

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors, Core Type
Natural cooling

Selection and Ordering Data

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake)	Weight (without Brake)
n_{rated}		P_{rated} at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	Order No. Core Type		J	
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
2000	100	4.8 (6.43)	23 (203.6)	11	27 (239)	1FT6 102 – 1AC71 – ■■■■ 1	4	99 (0.0876)	27.5 (60.6)
		8.0 (10.72)	38 (336.3)	17.6	50 (442.6)	1FT6 105 – 1AC71 – ■■■■ 1	4	168 (0.1487)	39.5 (87.1)
3000	48	1.4 (1.88)	4.3 (38.1)	2.9	5 (44.3)	1FT6 044 – 1AF71 – ■■■■ 1	2	5.1 (0.0045)	8.3 (18.3)
	63	1.5 (2.01)	4.7 (41.6)	3.4	6 (53.1)	1FT6 062 – 1AF71 – ■■■■ 1	3	8.5 (0.0752)	9.5 (20.9)
		2.2 (2.95)	7 (62)	4.9	9.5 (84.1)	1FT6 064 – 1AF71 – ■■■■ 1	3	13 (0.0115)	12.5 (27.6)
	80	3.2 (4.29)	10.3 (91.2)	8.7	13 (115.1)	1FT6 082 – 1AF71 – ■■■■ 1	4	30 (0.0266)	15 (33.1)
		4.6 (6.17)	14.7 (130.1)	11	20 (177)	1FT6 084 – 1AF71 – ■■■■ 1	4	48 (0.0425)	20.5 (45.2)
		5.8 (7.77)	18.5 (163.7)	13	27 (239)	1FT6 086 – 1AF71 – ■■■■ 1	4	66.5 (0.0589)	25.5 (56.2)
4500	63	1.7 (2.28)	3.6 (31.9)	3.9	6 (53.1)	1FT6 062 – 1AH71 – ■■■■ 1	3	8.5 (0.0752)	9.5 (20.9)
		2.3 (3.08)	4.8 (42.5)	5.5	9.5 (84.1)	1FT6 064 – 1AH71 – ■■■■ 1	3	13 (0.0115)	12.5 (27.6)
	80	4.9 (6.57)	10.5 (92.9)	12.5	20 (177)	1FT6 084 – 1AH71 – ■■■■ 1	4	48 (0.0425)	20.5 (45.2)
		5.7 (7.64)	12 (106.2)	12.6	27 (239)	1FT6 086 – 1AH71 – ■■■■ 1	4	66.5 (0.0589)	25.5 (56.2)
6000	36	0.88 (1.18)	1.4 (12.4)	2.1	2 (17.7)	1FT6 034 – 1AK71 – ■■■■ 1	2	1.1 (0.0010)	4.4 (9.7)
	80	4.1 (5.5)	6.5 (57.5)	9.2	20 (177)	1FT6 084 – 1AK71 – ■■■■ 1	4	48 (0.0425)	20.5 (45.2)

- Connector outlet direction:

Transverse right (not for 1FT604, 1FT606)
Transverse left (not for 1FT604, 1FT606)
Axial non-drive end
Axial drive-end

1
2
3
4
- Encoder systems:

Incremental encoder sin/cos 1 V_{pp}
Absolute encoder EnDat, 2,048 pulses/revolution ¹⁾

A
E
- Keyless shaft / Radial eccentricity tolerance N:

Without holding brake
With holding brake

G
H

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors, Core Type
Natural cooling

