

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 core type motors

Natural cooling

Selection and Ordering Data

Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Core type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10^{-4} kgm^2 (lb _f -in-s ²)	kg (lb)
2000	100	4.8 (6.4)	27 (239)	23 (204)	11	1FT6102 - 1AC71 - ■ ■ ■ 1	4	99 (0.0876)	27.5 (60.6)
		8.0 (10.7)	50 (443)	38 (336)	17.6	1FT6105 - 1AC71 - ■ ■ ■ 1	4	168 (0.1487)	39.5 (87.1)
3000	48	1.4 (1.9)	5 (44)	4.3 (38.1)	2.9	1FT6044 - 1AF71 - ■ ■ ■ 1	2	5.1 (0.0045)	8.3 (18.3)
	63	1.5 (2.0)	6 (53)	4.7 (41.6)	3.4	1FT6062 - 1AF71 - ■ ■ ■ 1	3	8.5 (0.0752)	9.5 (20.9)
		2.2 (3.0)	9.5 (84.1)	7 (62)	4.9	1FT6064 - 1AF71 - ■ ■ ■ 1	3	13 (0.0115)	12.5 (27.6)
	80	3.2 (4.3)	13 (115)	10.3 (91.2)	8.7	1FT6082 - 1AF71 - ■ ■ ■ 1	4	30 (0.0266)	15 (33.1)
		4.6 (6.2)	20 (177)	14.7 (130.1)	11	1FT6084 - 1AF71 - ■ ■ ■ 1	4	48 (0.0425)	20.5 (45.2)
		5.8 (7.8)	27 (239)	18.5 (163.7)	13	1FT6086 - 1AF71 - ■ ■ ■ 1	4	66.5 (0.0589)	25.5 (56.2)
4500	63	1.7 (2.3)	6 (53)	3.6 (31.9)	3.9	1FT6062 - 1AH71 - ■ ■ ■ 1	3	8.5 (0.0752)	9.5 (20.9)
		2.3 (3.1)	9.5 (84.1)	4.8 (42.5)	5.5	1FT6064 - 1AH71 - ■ ■ ■ 1	3	13 (0.0115)	12.5 (27.6)
	80	4.9 (6.7)	20 (177)	10.5 (92.9)	12.5	1FT6084 - 1AH71 - ■ ■ ■ 1	4	48 (0.0425)	20.5 (45.2)
6000	36	0.88 (1.2)	2 (18)	1.4 (12.4)	2.1	1FT6034 - 1AK71 - ■ ■ ■ 1	2	1.1 (0.001)	4.4 (9.7)
	80	4.1 (5.5)	20 (177)	6.5 (57.5)	9.2	1FT6084 - 1AK71 - ■ ■ ■ 1	4	48 (0.0425)	20.5 (45.2)

Type:	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:	Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾	A E	
Shaft extension:	Rotational accuracy:	Holding brake:	
Plain shaft	Tolerance N	without	G H
Plain shaft	Tolerance N	with	
Vibration severity:	Degree of protection:		
Grade N	IP65		

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Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power 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 ³⁾	Order No.	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A		Power connector	Motor cable cross- section ²⁾	Order No. Pre-assembled cable
					Size	mm ²	
1FT6102-1AC7...	12.1	5.7 (7.6)	18	For ordering data, see "Converter systems"	1.5	4 x 1.5	6FX ■ 02 - 5 ■ A21 -
1FT6105-1AC7...	21.4	10.5 (14.1)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6044-1AF7...	3	1.6 (2.1)	3		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6062-1AF7...	4.1	1.9 (2.6)	5		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6064-1AF7...	6.1	3.0 (4.0)	9		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6082-1AF7...	9.6	4.1 (5.5)	18		1.5	4 x 1.5	6FX ■ 02 - 5 ■ A21 -
1FT6084-1AF7...	13.2	6.3 (8.5)	18		1.5	4 x 1.5	6FX ■ 02 - 5 ■ A21 -
1FT6086-1AF7...	16.4	8.5 (11.4)	18		1.5	4 x 2.5	6FX ■ 02 - 5 ■ A31 -
1FT6062-1AH7...	5.7	2.8 (3.8)	9		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6064-1AH7...	9.0	4.5 (6.0)	9		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6084-1AH7...	19.8	9.4 (12.6)	18		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6086-1AH7...	23.3	12.7 (17.0)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6034-1AK7...	2.6	1.3 (1.7)	3		1	4 x 1.5	6FX ■ 02 - 5 ■ A01 -
1FT6084-1AK7...	24.1	12.6 (16.9)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
Type of power cable:							
MOTION-CONNECT 800							8 0
MOTION-CONNECT 700 (only with brake cores)							7 0
MOTION-CONNECT 500							5 0
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)							5 1
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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

²⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

³⁾ For the default setting of pulse frequency.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors

Natural cooling

Selection and Ordering Data

Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
1500	100	3.8 (5.1)	27 (239)	24.5 (216.8)	8.4	1FT6102 - 8AB7■ - ■ ■ ■ ■ ■	4	99 (0.0876)	27.5 (60.6)
		6.4 (8.9)	50 (443)	41 (363)	14.5	1FT6105 - 8AB7■ - ■ ■ ■ ■ ■	4	168 (0.1487)	39.5 (87.1)
		9.6 (12.9)	70 (620)	61 (540)	20.5	1FT6108 - 8AB7■ - ■ ■ ■ ■ ■	4	260 (0.2301)	55.5 (122.4)
	132	9.7 (13)	75 (664)	62 (549)	19	1FT6132 - 6AB7 1 - ■ ■ ■ ■ ■	3	430 (0.3806)	85 (187.4)
		11.8 (15.8)	95 (841)	75 (664)	24	1FT6134 - 6AB7 1 - ■ ■ ■ ■ ■	3	547 (0.4841)	100 (220.5)
		13.8 (18.5)	115 (1018)	88 (779)	27	1FT6136 - 6AB7 1 - ■ ■ ■ ■ ■	3	664 (0.5876)	117 (258)
Type:			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:			Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ Multipole resolver 2-pole resolver			A E S T			
Shaft extension:			Rotational 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 severity:			Degree of protection:						
Grade N			IP64					0	
Grade N			IP65					1	
Grade N			IP67					2	
Grade N			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, see "Selection guide".

