

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact core type motors Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m
rpm		kW (HP)	Nm (lbr-ft)	Nm (lbr-ft)	A	Core type Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
1FT7 Compact for DC link voltage 510 ... 720 V DC – Natural cooling									
2000	100	5.03 (6.75)	30 (22.1)	24 (17.7)	10	1FT7102-1AC7■-1 ■ ■ 1	5	91.4 (80.9)	26.1 (57.6)
		7.96 (10.7)	50 (36.9)	38 (28.0)	15	1FT7105-1AC7■-1 ■ ■ 1	5	178 (158)	44.2 (97.5)
3000	48	1.35 (1.81)	5 (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 (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 (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)	10.3 (7.6)	6.6	1FT7082-1AF7■-1 ■ ■ 1	5	26.5 (23.5)	14.0 (30.9)
		4.56 (6.11)	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 (56.3)	27.5 (60.6)
4500	80	4.82 (6.46) ¹⁾	20 (14.8)	11.5 (8.5) ¹⁾	10.1 ¹⁾	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 (56.3)	27.5 (60.6)
6000	36	0.88 (1.18)	2 (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) ²⁾	6 (4.4)	3.7 (2.7) ²⁾	5.9 ²⁾	1FT7062-1AK7■-1 ■ ■ 1	5	7.36 (6.51)	7.1 (15.7)
		2.59 (3.47) ³⁾	9 (6.6)	5.5 (4.1) ³⁾	6.1 ³⁾	1FT7064-1AK7■-1 ■ ■ 1	5	11.9 (10.5)	9.7 (21.4)
Type of construction:			IM B5 IM B5	Flange 0 Flange 1 (compatible with 1FT6)	0 1				
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder AM2048S/R encoder				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder AM24DQI encoder				B C		
Shaft extension: Plain shaft Plain shaft			Shaft and flange accuracy: Tolerance N Tolerance N		Holding brake: Without With		G H		
Vibration severity: Grade A			Degree of protection: IP65					1	

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

Some SIMOTICS S-1FT7 Compact motors are available as core types. These core types can be express delivered as replacement motors in the event of plant outages and offer the advantage of a quicker spare parts supply. For this reason, core types should be used for configuration wherever possible.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact core type motors
Natural cooling

Motor type (repeated)	Efficiency ⁴⁾	Stall current	Calculated power P_{calc} ⁷⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 $\Delta T = 100$ K	P_{calc} at M_0 $\Delta T = 100$ K	Rated output current ⁵⁾	Booksized format For additional versions and components see SINAMICS S120 drive system	Power connector	Cable cross- section ⁶⁾	Pre-assembled cable
	%	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT7102-1AC7...	93	12.5	6.28 (8.42)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX002-5N21-....
1FT7105-1AC7...	93	18	10.47 (14.0)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5N31-....
1FT7044-1AF7...	92	2.8	1.57 (2.11)	3	6SL312-1-TE13-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7062-1AF7...	91	3.9	1.88 (2.52)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7064-1AF7...	93	5.7	2.83 (3.80)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7082-1AF7...	93	7.6	4.08 (5.47)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7084-1AF7...	93	11	6.28 (8.42)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5N01-....
1FT7086-1AF7...	93	15.5	8.80 (11.8)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5N31-....
1FT7084-1AH7...	93	15.6	9.42 (12.6)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5N31-....
1FT7086-1AH7...	91	22.4	13.19 (17.7)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5N41-....
1FT7034-1AK7...	90	2.7	1.26 (1.69)	3	6SL312-1-TE13-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7062-1AK7...	90	8.4	3.77 (5.06)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7064-1AK7...	91	9	5.65 (7.58)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5N01-....

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
MOTION-CONNECT connection systems

¹⁾ These values refer to $n = 4000$ rpm.

²⁾ These values refer to $n = 5500$ rpm.

³⁾ These values refer to $n = 4500$ rpm.

⁴⁾ Optimum efficiency in continuous duty.

⁵⁾ With default setting of the pulse frequency.

⁶⁾ The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C (104 °F).