Selection and Ordering Data

Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-section Motor ²⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 102 – 1AC71 –	12.1	13.2 14	6SE7 021 – 3T P 0 6SE7 021 – 4E P 0	1.5	4 x 1.5	6FX 002 – 5 A21 – ... 0
1FT6 105 – 1AC71 –	21.4	25.5 27	6SE7 022 – 6T P 0 6SE7 022 – 7E P 0	1.5	4 x 4	6FX 002 – 5 A41 – ... 0
1FT6 044 – 1AF71 –	3	4 3	6SE7 014 – 0T P 0 6SE7 013 – 0E P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 062 – 1AF71 –	4.1	4 5	6SE7 014 – 0T P 0 6SE7 015 – 0E P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 064 – 1AF71 –	6.1	6.1 8	6SE7 016 – 0T P 0 6SE7 018 – 0T P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 082 – 1AF71 –	9.6	10.2 10	6SE7 021 – 0T P 0 6SE7 021 – 0E P 0	1.5	4 x 1.5	6FX 002 – 5 A21 – ... 0
1FT6 084 – 1AF71 –	13.2	17.5 14	6SE7 021 – 8T P 0 6SE7 021 – 4E P 0	1.5	4 x 1.5	6FX 002 – 5 A21 – ... 0
1FT6 086 – 1AF71 –	16.4	17.5 20.5	6SE7 021 – 8T P 0 6SE7 022 – 1E P 0	1.5	4 x 2.5	6FX 002 – 5 A31 – ... 0
1FT6 062 – 1AH71 –	5.7	6.1 8	6SE7 016 – 0T P 0 6SE7 018 – 0E P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 064 – 1AH71 –	9.0	10.2 10	6SE7 021 – 0T P 0 6SE7 021 – 0E P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 084 – 1AH71 –	19.8	25.5 20.5	6SE7 022 – 6T P 0 6SE7 022 – 1E P 0	1.5	4 x 4	6FX 002 – 5 A41 – ... 0
1FT6 086 – 1AH71 –	23.3	25.5 27	6SE7 022 – 6T P 0 6SE7 022 – 7E P 0	1.5	4 x 4	6FX 002 – 5 A41 – ... 0
1FT6 034 – 1AK71 –	2.6	4 3	6SE7 014 – 0T P 0 6SE7 013 – 0E P 0	1	4 x 1.5	6FX 002 – 5 A01 – ... 0
1FT6 084 – 1AK71 –	24.1	25.5 27	6SE7 022 – 6T P 0 6SE7 022 – 7E P 0	1.5	4 x 4	6FX 002 – 5 A41 – ... 0
• Compact PLUS				P		
• SIMOVERT MASTERDRIVES Motion Control				5		
• SIMOVERT MASTERDRIVES Motion Control Performance 2				7		
Power Cable Model						
• MOTION-CONNECT 800						8
• MOTION-CONNECT 500						5
• Without brake cable						C
• With brake cable						D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty 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 Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake)	Weight (w/o Brake)
n_{rated}		P_{rated} at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	Order No. Standard Model		J	
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
6000	28	0.19 (0.25)	0.3 (2.7)	1.1	0.4 (3.5)	1FT6 021 – 6AK7 1 – ■■■■	3	0.21 (0.0002)	1.2 (2.6)
		0.31 (0.42)	0.5 (4.4)	0.9	0.8 (7.1)	1FT6 024 – 6AK7 1 – ■■■■	3	0.34 (0.0003)	2.1 (4.6)
	36	0.47 (0.63)	0.75 (6.6)	1.2	1 (8.8)	1FT6 031 – 4AK7 1 – ■■■■	2	0.65 (0.0006)	3.1 (6.8)
		0.88 (1.18)	1.4 (12.4)	2.1	2 (17.7)	1FT6 034 – 4AK7 1 – ■■■■	2	1.1 (0.0010)	4.4 (9.7)
	48	1.1 (1.47)	1.7 (15)	2.4	2.6 (23)	1FT6 041 – 4AK7 1 – ■■■■	2	2.9 (0.0025)	6.6 (14.6)
		1.9 (2.55)	3 (26.6)	4.1	5 (44.3)	1FT6 044 – 4AK7 1 – ■■■■	2	5.1 (0.0045)	8.3 (18.3)
	63	1.3 (1.74)	2.1 (18.6)	3.1	4 (35.4)	1FT6 061 – 6AK7 ■ – ■■■■	3	6 (0.0053)	8 (17.6)
		1.3 (1.74)	2.1 (18.6)	3.2	6 (53.1)	1FT6 062 – 6AK7 ■ – ■■■■	3	8.5 (0.0075)	9.5 (20.9)
		1.3 (1.74)	2.1 (18.6)	3.5	9.5 (84.1)	1FT6 064 – 6AK7 ■ – ■■■■	3	13 (0.0115)	12.5 (27.6)
	80	2.9 (3.89)	4.6 (40.7)	7.7	8 (70.8)	1FT6 081 – 8AK7 ■ – ■■■■	4	21 (0.0186)	12.5 (27.6)
		3.5 (4.69)	5.5 (48.7)	9.1	13 (115.1)	1FT6 082 – 8AK7 ■ – ■■■■	4	30 (0.0266)	15 (33.1)
		4.1 (15.55)	6.5 (57.5)	9.2	20 (177)	1FT6 084 – 8AK7 ■ – ■■■■	4	48 (0.0425)	20.5 (45.2)
• Construction 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 non-drive end Axial drive end			1 2 3 4			
• Encoder systems:			Incremental encoder sin/cos 1 V _{pp} Absolute encoder EnDat 2,048 pulses/rev ¹⁾ ³⁾ Absolute encoder EnDat 512 pulses/rev ¹⁾ ⁴⁾ Resolver, multipole Resolver, 2-pole				A E H S T		
• Shaft end:			• Radial eccentricity tol.:		• Holding brake:		A B D E G H K L		
With key and keyway			N		No				
With key and keyway			N		Yes				
With key and keyway			R		No				
With key and keyway			R		Yes				
Keyless shaft			N		No				
Keyless shaft			N		Yes				
Keyless shaft			R		No				
Keyless shaft			R		Yes				
• Vibration severity grade:					• Degree of protection:				
N					IP64				
N ³⁾					IP65 ³⁾				
N					IP67				
N ³⁾					IP68 ³⁾				
R					IP64				
R ³⁾					IP65 ³⁾				
R					IP67				
R ³⁾					IP68 ³⁾				
• Special models:							–Z		
Please specify option code; refer to page 2/9.									