Synchronous motors

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Natural cooling

Selection and Ordering Data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power module		Power cable with complete shield		
	I_0 at M_0 $\Delta T=100\text{ K}$ A	P_{calc} for M_0 $\Delta T=100\text{ K}$ kW (HP)	Rated output current ³⁾ I_{rated} A	Order No.	Motor connection (and brake connection) via power connector		
					Power connector	Motor cable cross- section ⁴⁾ mm ²	Order No. Pre-assembled cable
					Size		
1FT6102-8AB7...	8.7	4.2 (5.63)	9	For ordering data, see "Converter systems"	1.5	4 x 1.5	6FX ■ 02 - 5 ■ A21 -
1FT6105-8AB7 ...	16.0	7.9 (10.59)	18		1.5	4 x 2.5	6FX ■ 02 - 5 ■ A31 -
1FT6108-8AB7...	22.3	11.0 (14.75)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6132-6AB7 ...	21.6	11.8 (15.82)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6134-6AB7 ...	27.0	14.9 (19.97)	28		1.5	4 x 4	6FX ■ 02 - 5 ■ A41 -
1FT6136-6AB7 ...	34	18.1 (24.26)	56		1.5	4 x 10	6FX ■ 002 - 5 ■ A61 -
Type of power cable:							
MOTION-CONNECT 800							8 0
MOTION-CONNECT 700 (only <u>with</u> brake cores)							7 0
MOTION-CONNECT 500							5 0
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)							5 1
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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 fixing holes.

³⁾ For the default setting of pulse frequency.

⁴⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

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Selection and Ordering Data

Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
2000	63	0.8 (1.1)	4 (35)	3.7 (32.7)	1.9	1FT6061 - 6AC7■ - ■ ■ ■ ■ ■	3	6 (0.0053)	8 (17.6)
		1.1 (1.5)	6 (53)	5.2 (46)	2.6	1FT6062 - 6AC7■ - ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		1.7 (2.3)	9.5 (84.1)	8 (71)	3.8	1FT6064 - 6AC7■ - ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	1.6 (5.1)	8 (71)	7.5 (66.4)	4.1	1FT6081 - 8AC7■ - ■ ■ ■ ■ ■	4	21 (0.0186)	12.5 (27.6)
		2.4 (3.2)	13 (115)	11.4 (101)	6.6	1FT6082 - 8AC7■ - ■ ■ ■ ■ ■	4	30 (0.0266)	15 (33.1)
		3.5 (4.7)	20 (177)	16.9 (149.6)	8.3	1FT6084 - 8AC7■ - ■ ■ ■ ■ ■	4	48 (0.0425)	20.5 (45.2)
		4.7 (6.3)	27 (239)	22.5 (199)	10.9	1FT6086 - 8AC7■ - ■ ■ ■ ■ ■	4	66.5 (0.0589)	25.5 (56.2)
	100	4.8 (6.4)	27 (239)	23 (204)	11	1FT6102 - 8AC7■ - ■ ■ ■ ■ ■	4	99 (0.0876)	27.5 (60.6)
		8.0 (10.7)	50 (443)	38 (336)	17.6	1FT6105 - 8AC7■ - ■ ■ ■ ■ ■	4	168 (0.1478)	39.5 (87.1)
		11.5 (15.4)	70 (620)	55 (487)	24.5	1FT6108 - 8AC7■ - ■ ■ ■ ■ ■	4	260 (0.2301)	55.5 (122.4)
	132	11.5 (15.4)	75 (664)	55 (487)	23	1FT6132 - 6AC71 - ■ ■ ■ ■ ■	3	430 (0.3806)	85 (188)
		13.6 (18.2)	95 (841)	65 (575)	27	1FT6134 - 6AC71 - ■ ■ ■ ■ ■	3	547 (0.4841)	100 (221)
		15.5 (20.8)	115 (1018)	74 (665)	30	1FT6136 - 6AC71 - ■ ■ ■ ■ ■	3	664 (0.5876)	117 (258)
Type:			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:			Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ Multipole resolver 2-pole resolver			A E S T			
Shaft extension:			Rotational 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 severity:			Degree of protection:						
Grade N			IP64			0			
Grade N			IP65			1			
Grade N			IP67			2			
Grade N			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, see "Selection guide".

