance N			with		D	E	■	■
Fitted key and keyway			Tolerance R			without					
Fitted key and keyway			Tolerance R			with		G	H	■	■
Plain shaft			Tolerance N			without					
Plain shaft			Tolerance N			with		K	L	■	■
Plain shaft			Tolerance R			without					
Plain shaft			Tolerance R			with					
Vibration magnitude:			Degree of protection:				0	1	■	■	
Grade A			IP64								
Grade A			IP65				2	■	■	■	
Grade A			IP67								
Grade R			IP64				3	■	■	■	
Grade R			IP65								
Grade R			IP67				4	■	■	■	
							5	■	■	■	

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

1FT7 Compact motors, standard type
Natural cooling

Selection and ordering data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100$ K A	Calculated power $P_{calc}^{5)}$ 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 ⁴⁾ I_{rated} A	Booksized format Order No.	Power connector Size	Cable cross- section ³⁾ mm ²	Pre-assembled cable Order No.
1FT7034-5AK7...	2.7	1.26 (1.69)	3	6SL312 - TE13 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7036-5AK7...	4.0	1.88 (2.52)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7042-5AK7...	3.9	1.89 (2.53)	5	6SL312 - TE15 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7044-5AK7...	5.7	3.15 (4.22)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7062-5AK7...	8.4	3.78 (5.07)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
1FT7064-5AK7...	9	5.67 (7.60)	9	6SL312 - TE21 - 0AA3	1	4 x 1.5	6FX 002 - 5 S01 -
Cooling:							
Internal air cooling			0				
External air cooling			1				
Motor Module:							
Single Motor Module			1				
Double Motor Module			2				
Type of power cable:							
MOTION-CONNECT 800					8		
MOTION-CONNECT 500					5		
Without brake cores							
With brake cores							C D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							
....							

1) These values refer to $n = 4\,500$ rpm.2) These values refer to $n = 5\,500$ rpm.

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