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Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-section Motor ³⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 061 – 6AH7 . –	4	6.1 5	6SE7 016 – 0 T P ■ 0 6SE7 015 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 062 – 6AH7 . –	5.7	6.1 8	6SE7 016 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 064 – 6AH7 . –	9	10.2 10	6SE7 021 – 0 T P ■ 0 6SE7 021 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 081 – 8AH7 . –	8.6	10.2 10	6SE7 021 – 0 T P ■ 0 6SE7 021 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 082 – 8AH7 . –	14.8	17.5 20.5	6SE7 021 – 8 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 084 – 8AH7 . –	19.8	25.5 20.5	6SE7 022 – 6 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – ... 0
1FT6 086 – 8AH7 . –	23.3	25.5 27	6SE7 022 – 6 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – ... 0
1FT6 102 – 8AH7 . –	24.1	25.5 27	6SE7 022 – 6 T P ■ 1 6SE7 022 – 7 E P ■ 1	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – ... 0
• Converter • Inverter		E T				
• Compact PLUS		P				
• SIMOVERT MASTERDRIVES Motion Control • SIMOVERT MASTERDRIVES Motion Control Performance 2		5 7				
Power Cable Model						
• MOTION-CONNECT 800 • MOTION-CONNECT 500						8 5
• Without brake cable • With brake cable						C D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) Same flange as IM B5, but with a metric helicoil in the four mounting holes.

3) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty 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 Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake) <i>J</i>	Weight (w/o Brake)
<i>n</i> _{rated}		<i>P</i> _{rated} at $\Delta T=100\text{ K}$	<i>M</i> _{rated} at $\Delta T=100\text{ K}$	<i>I</i> _{rated} at $\Delta T=100\text{ K}$	<i>M</i> ₀ at $\Delta T=100\text{ K}$	Order No. Standard Model			
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
4500	63	1.4 (1.88)	2.9 (25.7)	3.4	4 (35.4)	1FT6 061 – 6AH7 – ■■■■	3	6 (0.0053)	8 (17.6)
		1.7 (2.28)	3.6 (31.9)	3.9	6 (53.1)	1FT6 062 – 6AH7 – ■■■■	3	8.5 (0.0075)	9.5 (20.9)
		2.3 (3.08)	4.8 (42.5)	5.5	9.5 (84.1)	1FT6 064 – 6AH7 – ■■■■	3	13 (0.0115)	12.5 (27.6)
	80	2.7 (3.62)	5.8 (51.3)	7.3	8 (70.8)	1FT6 081 – 8AH7 – ■■■■	4	21 (0.0186)	12.5 (27.6)
		4 (5.36)	8.5 (75.2)	11	13 (115.1)	1FT6 082 – 8AH7 – ■■■■	4	30 (0.0266)	15 (33.1)
		4.9 (6.57)	10.5 (92.9)	12.5	20 (177)	1FT6 084 – 8AH7 – ■■■■	4	48 (0.0425)	20.5 (45.2)
		5.7 (7.64)	12 (106.2)	12.6	27 (239)	1FT6 086 – 8AH7 – ■■■■	4	66.5 (0.0589)	25.5 (56.2)
	100	5.7 (7.64)	12 (106.2)	12	27 (239)	1FT6 102 – 8AH7 – ■■■■	4	99 (0.0876)	27.5 (60.6)