Synchronous motors

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1FT6 standard type motors
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Selection and Ordering Data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power 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 ³⁾	Order No.	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A		Power connector	Motor cable cross- section ⁵⁾	Order No. Pre-assembled cable
					Size	mm ²	
1FT6061-6AC7...	1.9	0.84 (1.13)	3	For ordering data, see "Converter systems"	1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6062-6AC7...	2.7	1.3 (1.74)	3		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6064-6AC7...	4.2	2.0 (2.68)	5		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6081-8AC7...	3.9	1.7 (2.28)	5		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6082-8AC7...	6.6	2.7 (3.62)	9		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6084-8AC7...	8.8	4.2 (5.63)	9		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6086-8AC7...	11.3	5.7 (7.64)	18		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6102-8AC7...	12.1	5.7 (7.64)	18		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6105-8AC7...	21.4	10.5 (14.07)	28		1.5	4 x 4	6FX ■ ■ 02 - 5 ■ A41 -
1FT6108-8AC7...	29	14.7 (19.71)	28 ⁴⁾		1.5	4 x 6	6FX ■ ■ 02 - 5 ■ A51 -
1FT6132-6AC7...	29	15.7 (21.05)	28 ⁴⁾		1.5	4 x 6	6FX ■ ■ 02 - 5 ■ A51 -
1FT6134-6AC7...	36	19.9 (26.68)	56		1.5	4 x 10	6FX ■ ■ 02 - 5 ■ A61 -
1FT6136-6AC7...	42	24.1 (32.31)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -
Type of power cable:							
MOTION-CONNECT 800							8 0
MOTION-CONNECT 700 (only <u>with</u> brake cores)							7 0
MOTION-CONNECT 500							5 0
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)							5 1
Without brake cores							C D
With brake cores							
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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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 fixing holes.

³⁾ For the default setting of pulse frequency.

⁴⁾ With the specified power module, the motor cannot be fully utilized at M_0 at $\Delta T = 100 \text{ K}$ winding temperature rise. If a power 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 IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

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Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
3000	48	0.7 (0.99)	2.6 (23)	2.15 (19)	1.7	1FT6041 - 4AF7 1 - ■ ■ ■ ■ ■	2	2.9 (0.0025)	6.6 (14.6)
		1.4 (1.9)	5 (44)	4.3 (38.1)	2.9	1FT6044 - 4AF7 1 - ■ ■ ■ ■ ■	2	5.1 (0.0045)	8.3 (18.3)
	63	1.1 (1.5)	4 (35)	3.5 (31)	2.6	1FT6061 - 6AF7 ■ - ■ ■ ■ ■ ■	3	6 (0.0053)	8 (17.6)
		1.5 (2.0)	6 (53)	4.7 (41.6)	3.4	1FT6062 - 6AF7 ■ - ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		2.2 (2.95)	9.5 (84.1)	7 (62)	4.9	1FT6064 - 6AF7 ■ - ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	2.2 (2.95)	8 (71)	6.9 (61.1)	5.6	1FT6081 - 8AF7 ■ - ■ ■ ■ ■ ■	4	21 (0.0186)	12.5 (27.6)
		3.2 (4.3)	13 (115)	10.3 (91.2)	8.7	1FT6082 - 8AF7 ■ - ■ ■ ■ ■ ■	4	30 (0.0266)	15 (33.1)
		4.6 (6.2)	20 (177)	14.7 (130.1)	11	1FT6084 - 8AF7 ■ - ■ ■ ■ ■ ■	4	48 (0.0425)	20.5 (45.2)
		5.8 (7.8)	27 (239)	18.5 (163.7)	13	1FT6086 - 8AF7 ■ - ■ ■ ■ ■ ■	4	66.5 (0.0589)	25.5 (56.2)
	100	6.1 (8.2)	27 (239)	19.5 (172.6)	13.2	1FT6102 - 8AF7 ■ - ■ ■ ■ ■ ■	4	99 (0.0876)	27.5 (60.6)
		9.7 (13)	50 (443)	31 (274)	22.5	1FT6105 - 8AF7 ■ - ■ ■ ■ ■ ■	4	168 (0.1487)	39.5 (87.1)
		11.6 (15.2)	70 (620)	37 (328)	25	1FT6108 - 8AF7 ■ - ■ ■ ■ ■ ■	4	260 (0.2301)	55.5 (122.4)
	132	11.3 (15.2)	75 (664)	36 (319)	23	1FT6132 - 6AF7 1 - ■ ■ ■ ■ ■	3	430 (0.3806)	85 (187.4)
Type:			IM B5 IM B14 ²⁾ (not for 1FT604/1FT613)			1 2			
Connector outlet direction:			Transverse right (not for 1FT604/1FT606) Transverse left (not for 1FT604/1FT606) 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:			Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ Multipole resolver 2-pole resolver			A E S T			
Shaft extension:			Rotational 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				
Plain shaft			Tolerance R		with				
Vibration severity:			Degree of protection:			0 1 2 6 3 4 5 7			
Grade N			IP64						
Grade N			IP65						
Grade N			IP67						
Grade N			IP68						
Grade R			IP64						
Grade R			IP65						
Grade R			IP67						
Grade R			IP68						

To select the degree of protection and type, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Natural cooling

Selection and Ordering Data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power 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 ³⁾ I_{rated}	Order No.	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A		Power connector Size	Motor cable cross- section ⁴⁾ mm ²	Order No. Pre-assembled cable
1FT6041-4AF7 ...	1.9	0.8 (1.07)	3	For ordering data, see "Converter systems"	1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6044-4AF7 ...	3	1.6 (2.14)	3		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6061-6AF7 ...	2.7	1.3 (1.74)	3		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6062-6AF7 ...	4.1	1.9 (2.55)	5		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6064-6AF7 ...	6.1	3.0 (4.02)	9		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6081-8AF7 ...	5.8	2.5 (3.35)	9		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6082-8AF7 ...	9.6	4.1 (5.5)	18		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6084-8AF7 ...	13.2	6.3 (8.45)	18		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6086-8AF7 ...	16.4	8.5 (11.39)	18		1.5	4 x 2.5	6FX ■ ■ 02 - 5 ■ A31 -
1FT6102-8AF7 ...	16.9	8.5 (11.39)	18		1.5	4 x 2.5	6FX ■ ■ 02 - 5 ■ A31 -
1FT6105-8AF7 ...	32	15.7 (21.05)	28 ⁵⁾		1.5	4 x 6	6FX ■ ■ 02 - 5 ■ A51 -
1FT6108-8AF7 ...	41	22.0 (29.49)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -
1FT6132-6AF7 ...	43	23.6 (31.64)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -
Type of power cable:							
MOTION-CONNECT 800						8 0	
MOTION-CONNECT 700 (only <u>with</u> brake cores)						7 0	
MOTION-CONNECT 500						5 0	
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)						5 1	
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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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 fixing holes.