⁷⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m		
rpm		kW (HP)	Nm (lbr-ft)	Nm (lbr-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_\text{f}\text{-in-s}^2$)	kg (lb)		
1FT7 Compact for DC link voltage 510 ... 720 V DC – Natural cooling											
1500	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 (130)		
2000	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 (17.7)	10	1FT7102-5AC7-1■ ■ ■ ■	5	91.4 (80.9)	26.1 (57.5)		
		7.96 (10.7)	50 (36.9)	38 (28.0)	15	1FT7105-5AC7-1■ ■ ■ ■	5	178 (157)	44.2 (97.5)		
		10.5 (14.1)	70 (51.6)	50 (36.9)	18	1FT7108-5AC7-1■ ■ ■ ■	5	248 (219)	59 (130)		
		3000	48	0.85 (1.14)	3 (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 (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 (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 (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 (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 (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 (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 (9.6)	10.3 (7.6)	6.6	1FT7082-5AF7-1■ ■ ■ ■	5	26.5 (23.5)	14 (30.9)		
	4.55 (6.10)		20 (14.8)	14.5 (10.7)	8.5	1FT7084-5AF7-1■ ■ ■ ■	5	45.1 (39.9)	20.8 (45.9)		
	5.65 (7.58)	28 (20.7)	18 (13.3)	11	1FT7086-5AF7-1■ ■ ■ ■	5	63.6 (56.3)	27.5 (60.6)			
100	6.28 (8.42)	30 (22.1)	20 (14.8)	12	1FT7102-5AF7-1■ ■ ■ ■	5	91.4 (80.9)	26.1 (57.5)			
	8.80 (11.8)	50 (36.9)	28 (20.7)	15	1FT7105-5AF7-1■ ■ ■ ■	5	178 (157)	44.2 (97.5)			
	6.28 (8.42)	70 (51.6)	20 (14.8)	12	1FT7108-5AF7-1■ ■ ■ ■	5	248 (220)	59 (130)			
Type of construction:			IM B5 IM B5	Flange 0 Flange 1 (compatible with 1FT6)	0 1						
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder AM2048S/R encoder				N M				
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder AM24DQI encoder				B C				
Shaft extension:			Shaft and flange accuracy:			Holding brake:					
Feather key and keyway			Tolerance N			Without					
Feather key and keyway			Tolerance N			With					
Feather key and keyway			Tolerance R			Without					
Feather 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 severity:			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 type of construction and degree of protection, see Technical definitions.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors
Natural cooling

Motor type (repeated)	Efficiency ¹⁾	Stall current	Calculated power P_{calc} ⁴⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 $\Delta T=100$ K	P_{calc} at M_0 $\Delta T=100$ K	Rated output current ²⁾	Booksized format For additional versions and components see SINAMICS S120 drive system	Power connector	Cable cross- section ³⁾	Pre-assembled cable
	%	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT7102-5AB7...	93	9	4.71 (6.32)	9	6SL312-1-TE21-0AA3	1.5	4 × 1.5	6FX002-5-N21-....
1FT7105-5AB7...	93	15	7.85 (10.5)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX002-5-N21-....
1FT7108-5AB7...	93	18	10.99 (14.7)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5-N31-....
1FT7082-5AC7...	93	5	2.72 (3.65)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7084-5AC7...	93	9	4.19 (5.62)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7086-5AC7...	93	10.6	5.86 (7.86)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7102-5AC7...	93	12.5	6.28 (8.42)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX002-5-N21-....
1FT7105-5AC7...	93	18	10.47 (14.0)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5-N31-....
1FT7108-5AC7...	93	25	14.66 (19.7)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5-N41-....
1FT7042-5AF7...	92	2.1	0.94 (1.26)	3	6SL312-1-TE13-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7044-5AF7...	92	2.8	1.57 (2.11)	3	6SL312-1-TE13-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7046-5AF7...	92	4	2.20 (2.95)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7062-5AF7...	91	3.9	1.88 (2.52)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7064-5AF7...	93	5.7	2.83 (3.80)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7066-5AF7...	92	8.4	3.77 (5.06)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7068-5AF7...	92	8.3	4.71 (6.32)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7082-5AF7...	93	7.6	4.08 (5.47)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7084-5AF7...	93	11	6.28 (8.42)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5-N01-....
1FT7086-5AF7...	93	15.5	8.80 (11.8)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5-N31-....
1FT7102-5AF7...	93	18	9.42 (12.6)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5-N31-....
1FT7105-5AF7...	94	26	15.71 (21.1)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5-N41-....
1FT7108-5AF7...	93	36	21.99 (29.5)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX002-5-N54-....

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
MOTION-CONNECT connection systems

¹⁾ Optimum efficiency in continuous duty.

²⁾ With default setting of the pulse frequency.

³⁾ The current carrying capacity of the power cables complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C (104 °F).