• Construction type:	IM B5 IM B14 ²⁾	1 2			
• Connector outlet direction:	Transverse right (not for 1FT606) Transverse left (not for 1FT606) Axial non-drive end Axial drive end	1 2 3 4			
• Terminal box, Cable entry (only for 1FT61..):	Transverse right Transverse left Axial non-drive end Axial drive end	5 6 7 8			
• Encoder systems:	Incremental encoder sin/cos 1 V _{pp} Absolute encoder EnDat, 2,048 pulses/revolution ¹⁾ Resolver, multipole Resolver, 2-pole	A E S T			
• Shaft end: With key and keyway With key and keyway With key and keyway With key and keyway Keyless shaft Keyless shaft Keyless shaft Keyless shaft	• Radial eccentricity tol.: N N R R N N R R		• Holding brake: No Yes No Yes No Yes No Yes	A B D E G H K L	
• Vibration severity grade: N N N N R R R R			• Degree of protection: IP64 IP65 IP67 IP68 IP64 IP65 IP67 IP68	0 1 2 6 3 4 5 7	
• Special models: Please specify option code; refer to page 2/9.				–Z	

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Selection and Ordering Data

Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-section Motor ³⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 041 – 4AF71 –	1.9	2 3	6SE7 012 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 044 – 4AF71 –	3	4 3	6SE7 014 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 061 – 6AF7 . –	2.7	4 3	6SE7 014 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 062 – 6AF7 . –	4.1	4 5	6SE7 014 – 0 T P ■ 0 6SE7 015 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 064 – 6AF7 . –	6.1	6.1 8	6SE7 016 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 081 – 8AF7 . –	5.8	6.1 8	6SE7 016 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 082 – 8AF7 . –	9.6	10.2 10	6SE7 021 – 0 T P ■ 0 6SE7 021 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 084 – 8AF7 . –	13.2	17.5 14	6SE7 021 – 8 T P ■ 0 6SE7 021 – 4 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 086 – 8AF7 . –	16.4	17.5 20.5	6SE7 021 – 8 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 2.5	6FX ■ 002 – 5 ■ A31 – ... 0
1FT6 102 – 8AF7 . –	16.9	17.5 20.5	6SE7 021 – 8 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 2.5	6FX ■ 002 – 5 ■ A31 – ... 0
1FT6 105 – 8AF7 . –	32	34 34	6SE7 023 – 4 T P ■ 0 6SE7 023 – 4 E D ■ 0	1.5	4 x 6	6FX ■ 002 – 5 ■ A51 – ... 0
1FT6 108 – 8AF7 . –	41	47 47	6SE7 024 – 7 T D ■ 1 6SE7 024 – 7 E D ■ 1	3	4 x 10	6FX ■ 002 – 5 ■ A13 – ... 0
1FT6 132 – 6AF71 –	43	47 47	6SE7 024 – 7 T D ■ 1 6SE7 024 – 7 E D ■ 1	3	4 x 10	6FX ■ 002 – 5 ■ A13 – ... 0
• Converter • Inverter			E T			
• P for Compact PLUS, D for Compact devices			P D			
• SIMOVERT MASTERDRIVES Motion Control • SIMOVERT MASTERDRIVES Motion Control Performance 2			5 7			
Power Cable Model						
• MOTION-CONNECT 800 • MOTION-CONNECT 500						8 5
• Without brake cable • With brake cable						C D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) Same flange as IM B5, but with a metric helicoil in the four mounting holes.

3) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty 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 Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake) <i>J</i>	Weight (w/o Brake)
<i>n</i> _{rated}		<i>P</i> _{rated} at Δ <i>T</i> =100 K	<i>M</i> _{rated} at Δ <i>T</i> =100 K	<i>I</i> _{rated} at Δ <i>T</i> =100 K	<i>M</i> ₀ at Δ <i>T</i> =100 K	Order No. Standard Model			
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
3000	48	0.7 (0.99)	2.15 (19)	1.7	2.6 (23)	1FT6 041 – 4AF7 1 – ■■■■	2	2.9 (0.0025)	6.6 (14.6)
		1.4 (1.88)	4.3 (38.1)	2.9	5 (44.3)	1FT6 044 – 4AF7 1 – ■■■■	2	5.1 (0.0045)	8.3 (18.3)
	63	1.1 (1.47)	3.5 (31)	2.6	4 (35.4)	1FT6 061 – 6AF7 ■ – ■■■■	3	6 (0.0053)	8 (17.6)
		1.5 (2.01)	4.7 (41.6)	3.4	6 (53.1)	1FT6 062 – 6AF7 ■ – ■■■■	3	8.5 (0.0075)	9.5 (20.9)
		2.2 (2.95)	7 (62)	4.9	9.5 (84.1)	1FT6 064 – 6AF7 ■ – ■■■■	3	13 (0.0115)	12.5 (27.6)
	80	2.2 (2.95)	6.9 (61.1)	5.6	8 (70.8)	1FT6 081 – 8AF7 ■ – ■■■■	4	21 (0.0186)	12.5 (27.6)
		3.2 (4.29)	10.3 (91.2)	8.7	13 (115.1)	1FT6 082 – 8AF7 ■ – ■■■■	4	30 (0.0266)	15 (33.1)
		4.6 (6.17)	14.7 (130.1)	11	20 (177)	1FT6 084 – 8AF7 ■ – ■■■■	4	48 (0.0425)	20.5 (45.2)
		5.8 (7.77)	18.5 (163.7)	13	27 (239)	1FT6 086 – 8AF7 ■ – ■■■■	4	66.5 (0.0589)	25.5 (56.2)
	100	6.1 (8.18)	19.5 (172.6)	13.2	27 (239)	1FT6 102 – 8AF7 ■ – ■■■■	4	99 (0.0876)	27.5 (60.6)
		9.7 (13)	31 (274.4)	22.5	50 (442.6)	1FT6 105 – 8AF7 ■ – ■■■■	4	168 (0.1487)	39.5 (87.1)
		11.6 (15.55)	37 (327.5)	25	70 (619.6)	1FT6 108 – 8AF7 ■ – ■■■■	4	260 (0.2301)	55.5 (122.4)
	132	11.3 (15.15)	36 (318.6)	23	75 (663.8)	1FT6 132 – 6AF7 1 – ■■■■	3	430 (0.3806)	85 (187.4)
• Construction 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 non-drive end (not for 1FT613) Axial drive end					1		
							2		
							3		
							4		
• Terminal box, Cable entry (only for 1FT61..):		Transverse right Transverse left Axial non-drive end Axial drive end					5		
							6		
							7		
							8		
• Encoder systems:		Incremental encoder sin/cos 1 <i>V</i> _{pp} Absolute encoder EnDat, 2,048 pulses/revolution ¹⁾ Resolver, multipole Resolver, 2-pole					A		
							E		
							S		
							T		
• Shaft end:							A		
With key and keyway							B		
With key and keyway							D		
With key and keyway							E		
With key and keyway							G		
Keyless shaft							H		
Keyless shaft							K		
Keyless shaft							L		
Keyless shaft									
• Vibration severity grade:							0		
N							1		
N							2		
N							6		
N							3		
R							4		
R							5		
R							7		
R									
• Degree of protection:									
IP64									
IP65									
IP67									
IP68									
IP64									
IP65									
IP67									
IP68									
• Special models:									
Please specify option code; refer to page 2/9.							-Z		