³⁾ For the default setting of pulse frequency.

⁴⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

⁵⁾ With the specified power module, the motor cannot be fully utilized at M_0 at $\Delta T=100$ K winding temperature rise. If a power module with a higher rating is used, you must check whether the specified power cable can be connected to it.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors

Natural cooling

Selection and Ordering Data

Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Standard type		J	m	
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)	
4500	63	1.4 (1.9)	4 (35)	2.9 (25.7)	3.4	1FT6061 - 6AH7■ - ■ ■ ■ ■ ■	3	6 (0.0053)	8 (17.6)	
		1.7 (2.3)	6 (53)	3.6 (31.9)	3.9	1FT6062 - 6AH7■ - ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)	
		2.3 (3.1)	9.5 (84.1)	4.8 (42.5)	5.5	1FT6064 - 6AH7■ - ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)	
	80	2.7 (3.6)	8 (71)	5.8 (51.3)	7.3	1FT6081 - 8AH7■ - ■ ■ ■ ■ ■	4	21 (0.0186)	12.5 (27.6)	
		4 (5.4)	13 (115)	8.5 (75.2)	11	1FT6082 - 8AH7■ - ■ ■ ■ ■ ■	4	30 (0.0266)	15 (33.1)	
		4.9 (6.6)	20 (177)	10.5 (92.9)	12.5	1FT6084 - 8AH7■ - ■ ■ ■ ■ ■	4	48 (0.0425)	20.5 (45.2)	
		5.7 (7.6)	27 (239)	12 (106.2)	12.6	1FT6086 - 8AH7■ - ■ ■ ■ ■ ■	4	66.5 (0.0589)	25.5 (56.2)	
	100	5.7 (7.6)	27 (239)	12 (106.2)	12	1FT6102 - 8AH7■ - ■ ■ ■ ■ ■	4	99 (0.0876)	27.5 (60.6)	
	Type:			IM B5 IM B14 ²⁾			1 2			
	Connector outlet direction:			Transverse right (not for 1FT606) Transverse left (not for 1FT606) Axial NDE 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:			Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ Multipole resolver 2-pole resolver			A E S T				
Shaft extension:			Rotational 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 severity:			Degree of protection:							
Grade N			IP64					0		
Grade N			IP65					1		
Grade N			IP67					2		
Grade N			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, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Natural cooling

Selection and Ordering Data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power module		Power cable with complete shield		
	I_0 at M_0 $\Delta T=100\text{ K}$ A	P_{calc} for M_0 $\Delta T=100\text{ K}$ kW (HP)	Rated output current ³⁾	Order No.	Motor connection (and brake connection) via power connector		
			I_{rated} A		Power connector	Motor cable cross- section ⁵⁾ mm ²	Order No. Pre-assembled cable
1FT6061-6AH7...	4	1.9 (2.6)	5	For ordering data, see "Converter systems"	1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6062-6AH7...	5.7	2.8 (3.8)	9		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6064-6AH7...	9.0	4.5 (6.0)	9		1	4 x 1.5	6FX ■ ■ 02 - 5 ■ A01 -
1FT6081-8AH7...	8.6	3.8 (5.1)	9		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6082-8AH7...	14.8	6.1 (8.2)	18		1.5	4 x 1.5	6FX ■ ■ 02 - 5 ■ A21 -
1FT6084-8AH7...	19.8	9.4 (12.6)	18 ⁴⁾		1.5	4 x 4	6FX ■ ■ 02 - 5 ■ A41 -
1FT6086-8AH7...	23.3	12.7 (17.0)	28		1.5	4 x 4	6FX ■ ■ 02 - 5 ■ A41 -
1FT6102-8AH7...	24.1	12.7 (17.0)	28		1.5	4 x 4	6FX ■ ■ 02 - 5 ■ A41 -
Type of power cable:							
MOTION-CONNECT 800							8 0
MOTION-CONNECT 700 (only <u>with</u> brake cores)							7 0
MOTION-CONNECT 500							5 0
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)							5 1
Without brake cores							C
With brake cores							D
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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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 fixing holes.

³⁾ For the default setting of pulse frequency.

⁴⁾ With the specified power module, the motor cannot be fully utilized at M_0 at $\Delta T = 100\text{ K}$ winding temperature rise. If a power 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 IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors