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

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors Natural cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m
rpm		kW (HP)	Nm (lbf-ft)	Nm (lbf-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_\text{f}\text{-in-s}^2$)	kg (lb)
1FT7 Compact for DC link voltage 510 ... 720 V DC – Natural cooling									
4500	48	1.32 (1.77) ¹⁾	7 (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 (5.9)	7.8	1FT7082-5AH7■-1■ ■ ■ ■	5	26.5 (23.5)	14 (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)
6000	36	0.88 (1.18)	2 (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 (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 (2.2)	2 (1.5)	3	1FT7042-5AK7■-1■ ■ ■ ■	3	2.81 (2.49)	4.6 (10.1)
		1.41 (1.89) ³⁾	5 (3.7)	3 (2.2) ³⁾	3.6 ³⁾	1FT7044-5AK7■-1■ ■ ■ ■	3	5.43 (4.81)	7.2 (15.9)
	63	2.13 (2.86) ⁴⁾	6 (4.4)	3.7 (2.7) ⁴⁾	5.9 ⁴⁾	1FT7062-5AK7■-1■ ■ ■ ■	5	7.36 (6.51)	7.1 (15.7)
		2.59 (3.47) ³⁾	9 (6.6)	5.5 (4.1) ³⁾	6.1 ³⁾	1FT7064-5AK7■-1■ ■ ■ ■	5	11.9 (10.5)	9.7 (21.4)
Type of construction:			IM B5 IM B5	Flange 0 Flange 1 (compatible with 1FT6)	0 1				
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder AM2048S/R encoder				N M		
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder AM24DQI encoder				B C		
Shaft extension:			Shaft and flange accuracy:		Holding brake:				
Feather key and keyway			Tolerance N		Without		A		
Feather key and keyway			Tolerance N		With		B		
Feather key and keyway			Tolerance R		Without		D		
Feather 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 severity:			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 type of construction and degree of protection, see Technical definitions.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors
Natural cooling

Motor type (repeated)	Efficiency ⁵⁾	Stall current	Calculated power P_{calc} ⁸⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 $\Delta T = 100$ K	P_{calc} at M_0 $\Delta T = 100$ K	Rated output current ⁶⁾	Booksized format For additional versions and components see SINAMICS S120 drive system	Power connector	Cable cross-section ⁷⁾	Pre-assembled cable
	%	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT7046-5AH7...	90	8.1	3.3 (4.43)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7066-5AH7...	90	13.6	5.65 (7.58)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7082-5AH7...	93	12.3	6.13 (8.22)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7084-5AH7...	93	15.6	9.42 (12.6)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX0002-5N31-....
1FT7086-5AH7...	91	22.4	13.19 (17.7)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX0002-5N41-....
1FT7034-5AK7...	90	2.7	1.26 (1.69)	3	6SL312-1-TE13-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7036-5AK7...	90	4.0	1.88 (2.52)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7042-5AK7...	91	3.9	1.88 (2.52)	5	6SL312-1-TE15-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7044-5AK7...	91	5.7	3.14 (4.21)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7062-5AK7...	90	8.4	3.77 (5.06)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX0002-5N01-....
1FT7064-5AK7...	91	9	5.65 (7.58)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX0002-5N01-....

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
MOTION-CONNECT connection systems

¹⁾ These values refer to $n = 3500$ rpm.

²⁾ These values refer to $n = 4000$ rpm.

³⁾ These values refer to $n = 4500$ rpm.

⁴⁾ These values refer to $n = 5500$ rpm.

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⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors Forced ventilation