Natural cooling

Selection and Ordering Data

Rated speed	Shaft height	Rated power	Static torque	Rated torque ¹⁾	Rated current	1FT6 synchronous motors Natural cooling	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
6000	28	0.19 (0.25)	0.4 (3.5)	0.3 (2.7)	1.1	1FT6021 - 6AK71 - ■ ■ ■ ■ ■	3	0.21 (0.0002)	1.2 (2.6)
		0.31 (0.42)	0.8 (7.1)	0.5 (4.4)	0.9	1FT6024 - 6AK71 - ■ ■ ■ ■ ■	3	0.34 (0.0003)	2.1 (4.6)
	36	0.47 (0.63)	1 (9)	0.75 (6.6)	1.2	1FT6031 - 4AK71 - ■ ■ ■ ■ ■	2	0.65 (0.0006)	3.1 (6.8)
		0.88 (1.18)	2 (18)	1.4 (12.4)	2.1	1FT6034 - 4AK71 - ■ ■ ■ ■ ■	2	1.1 (0.0010)	4.4 (9.7)
	48	1.1 (1.5)	2.6 (23)	1.7 (15)	2.4	1FT6041 - 4AK71 - ■ ■ ■ ■ ■	2	2.9 (0.0025)	6.6 (14.6)
		1.9 (2.6)	5 (44)	3 (26.6)	4.1	1FT6044 - 4AK71 - ■ ■ ■ ■ ■	2	5.1 (0.0045)	8.3 (18.3)
	63	1.3 (1.7)	4 (35)	2.1 (18.6)	3.1	1FT6061 - 6AK71 - ■ ■ ■ ■ ■	3	6 (0.0053)	8 (17.6)
		1.3 (1.7)	6 (53)	2.1 (18.6)	3.2	1FT6062 - 6AK71 - ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		1.3 (1.7)	9.5 (84.1)	2.1 (18.6)	3.5	1FT6064 - 6AK71 - ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	2.9 (13.9)	8 (70.8)	4.6 (40.7)	7.7	1FT6081 - 8AK71 - ■ ■ ■ ■ ■	4	21 (0.0186)	12.5 (27.6)
		3.5 (4.7)	13 (115)	5.5 (48.7)	9.1	1FT6082 - 8AK71 - ■ ■ ■ ■ ■	4	30 (0.0266)	15 (33.1)
		4.1 (5.6)	20 (177)	6.5 (57.5)	9.2	1FT6084 - 8AK71 - ■ ■ ■ ■ ■	4	48 (0.0425)	20.5 (45.2)
Type:			IM B5 IM B14 ²⁾ (not for 1FT602/1FT603/1FT604)			1 2			
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:			Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ (not for 1FT602) Absolute encoder EnDat 512 pulses/revolution ¹⁾ (not for 1FT602) Multipole resolver 2-pole resolver			A E H S T			
Shaft extension:			Rotational 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 severity:			Degree of protection:						
Grade N			IP64				0		
Grade N			IP65 (not for 1FT602)				1		
Grade N			IP67				2		
Grade N			IP68 (not for 1FT602)				6		
Grade R			IP64				3		
Grade R			IP65 (not for 1FT602)				4		
Grade R			IP67				5		
Grade R			IP68 (not for 1FT602)				7		

To select the degree of protection and type, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Natural cooling

Selection and Ordering Data

Motor type (continued)	Static current	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$	SIMODRIVE 611 power 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 ³⁾	Order No.	Motor connection (and brake connection) via power connector		
	A	kW (HP)	A		Power connector	Motor cable cross- section ⁴⁾	Order No. Pre-assembled cable
					Size	mm ²	
1FT6021-6AK7 ...	1.25	0.3 (0.4)	3	For ordering data, see "Converter systems"	1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6024-6AK7 ...	1.25	0.5 (0.7)	3		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6031-4AK7 ...	1.4	0.6 (0.8)	3		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6034-4AK7 ...	2.6	1.3 (1.7)	3		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6041-4AK7 ...	3	1.6 (2.1)	3		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6044-4AK7 ...	5.9	3.1 (4.2)	9		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6061-6AK7...	5	2.5 (3.4)	5		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6062-6AK7...	7.6	3.8 (5.1)	9		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6064-6AK7...	12	4.0 (5.4)	18		1	4 x 1.5	6FX ■■■02- 5■■A01 -
1FT6081-8AK7...	11.1	5.0 (6.7)	18		1.5	4 x 1.5	6FX ■■■02- 5■■A21 -
1FT6082-8AK7...	17.3	8.2 (10.99)	18		1.5	4 x 2.5	6FX ■■■02- 5■■A31 -
1FT6084-8AK7...	24.1	12.6 (16.9)	28		1.5	4 x 4	6FX ■■■02- 5■■A41 -
Type of power cable:							
MOTION-CONNECT 800							8 0
MOTION-CONNECT 700 (only <u>with</u> brake cores)							7 0
MOTION-CONNECT 500							5 0
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm ²)							5 1
Without brake cores							
With brake cores							C D
For length code as well as power and signal cables, see "MOTION-CONNECT connection system".							

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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 fixing holes.

³⁾ For the default setting of pulse frequency.

⁴⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors 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⁾	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10^{-4} kgm^2 (lb _f -in-s ²)	kg (lb)
1500	100	9.3 (12.5)	65 (575)	59 (522)	21.7	1FT6105 - 8SB7 - ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
		13 (17)	90 (797)	83 (735)	31	1FT6108 - 8SB7 - ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
	132	16 (21)	110 (974)	102 (903)	36	1FT6132 - 6SB71 - ■ ■ ■ ■ ■	3	430 (0.3806)	91 (201)
		20.4 (27.4)	140 (1239)	130 (1151)	45	1FT6134 - 6SB71 - ■ ■ ■ ■ ■	3	547 (0.4810)	106 (234)
		25.1 (33.7)	175 (1549)	160 (1417)	55	1FT6136 - 6SB71 - ■ ■ ■ ■ ■	3	664 (0.5876)	123 (271)
2000	100	11.7 (15.7)	65 (575)	56 (496)	28	1FT6105 - 8SC7 - ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
		16.8 (22.5)	90 (797)	80 (708)	40	1FT6108 - 8SC7 - ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
	132	20.5 (27.5)	110 (974)	98 (867)	46	1FT6132 - 6SC71 - ■ ■ ■ ■ ■	3	430 (0.3806)	91 (201)
		26.2 (35.1)	140 (1239)	125 (1106)	57	1FT6134 - 6SC71 - ■ ■ ■ ■ ■	3	547 (0.4810)	106 (234)
		32.5 (43.6)	175 (1549)	155 (1372)	72	1FT6136 - 6SC71 - ■ ■ ■ ■ ■	3	664 (0.5876)	123 (271)

Type:		IM B5 IM B14 ³⁾	1 2
Connector outlet direction:		Transverse right Transverse left 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:		Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution ¹⁾ Multipole resolver 2-pole resolver	A E S T
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	A B D E G H K L
Rotational accuracy:		Tolerance N Tolerance N Tolerance R Tolerance R	
Holding brake:		without with without with	
Vibration severity:		Grade N Grade N Grade R Grade R	0 1 3 4
Degree of protection: ⁴⁾		IP64 IP65 IP64 IP65	

To select the degree of protection and type, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Forced ventilation

Selection and Ordering Data

Motor type (continued)	Static current I_0 at M_0 $\Delta T = 100$ K A	Calculated power $P_{calc} =$ $M_0 \times n_{rated} / 9550$ P_{calc} for M_0 $\Delta T = 100$ K kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield		
			Rated output current ⁵⁾ I_{rated} A	Order No.	Motor connection (and brake connection) via power connector		
					Power connector Size	Motor cable cross- section ⁷⁾ mm ²	Order No. Pre-assembled cable
1FT6105-8SB7...	21.9	10.2 (13.7)	28	For ordering data, see "Converter systems"	1.5	4 x 4	6FX 002-5A41 -
1FT6108-8SB7...	30	14.1 (18.9)	28 ⁶⁾		1.5	4 x 6	6FX 002-5A51 -
1FT6132-6SB7...	36	17.3 (23.2)	56		3	4 x 10	6FX 5 002-5A13 -
1FT6134-6SB7...	44	22.0 (29.5)	56		3	4 x 10	6FX 5 002-5A13 -
1FT6136-6SB7...	55	27.5 (36.9)	56		3	4 x 16	6FX 002-5A23 -
1FT6105-8SC7...	30	13.6 (18.2)	28 ⁶⁾		1.5	4 x 6	6FX 002-5A51 -
1FT6108-8SC7...	41	18.8 (25.2)	56		3	4 x 10	6FX 5 002-5A13 -
1FT6132-6SC7...	47	23.0 (30.6)	56		3	4 x 10	6FX 5 002-5A13 -
1FT6134-6SC7...	58	29.3 (39.3)	56 ⁶⁾		3	4 x 16	6FX 002-5A23 -
1FT6136-6SC7...	77	36.6 (49.1)	140		3	4 x 25	6FX 002-5DA33 -

Type of power cable:

MOTION-CONNECT 800
MOTION-CONNECT 700 (only with brake cores)
MOTION-CONNECT 500
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm²)

8 0
7 0
5 0
5 1

C
D

Without brake cores
With brake cores

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

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Notes on forced ventilation:

	Shaft heights SH 80 and SH 100	Shaft height SH 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	220/260 V 1 AC, 50/60 Hz	400/460 V 3 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	70 dB (A)	74 dB (A)

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

²⁾ Not for use in atmospheres containing conductive dust. Forced ventilation cannot be used if flammable, chemically aggressive, electrically-conductive or explosive dust is present.

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

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

⁵⁾ For the default setting of pulse frequency.

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

⁷⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors 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⁾	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
3000	80	6.9 (9.3)	26 (230)	22 (195)	17	1FT6084 - 8SF7 - ■ ■ ■ ■ ■	4	48 (0.0425)	25 (55.1)
		9.7 (13)	35 (310)	31 (274)	24.5	1FT6086 - 8SF7 - ■ ■ ■ ■ ■	4	66.5 (0.0589)	30 (66.2)
	100	15.7 (21.1)	65 (575)	50 (443)	35	1FT6105 - 8SF7 - ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
		22 (30)	90 (797)	70 (620)	53	1FT6108 - 8SF7 - ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
	132	28.3 (37.9)	110 (974)	90 (797)	62	1FT6132 - 6SF7 1 - ■ ■ ■ ■ ■	3	430 (0.3806)	91 (201)
		34.6 (46.4)	140 (1239)	110 (974)	72	1FT6134 - 6SF7 1 - ■ ■ ■ ■ ■	3	547 (0.4810)	106 (234)
4500	80	9.4 (12.6)	26 (230)	20 (177)	24.5	1FT6084 - 8SH7 - ■ ■ ■ ■ ■	4	48 (0.0425)	25 (55.1)
		12.7 (17)	35 (310)	27 (239)	31.5	1FT6086 - 8SH7 - ■ ■ ■ ■ ■	4	66.5 (0.0589)	30 (66.2)
	100	18.8 (25.2)	65 (575)	40 (354)	41	1FT6105 - 8SH7 - ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
6000	80	10.7 (14.3)	26 (230)	17 (151)	25.5	1FT6084 - 8SK7 - ■ ■ ■ ■ ■	4	48 (0.0425)	25 (55.1)
		13.8 (18.5)	35 (310)	22 (195)	29	1FT6086 - 8SK7 - ■ ■ ■ ■ ■	4	66.5 (0.0589)	30 (66.2)