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m
rpm		kW (HP)	Nm (lbf-ft)	Nm (lbf-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_\text{f}\text{-in-s}^2$)	kg (lb)
1FT7 Compact for DC link voltage 510 ... 720 V DC – Forced ventilation									
2000	80	5.0 (6.7)	27 (19.9)	24 (17.7)	13.5	1FT7084-5SC7■ - 1 ■ ■ ■ ■	5	45 (39.8)	25 (55.1)
		6.7 (8.98)	36 (26.5)	32 (23.6)	17	1FT7086-5SC7■ - 1 ■ ■ ■ ■	5	64 (56.7)	36 (79.4)
	100	11.7 (15.7)	65 (47.9)	56 (41.3)	29	1FT7105-5SC7■ - 1 ■ ■ ■ ■	5	178 (157.6)	50 (110.3)
		15.3 (20.5)	91 (67.1)	73 (53.8)	33	1FT7108-5SC7■ - 1 ■ ■ ■ ■	5	248 (219.5)	64 (141.1)
3000	80	7.2 (9.66)	27 (19.9)	23 (17)	18.5	1FT7084-5SF7■ - 1 ■ ■ ■ ■	5	45 (39.8)	25 (55.1)
		9.1 (12.2)	36 (26.5)	29 (21.4)	24	1FT7086-5SF7■ - 1 ■ ■ ■ ■	5	64 (56.7)	36 (79.4)
	100	15.1 (20.3)	65 (47.9)	48 (35.4)	35	1FT7105-5SF7■ - 1 ■ ■ ■ ■	5	178 (157.6)	50 (110.3)
		18.8 (25.1)	91 (67.1)	60 (44.3)	38	1FT7108-5SF7■ - 1 ■ ■ ■ ■	5	248 (219.5)	64 (141.1)
4500	80	9.9 (13.3)	27 (19.9)	21 (15.5)	24.5	1FT7084-5SH7■ - 1 ■ ■ ■ ■	5	45 (39.8)	25 (55.1)
		11.8 (15.8)	36 (26.5)	25 (18.4)	25	1FT7086-5SH7■ - 1 ■ ■ ■ ■	5	64 (56.7)	36 (79.4)
Type of construction:			IM B5 IM B5		Flange 0 Flange 1 (compatible with 1FT6)		0 1		
Connector outlet direction:			Connector sizes 1 and 1.5		Rotatable connector		1		
			Connector size 3 ¹⁾		Transverse right Transverse left Axial NDE Axial DE	1			
						2			
						3			
						4			
Terminal box/ cable entry: ¹⁾			Top/transverse from right Top/transverse from left Top/axial from NDE Top/axial from DE				5		
							6		
							7		
							8		
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder AM2048S/R encoder				N		
							M		
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder AM24DQI encoder				B		
							C		
Shaft extension:			Shaft and flange accuracy:		Holding brake:			A B D E G H K L	
Feather key			Tolerance N		Without				
Feather key			Tolerance N		With				
Feather key			Tolerance R		Without				
Feather key			Tolerance R		With				
Plain shaft			Tolerance N		Without				
Plain shaft			Tolerance N		With				
Plain shaft			Tolerance R		Without				
Plain shaft			Tolerance R		With				
Vibration severity:			Degree of protection: ²⁾						
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 Technical definitions.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors
Forced ventilation

Motor type (repeated)	Efficiency ³⁾	Stall current	Calculated power P_{calc} ⁶⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 $\Delta T=100$ K	P_{calc} at M_0 $\Delta T=100$ K	Rated output current ⁴⁾	Booksized format For additional versions and components see SINAMICS S120 drive system	Power connector	Cable cross-section ⁵⁾	Pre-assembled cable
	%	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT7084-5SC7...	93	15	5.7 (7.64)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX0002-5-N21-....
1FT7086-5SC7...	93	19.5	7.5 (10.1)	30	6SL312-1-TE23-0AA3	1.5	4 × 2.5	6FX0002-5-N31-....
1FT7105-5SC7...	93	31	13.6 (18.2)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX0002-5-N54-....
1FT7108-5SC7...	93	39	19.1 (25.6)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX0002-5-N64-....
1FT7084-5SF7...	94	21	8.5 (11.4)	30	6SL312-1-TE23-0AA3	1.5	4 × 2.5	6FX0002-5-N31-....
1FT7086-5SF7...	93	29	11.3 (15.2)	30	6SL312-1-TE23-0AA3	1.5	4 × 6	6FX0002-5-N51-....
1FT7105-5SF7...	94	45	20.4 (27.4)	45	6SL312-1-TE24-5AA3	3	4 × 10	6FX0002-5-S14-....
1FT7108-5SF7...	94	57	28.6 (38.4)	60	6SL312-1-TE26-0AA3	3	4 × 16	6FX0002-5-S23-....
1FT7084-5SH7...	94	30.5	12.7 (17.0)	30	6SL312-1-TE23-0AA3	1.5	4 × 6	6FX0002-5-N51-....
1FT7086-5SH7...	93	34	17.0 (22.8)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX0002-5-N54-....

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
[MOTION-CONNECT connection systems](#)

4

¹⁾ Connector size 3 not rotatable. An alternative terminal box can be selected with connector size 3 only.

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

³⁾ Optimum efficiency in continuous duty.

⁴⁾ With default setting of the pulse frequency.

⁵⁾ The current carrying capacity of the power cable complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C (104 °F).