Type:		IM B5	1
		IM B14 ³⁾ (only for 1FT613)	2
Connector outlet direction: (not for 1FT6136)		Transverse right	1
		Transverse left	2
		Axial NDE (not for 1FT613)	3
		Axial DE	4
Terminal box/ Cable entry: (only for 1FT61)		Transverse/from right	5
		Transverse/from left	6
		Axial/from NDE	7
		Axial/from DE	8
Encoder systems:		Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution	A E S T
		Absolute encoder EnDat 2048 pulses/revolution ¹⁾	
		Multipole resolver	
		2-pole resolver	
Shaft extension:			A B D E G H K L
Fitted key and keyway			
Fitted key and keyway			
Fitted key and keyway			
Fitted key and keyway			
Plain shaft			
Plain shaft			
Plain shaft			
Rotational 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			
Vibration severity:			0 1 3 4
Grade N			
Grade N			
Grade R			
Grade R			
Degree of protection: ⁴⁾			
IP64			
IP65			
IP64			
IP65			

To select the degree of protection and type, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Forced ventilation

Selection and Ordering Data

Motor type (continued)	Static current I_0 at M_0 $\Delta T=100\text{ K}$ A	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$ P_{calc} for M_0 $\Delta T=100\text{ K}$ kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield		
			Rated output current ⁵⁾ I_{rated} A	Order No.	Motor connection (and brake connection) via power connector		
					Power connector Size	Motor cable cross- section ⁷⁾ mm ²	Order No. Pre-assembled cable
1FT6084-8SF7...	18.2	8.2 (10.99)	18 ⁶⁾	For ordering data, see "Converter systems"	1.5	4 x 2.5	6FX ■ 002 - 5 ■ A31 -
1FT6086-8SF7...	25	11.0 (14.75)	28		1.5	4 x 4	6FX ■ 002 - 5 ■ A41 -
1FT6105-8SF7...	42	20.4 (27.35)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -
1FT6108-8SF7...	62	28.3 (37.94)	70		3	4 x 16	6FX ■ 002 - 5 ■ A23 -
1FT6132-6SF7...	69	34.6 (46.38)	140		3	4 x 25	6FX ■ 002 - 5DA33 -
1FT6134-6SF7...	83	44.0 (58.98)	140		3	4 x 25	6FX ■ 002 - 5DA33 -
1FT6084-8SH7...	26	12.3 (16.49)	28		1.5	4 x 4	6FX ■ 002 - 5 ■ A41 -
1FT6086-8SH7...	38	16.5 (22.12)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -
1FT6105-8SH7...	59	30.6 (41.02)	56 ⁶⁾		3	4 x 16	6FX ■ 002 - 5 ■ A23 -
1FT6084-8SK7...	35	16.3 (21.85)	56		1.5	4 x 10	6FX ■ 002 - 5 ■ A61 -
1FT6086-8SK7...	44	22.0 (29.49)	56		3	4 x 10	6FX 5 002 - 5 ■ A13 -

Type of power cable:

MOTION-CONNECT 800
MOTION-CONNECT 700 (only with brake cores)
MOTION-CONNECT 500
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm²)

8 0
7 0
5 0
5 1

C
D

Without brake cores
With brake cores

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

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Notes on forced ventilation:

	Shaft heights SH 80 and SH 100	Shaft height SH 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	220/260 V 1 AC, 50/60 Hz	400/460 V 3 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	70 dB (A)	74 dB (A)

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

²⁾ Not for use in atmospheres containing conductive dust. Forced ventilation cannot be used if flammable, chemically aggressive, electrically-conductive or explosive dust is present.

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

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

⁵⁾ For the default setting of pulse frequency.

⁶⁾ With the specified power module, the motor cannot be fully utilized at M_0 at $\Delta T=100\text{ K}$ winding temperature rise. If a power module with a higher rating is used, you must check whether the specified power cable can be connected to it.

⁷⁾ The current carrying capacity of the power cables complies with IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors

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)}	No. 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. Standard type		J	m
rpm		kW (HP)	Nm (lb _f -in)	Nm (lb _f -in)	A			10^{-4} kgm^2 (lb _f -in-s ²)	kg (lb)
1500	100	18.2 (24.4)	119 (1053)	116 (1027)	43	1FT6108 - 8WB7 ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
2000	100	17.2 (23.1)	85 (752)	82 (725)	60	1FT6105 - 8WC7 ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
		24.1 (32.3)	119 (1053)	115 (1018)	57	1FT6108 - 8WC7 ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
3000	63	3.2 (4.3)	10.2 (90.3)	10 (89)	6.9	1FT6062 - 6WF7 ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		5.1 (6.8)	16.2 (143.4)	16 (142)	10.3	1FT6064 - 6WF7 ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	11.0 (14.8)	35 (310)	35 (310)	27	1FT6084 - 8WF7 ■ ■ ■ ■ ■	4	48 (0.0425)	21 (46.3)
		14.5 (19.4)	47 (416)	46 (407)	37	1FT6086 - 8WF7 ■ ■ ■ ■ ■	4	66.5 (0.0589)	26 (57.3)
	100	24.5 (32.8)	85 (752)	78 (690)	82	1FT6105 - 8WF7 ■ ■ ■ ■ ■	4	168 (0.1487)	45.5 (100.3)
		34.2 (45.8)	119 (1053)	109 (965)	81	1FT6108 - 8WF7 ■ ■ ■ ■ ■	4	260 (0.2301)	61.5 (135.6)
4500	63	4.7 (6.3)	10.2 (90.3)	10 (89)	9.6	1FT6062 - 6WH7 ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		7.5 (10.1)	16.2 (143.4)	16 (142)	15.2	1FT6064 - 6WH7 ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	16.5 (22.1)	35 (310)	35 (310)	39	1FT6084 - 8WH7 ■ ■ ■ ■ ■	4	48 (0.0425)	21 (46.3)
		21.2 (28.4)	47 (416)	45 (398)	53	1FT6086 - 8WH7 ■ ■ ■ ■ ■	4	66.5 (0.0589)	26 (57.3)
6000	63	6.2 (8.3)	10.2 (90.3)	9.8 (87)	12.7	1FT6062 - 6WK7 ■ ■ ■ ■ ■	3	8.5 (0.0075)	9.5 (20.9)
		9.9 (13.3)	16.2 (143.4)	15.8 (139.8)	20	1FT6064 - 6WK7 ■ ■ ■ ■ ■	3	13 (0.0115)	12.5 (27.6)
	80	21.4 (28.7)	35 (310)	34 (301)	51	1FT6084 - 8WK7 ■ ■ ■ ■ ■	4	48 (0.0425)	21 (46.3)
		27.7 (37.1)	47 (416)	44 (389)	58	1FT6086 - 8WK7 ■ ■ ■ ■ ■	4	66.5 (0.0589)	26 (57.3)