⁶⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m
rpm		kW (HP)	Nm (lbf-ft)	Nm (lbf-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_f\text{-in-s}^2$)	kg (lb)
1FT7 Compact for DC link voltage 510 ... 720 V DC – Water cooling									
1500	100	7.9 (10.6)	50 (36.9)	50 (36.9)	20.3	1FT7102-5WB7-1 ■ ■ ■	5	98.9 (87.5)	36.6 (80.7)
		14.1 (18.9)	90 (66.3)	90 (66.3)	29.5	1FT7105-5WB7-1 ■ ■ ■	5	191 (169)	54.8 (121)
		19.6 (26.3)	125 (92.1)	125 (92.1)	40.3	1FT7108-5WB7-1 ■ ■ ■	5	265 (235)	68.6 (151)
2000	80	4.4 (5.90)	21 (15.5)	21 (15.5)	11	1FT7082-5WC7-1 ■ ■ ■	5	28.9 (25.6)	20.7 (45.6)
		7.33 (9.83)	35 (25.8)	35 (25.8)	17	1FT7084-5WC7-1 ■ ■ ■	5	48.3 (42.8)	27.5 (60.6)
		10.5 (14.1)	50 (36.9)	50 (36.9)	24	1FT7086-5WC7-1 ■ ■ ■	5	67.8 (60.0)	34.1 (75.2)
	100	10.4 (14.0)	50 (36.9)	49.5 (36.5)	29.3	1FT7102-5WC7-1 ■ ■ ■	5	98.9 (87.5)	36.6 (80.7)
		18.8 (25.2)	90 (66.3)	90 (66.3)	40.8	1FT7105-5WC7-1 ■ ■ ■	5	191 (169)	54.8 (121)
		26.2 (35.1)	125 (92.1)	125 (92.1)	47.5	1FT7108-5WC7-1 ■ ■ ■	5	265 (235)	69.6 (153)
Type of construction:			IM B5 IM B5		Flange 0 Flange 1 (compatible with 1FT6)	0 1			
Connector outlet direction:			Connector sizes 1 and 1.5		Rotatable connector	1			
			Connector size 3 ¹⁾		Transverse right	1			
					Transverse left	2			
					Axial NDE	3			
					Axial DE	4			
Terminal box/ cable entry: ¹⁾			Top/transverse from right			5			
			Top/transverse from left			6			
			Top/axial from NDE			7			
			Top/axial from DE			8			
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder			N			
			AM2048S/R encoder			M			
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder			B			
			AM24DQI encoder			C			
Shaft extension:			Shaft and flange accuracy:		Holding brake:				
Feather key and keyway			Tolerance N		Without				A
Feather key and keyway			Tolerance N		With				B
Feather key and keyway			Tolerance R		Without				D
Feather 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 severity:			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 type of construction and degree of protection, see Technical definitions.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors
Water cooling

Motor type (repeated)	Efficiency ²⁾	Stall current	Calculated power P_{calc} ⁵⁾	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection (and brake connection) via power connector		
	η	I_0 at M_0 $\Delta T=100$ K	P_{calc} at M_0 $\Delta T=100$ K	Rated output current ³⁾	Booksized format For additional versions and components see SINAMICS S120 drive system	Power connector	Cable cross-section ⁴⁾	Pre-assembled cable
	%	A	kW (HP)	A	Order No.	Size	mm ²	Order No.
1FT7102-5WB7...	93	17.8	7.9 (10.6)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX0002-5-N31-....
1FT7105-5WB7...	94	28	14.1 (18.9)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX0002-5-N41-....
1FT7108-5WB7...	94	39	19.6 (26.3)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX0002-5-N64-....
1FT7082-5WC7...	93	10.7	4.4 (5.90)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX0002-5-N21-....
1FT7084-5WC7...	94	16.5	7.3 (9.79)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX0002-5-N31-....
1FT7086-5WC7...	94	23	10.5 (14.1)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX0002-5-N41-....
1FT7102-5WC7...	94	25.5	10.5 (14.1)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX0002-5-N41-....
1FT7105-5WC7...	94	39	18.8 (25.2)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX0002-5-N64-....
1FT7108-5WC7...	95	45.3	26.2 (35.1)	45	6SL312-1-TE24-5AA3	3	4 × 10	6FX0002-5-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
MOTION-CONNECT connection systems

¹⁾ Connector size 3 not rotatable. An alternative terminal box can be selected with connector size 3 only.

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⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 Compact synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m	
rpm		kW (HP)	Nm (lbf-ft)	Nm (lbf-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lb}_\text{r}\text{-in-s}^2$)	kg (lb)	
1FT7 Compact for DC link voltage 510 ... 720 V DC – Water cooling										
3000	63	3.1 (4.2)	10 (7.4)	10 (7.4)	7.8	1FT7062-5WF7■-1■■■■	5	8.1 (7.17)	11 (24.3)	
		5 (6.7)	16 (11.8)	16 (11.8)	12.5	1FT7064-5WF7■-1■■■■	5	12.9 (11.4)	13.7 (30.2)	
		6.2 (8.3)	20 (14.8)	19.6 (14.5)	14.4	1FT7066-5WF7■-1■■■■	5	17.7 (15.7)	16.3 (35.9)	
		9.3 (12.5)	30 (22.1)	29.5 (21.8)	19.6	1FT7068-5WF7■-1■■■■	5	24.8 (22.0)	20.1 (44.3)	
	80	6.28 (8.42)	21 (15.5)	20.5 (15.1)	16	1FT7082-5WF7■-1■■■■	5	28.9 (25.6)	20.7 (45.6)	
		11 (14.8)	35 (25.8)	35 (25.8)	24.2	1FT7084-5WF7■-1■■■■	5	48.3 (42.8)	27.5 (60.6)	
		15.4 (20.7)	50 (36.9)	49 (36.1)	36	1FT7086-5WF7■-1■■■■	5	67.8 (60.0)	34.1 (75.2)	
	100	14.3 (19.2)	50 (36.9)	45.5 (33.6)	38.8	1FT7102-5WF7■-1■■■■	5	98.9 (87.5)	36.6 (80.7)	
		24.8 (33.3)	90 (66.4)	79 (58.3)	49.5	1FT7105-5WF7■-■■■■	5	164 (145.1)	55.9 (123.3)	
		34.2 (45.9)	125 (92.2)	109 (80.4)	60	1FT7108-5WF7■-■■■■	5	265 (235)	69.6 (153.5)	
	4500	63	9.1 (12.2)	20 (14.8)	19.4 (14.3)	20.8	1FT7066-5WH7■-1■■■■	5	17.7 (15.7)	16.3 (35.9)
		80	8.95 (12.0)	21 (15.5)	19 (14.0)	23.9	1FT7082-5WH7■-1■■■■	5	28.9 (25.6)	20.7 (45.6)
			14.6 (20.0)	35 (25.8)	32 (23.6)	34.5	1FT7084-5WH7■-1■■■■	5	48.3 (42.8)	27.5 (60.6)
20.3 (406)			50 (36.9)	43 (31.7)	38	1FT7086-5WH7■-1■■■■	5	67.8 (60.0)	34.1 (75.2)	
6000	63	5.8 (7.78)	10 (7.4)	9.2 (6.80)	12.7	1FT7062-5WK7■-1■■■■	5	8.1 (7.17)	11 (24.3)	
		8.9 (11.9)	16 (11.8)	14.2 (10.5)	20	1FT7064-5WK7■-1■■■■	5	12.9 (11.4)	13.7 (30.2)	
Type of construction:			IM B5 IM B5		Flange 0 Flange 1 (compatible with 1FT6)	0 1				
Connector outlet direction:			Connector sizes 1 and 1.5		Rotatable connector Transverse right Transverse left Axial NDE Axial DE	1				
			Connector size 3 ¹⁾			1				
						2				
						3				
						4				
Terminal box/ cable entry: ¹⁾			Top/transverse from right			5				
			Top/transverse from left			6				
			Top/axial from NDE			7				
			Top/axial from DE			8				
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder			N				
			AM2048S/R encoder			M				
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder			B				
			AM24DQI encoder			C				
Shaft extension:			Shaft and flange accuracy:		Holding brake:					
Feather key and keyway			Tolerance N		Without					
Feather key and keyway			Tolerance N		With					
Feather key and keyway			Tolerance R		Without					
Feather 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 severity:			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 type of construction and degree of protection, see Technical definitions.

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 Compact motors
Water cooling

Motor type (repeated)	Efficiency ²⁾ η %	Stall current I_0 at M_0 $\Delta T = 100$ K A	Calculated power P_{calc} ⁶⁾ at 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 ³⁾ I_{rated} A	Booksize format For additional versions and components see SINAMICS S120 drive system Order No.	Power connector Size	Cable cross-section ⁴⁾ mm ²	Pre-assembled cable Order No.
1FT7062-5WF7...	91	7.4	3.1 (4.16)	9	6SL312-1-TE21-0AA3	1	4 × 1.5	6FX002-5N01-....
1FT7064-5WF7...	91	11.9	5.0 (6.7)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5N01-....
1FT7066-5WF7...	91	14	6.3 (8.5)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5N01-....
1FT7068-5WF7...	93	19	9.4 (12.6)	18 ⁵⁾	6SL312-1-TE21-8AA3	1	4 × 2.5	6FX002-5N11-....
1FT7082-5WF7...	94	16	6.6 (8.85)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5N31-....
1FT7084-5WF7...	94	23	11.0 (14.8)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5N41-....
1FT7086-5WF7...	94	34	15.7 (21.1)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX002-5N54-....
1FT7102-5WF7...	95	40	15.7 (21.1)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX002-5N64-....
1FT7105-5WF7...	94	53.2	28.3 (38.0)	60	6SL312-1-TE26-0AA3	3	4 × 16	6FX002-5S23-....
1FT7108-5WF7...	95	65	39.3 (52.7)	85	6SL312-1-TE28-5AA3	3	4 × 16	6FX002-5G23-....
1FT7066-5WH7...	91	19.7	9.4 (12.6)	30	6SL312-1-TE23-0AA3	1	4 × 2.5	6FX002-5N11-....
1FT7082-5WH7...	94	24	9.9 (13.3)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5N41-....
1FT7084-5WH7...	94	34.3	16.5 (22.1)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX002-5N54-....
1FT7086-5WH7...	94	40.5	23.6 (31.7)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX002-5N64-....
1FT7062-5WK7...	92	12.5	6.3 (8.45)	18	6SL312-1-TE21-8AA3	1	4 × 1.5	6FX002-5N01-....
1FT7064-5WK7...	92	20.2	10.1 (13.5)	30	6SL312-1-TE23-0AA3	1	4 × 2.5	6FX002-5N11-....