Type:	IM B5 IM B14 ³⁾	1 2			
Connector outlet direction:	Transverse right (not for 1FT606) Transverse left (not for 1FT606) Axial NDE Axial DE (1FT6062 <u>only</u> with water connection on side or below) ²⁾	1 2 3 4			
Terminal box/ Cable entry: (<u>only</u> for 1FT61)	Transverse/from right Transverse/from left Axial/from NDE Axial/from DE	5 6 7 8			
Encoder systems:	Incremental encoder sin/cos 1 V _{pp} 2048 pulses/revolution Absolute encoder EnDat 2048 pulses/revolution Multipole resolver 2-pole resolver	A E S T			
Shaft extension:	Rotational 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			
Plain shaft	Tolerance R	with			
Vibration severity:	Degree of protection:				
Grade N	IP64	0			
Grade N	IP65	1			
Grade N	IP67	2			
Grade N	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, see "Selection guide".

Synchronous motors

Feed motors for SIMODRIVE 611

1FT6 standard type motors
Water cooling

Selection and Ordering Data

Motor type (continued)	Static current I_0 at M_0 $\Delta T=100\text{ K}$ A	Calculated power $P_{\text{calc}} =$ $M_0 \times n_{\text{rated}}/9550$ P_{calc} for M_0 $\Delta T=100\text{ K}$ kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield		
			Rated output current ⁴⁾ I_{rated} A	Order No.	Motor connection (and brake connection) via power connector		
					Power connector Size	Motor cable cross- section ⁶⁾ mm ²	Order No. Pre-assembled cable
1FT6108-8WB7...	43	18.7 (25.07)	56	For ordering data, see "Converter systems"	3	4x10	6FX 5 002- 5 A13 -
1FT6105-8WC7...	58	17.8 (23.86)	56 ⁵⁾		3	4x16	6FX 002- 5 A23 -
1FT6108-8WC7...	57	24.9 (33.38)	56 ⁵⁾		3	4x16	6FX 002- 5 A23 -
1FT6062-6WF7...	6.9	3.2 (4.29)	9		1	4x1.5	6FX 002- 5 A01 -
1FT6064-6WF7...	10.3	5.1 (6.84)	18		1	4x1.5	6FX 002- 5 A01 -
1FT6084-8WF7...	24.5	11.0 (14.75)	28		1.5	4x4	6FX 002- 5 A41 -
1FT6086-8WF7...	34	14.8 (19.84)	56		1.5	4x10	6FX 002- 5 A61 -
1FT6105-8WF7...	83	26.7 (35.79)	140		3	4x25	6FX 002- 5 DA33 -
1FT6108-8WF7...	86	37.4 (50.13)	140		3	4x35	6FX 002- 5 DA43 - ⁷⁾
1FT6062-6WH7...	9.7	4.8 (6.43)	18		1	4x1.5	6FX 002- 5 A01 -
1FT6064-6WH7...	15.4	7.6 (10.19)	18		1	4x2.5	6FX 002- 5 A11 -
1FT6084-8WH7...	37	16.5 (22.12)	56		1.5	4x10	6FX 002- 5 A61 -
1FT6086-8WH7...	52	22.1 (29.62)	56		3	4x16	6FX 002- 5 A23 -
1FT6062-6WK7...	12.9	6.4 (8.58)	18		1	4x1.5	6FX 002- 5 A01 -
1FT6064-6WK7...	20.5	10.2 (13.67)	28		1	4x2.5	6FX 002- 5 A11 -
1FT6084-8WK7...	47	22.0 (29.49)	56		3	4x10	6FX 5 002- 5 A13 -
1FT6086-8WK7...	59	29.5 (39.54)	70		3	4x16	6FX 002- 5 A23 -

Type of power cable:

MOTION-CONNECT 800
MOTION-CONNECT 700 (only with brake cores)
MOTION-CONNECT 500
MOTION-CONNECT 500 PLUS (only up to a cross-section of 6 mm²)

8 0
7 0
5 0
5 1

C
D

Without brake cores
With brake cores

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

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Notes on water cooling:

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

¹⁾ Delivered as standard with water connection on top.

²⁾ Water connection on right side: Add **-Z** + order code **Q20** to order number
Water 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, but with metric threaded insert in the four fixing holes.

⁴⁾ For the default setting of pulse frequency.

⁵⁾ With the specified power module, the motor cannot be fully utilized at M_0 at $\Delta T=100\text{ K}$ winding temperature rise. If a power 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 IEC 60204-1 for installation type C under continuous operating conditions at an ambient air temperature of 40 °C (104 °F), designed for I_0 (100 K), PVC/PUR-insulated cable.

⁷⁾ MOTION-CONNECT 800 or 500 type of power cable only.