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 MOTION-CONNECT connection systems

4

¹⁾ Connector size 3 is not rotatable. An alternative terminal box can be selected with connector size 3 only.

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

⁶⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 High Dynamic motors Forced ventilation/Water cooling

Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	SIMOTICS S-1FT7 High Dynamic synchronous motors	Number of pole pairs	Moment of inertia of rotor (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 $\Delta T=100\text{ K}$		p	J	m
rpm		kW (HP)	Nm (lbr-ft)	Nm (lbr-ft)	A	Order No.		10^{-4} kgm^2 ($10^{-3}\text{ lbr-in-s}^2$)	kg (lb)
1FT7 High Dynamic for DC link voltage 510 ... 720 V DC – Forced ventilation									
3000	63	3.8 (5.10)	14 (10.3)	12 (8.90)	10.5	1FT7065-7SF7-1 ■ ■ ■ ■	5	6.4 (5.66)	19 (41.9)
		4.4 (5.90)	17 (12.5)	14 (10.3)	13	1FT7067-7SF7-1 ■ ■ ■ ■	5	8.3 (7.35)	23 (50.7)
	80	7.2 (9.66)	34 (25.1)	23 (17.0)	20	1FT7085-7SF7-1 ■ ■ ■ ■	5	20.7 (18.3)	34 (75.0)
		10.4 (14.0)	48 (35.4)	33 (24.3)	29	1FT7087-7SF7-1 ■ ■ ■ ■	5	27.4 (24.3)	42 (92.6)
4500	63	5.2 (6.97)	14 (10.3)	11 (8.10)	13.5	1FT7065-7SH7-1 ■ ■ ■ ■	5	6.4 (5.66)	19 (41.9)
		6.1 (8.18)	17 (12.5)	13 (9.60)	15	1FT7067-7SH7-1 ■ ■ ■ ■	5	8.3 (7.35)	23 (50.7)
	80	8.2 (11.0)	34 (25.1)	17.5 (12.9)	22.5	1FT7085-7SH7-1 ■ ■ ■ ■	5	20.7 (18.3)	34 (75.0)
		10.8 (14.5)	48 (35.4)	23 (17.0)	24	1FT7087-7SH7-1 ■ ■ ■ ■	5	27.4 (24.3)	43 (94.8)
1FT7 High Dynamic for DC link voltage 510 ... 720 V DC – Water cooling									
3000	63	5.7 (7.64)	19 (14.0)	18 (13.3)	15	1FT7065-7WF7-1 ■ ■ ■ ■	5	6.4 (5.66)	16 (35.3)
		7.4 (9.92)	25 (18.4)	23.5 (17.3)	21	1FT7067-7WF7-1 ■ ■ ■ ■	5	8.3 (7.35)	22 (48.5)
	80	11.9 (16.0)	43 (31.7)	38 (28.0)	32	1FT7085-7WF7-1 ■ ■ ■ ■	5	20.7 (18.3)	32 (70.6)
		16.0 (21.5)	61 (45.0)	51 (37.6)	43	1FT7087-7WF7-1 ■ ■ ■ ■	5	27.4 (24.3)	41 (90.4)
4500	63	7.8 (10.5)	19 (14.0)	16.5 (12.2)	20	1FT7065-7WH7-1 ■ ■ ■ ■	5	6.4 (5.66)	16 (35.3)
		10.4 (14.0)	25 (18.4)	22 (16.2)	25	1FT7067-7WH7-1 ■ ■ ■ ■	5	8.3 (7.35)	22 (48.5)
	80	15.6 (20.9)	43 (31.7)	33 (24.3)	48	1FT7085-7WH7-1 ■ ■ ■ ■	5	20.7 (18.3)	32 (70.6)
		21.7 (29.1)	61 (45.0)	46 (33.9)	53	1FT7087-7WH7-1 ■ ■ ■ ■	5	27.4 (24.3)	41 (90.4)
Type of construction:			IM B5 IM B5		Flange 0 Flange 1 (compatible with 1FT6)		0 1		
Connector outlet direction:			Connector sizes 1 and 1.5		Rotatable connector		1		
			Connector size 3 ¹⁾		Transverse right Transverse left Axial NDE Axial DE	1			
						2			
						3			
						4			
Terminal box/ cable entry: ¹⁾			Top/transverse from right Top/transverse from left Top/axial from NDE Top/axial from DE				5		
							6		
							7		
							8		
Encoder systems for motors without DRIVE-CLiQ interface:			IC2048S/R encoder AM2048S/R encoder				N		
							M		
Encoder systems for motors with DRIVE-CLiQ interface:			AS24DQI encoder AM24DQI encoder				B		
							C		
Shaft extension:			Shaft and flange accuracy:		Holding brake:				
Feather key and keyway			Tolerance N		Without			A	
Feather key and keyway			Tolerance N		With			B	
Feather key and keyway			Tolerance R		Without			D	
Feather 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 severity:			Degree of protection:						
Grade A			IP64					0	
Grade A			IP65					1	
Grade A			IP67 (only for water cooling)					2	
Grade R			IP64					3	
Grade R			IP65					4	
Grade R			IP67 (only for water cooling)					5	

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

SIMOTICS servomotors

SIMOTICS S synchronous motors for SINAMICS S120

SIMOTICS S-1FT7 High Dynamic motors
Forced ventilation/Water cooling

Motor type (repeated)	Efficiency ²⁾ η %	Stall current I_0 at M_0 $\Delta T=100$ K A	Calculated power P_{calc} ⁵⁾ P_{calc} at 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 ³⁾ I_{rated} A	Booksize format For additional versions and components see SINAMICS S120 drive system Order No.	Power connector Size	Cable cross-section ⁴⁾ mm ²	Pre-assembled cable Order No.
1FT7065-7SF7...	92	12	4.4 (5.90)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX002-5 N21-....
1FT7067-7SF7...	94	15	5.3 (7.11)	18	6SL312-1-TE21-8AA3	1.5	4 × 1.5	6FX002-5 N21-....
1FT7085-7SF7...	92	28	10.7 (14.4)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5 N41-....
1FT7087-7SF7...	93	40	15.1 (20.3)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX002-5 N64-....
1FT7065-7SH7...	92	16	6.6 (8.85)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5 N31-....
1FT7067-7SH7...	94	19	8.0 (10.7)	30	6SL312-1-TE23-0AA3	1.5	4 × 2.5	6FX002-5 N31-....
1FT7085-7SH7...	92	40	16.0 (21.5)	45	6SL312-1-TE24-5AA3	1.5	4 × 10	6FX002-5 N64-....
1FT7087-7SH7...	93	45	22.6 (30.3)	45	6SL312-1-TE24-5AA3	3	4 × 10	6FX002-5 S14-....
1FT7065-7WF7...	92	16	6.0 (8.05)	18	6SL312-1-TE21-8AA3	1.5	4 × 2.5	6FX002-5 N31-....
1FT7067-7WF7...	94	22	7.9 (10.6)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5 N41-....
1FT7085-7WF7...	93	36	13.5 (18.1)	45	6SL312-1-TE24-5AA3	1.5	4 × 6	6FX002-5 N54-....
1FT7087-7WF7...	94	51	19.2 (25.8)	60	6SL312-1-TE26-0AA3	3	4 × 16	6FX002-5 S23-....
1FT7065-7WH7...	92	22	9.0 (12.1)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5 N41-....
1FT7067-7WH7...	94	28	11.8 (15.8)	30	6SL312-1-TE23-0AA3	1.5	4 × 4	6FX002-5 N41-....
1FT7085-7WH7...	94	58	20.3 (27.2)	60	6SL312-1-TE26-0AA3	3	4 × 16	6FX002-5 S23-....
1FT7087-7WH7...	94	67	28.7 (38.5)	85	6SL312-1-TE28-5AA3	3	4 × 25	6FX002-5 DG33-....

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
MOTION-CONNECT connection systems

¹⁾ Connector size 3 is not rotatable. An alternative terminal box can be selected with connector size 3 only.

²⁾ Optimum efficiency in continuous duty.

³⁾ With default setting of the pulse frequency.

⁴⁾ The current carrying capacity of the power cable complies with EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C (104 °F).

⁵⁾ $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$ $P_{calc} [hp] = \frac{M_0 [lb-ft] \times n_{rated}}{5250}$