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors
Natural cooling

Selection and Ordering Data

Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-section Motor ³⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 061 – 6AC7. –	1.9	2 3	6SE7 012 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 062 – 6AC7. –	2.7	4 3	6SE7 014 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 064 – 6AC7. –	4.2	6.1 5	6SE7 016 – 0 T P ■ 0 6SE7 015 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 081 – 8AC7. –	3.9	4 5	6SE7 014 – 0 T P ■ 0 6SE7 015 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 082 – 8AC7. –	6.6	10.2 8	6SE7 021 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 084 – 8AC7. –	8.8	10.2 10	6SE7 021 – 0 T P ■ 0 6SE7 021 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 086 – 8AC7. –	11.3	13.2 14	6SE7 021 – 3 T P ■ 0 6SE7 021 – 4 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 102 – 8AC7. –	12.1	13.2 14	6SE7 021 – 3 T P ■ 0 6SE7 021 – 4 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 105 – 8AC7. –	21.4	25.5 27	6SE7 022 – 6 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – ... 0
1FT6 108 – 8AC7. –	29	34 34	6SE7 023 – 4 T P ■ 0 6SE7 023 – 4 E P ■ 0	1.5	4 x 6	6FX ■ 002 – 5 ■ A51 – ... 0
1FT6 132 – 6AC71 –	29	34 34	6SE7 023 – 4 T P ■ 0 6SE7 023 – 4 E P ■ 0	1.5	4 x 6	6FX ■ 002 – 5 ■ A51 – ... 0
1FT6 134 – 6AC71 –	36	37.5 37.5	6SE7 023 – 8 T P ■ 0 6SE7 023 – 8 E D ■ 1	1.5	4 x 10	6FX ■ 002 – 5 ■ A61 – ... 0
1FT6 136 – 6AC71 –	42	47 47	6SE7 024 – 7 T D ■ 1 6SE7 024 – 7 E D ■ 1	3	4 x 10	6FX ■ 002 – 5 ■ A13 – ... 0
• Converter • Inverter			E T			
• P for Compact PLUS, D for Compact devices			P D			
• SIMOVERT MASTERDRIVES Motion Control • SIMOVERT MASTERDRIVES Motion Control Performance 2			5 7			
Power Cable Model						
• MOTION-CONNECT 800 • MOTION-CONNECT 500						8 5
• Without brake cable • With brake cable						C D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) Same flange as IM B5, but with a helicoil in the four mounting holes.

3) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty conditions at an ambient air temperature of +40 °C (+104 °F), designed for I_0 (100 K) PVC/PUR insulated cable.

1FT6 Motors Natural cooling

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque ¹⁾	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake) <i>J</i>	Weight (w/o Brake)
<i>n</i> _{rated}		<i>P</i> _{rated} at Δ <i>T</i> =100 K	<i>M</i> _{rated} at Δ <i>T</i> =100 K	<i>I</i> _{rated} at Δ <i>T</i> =100 K	<i>M</i> ₀ at Δ <i>T</i> =100 K	Order No. Standard Model			
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
2000	63	0.8 (1.07)	3.7 (32.7)	1.9	4 (35.4)	1FT6 061 – 6AC7  –    	3	6 (0.0053)	8 (17.6)
		1.1 (1.47)	5.2 (46)	2.6	6 (53.1)	1FT6 062 – 6AC7  –    	3	8.5 (0.0075)	9.5 (20.9)
		1.7 (2.28)	8 (70.8)	3.8	9.5 (84.1)	1FT6 064 – 6AC7  –    	3	13 (0.0115)	12.5 (27.6)
	80	1.6 (2.14)	7.5 (66.4)	4.1	8 (70.8)	1FT6 081 – 8AC7  –    	4	21 (0.0186)	12.5 (27.6)
		2.4 (3.22)	11.4 (100.9)	6.6	13 (115.1)	1FT6 082 – 8AC7  –    	4	30 (0.0266)	15 (33.1)
		3.5 (4.69)	16.9 (149.6)	8.3	20 (177)	1FT6 084 – 8AC7  –    	4	48 (0.0425)	20.5 (45.2)
		4.7 (6.3)	22.5 (199.1)	10.9	27 (239)	1FT6 086 – 8AC7  –    	4	66.5 (0.0589)	25.5 (56.2)
	100	4.8 (6.43)	23 (203.6)	11	27 (239)	1FT6 102 – 8AC7  –    	4	99 (0.0876)	27.5 (60.6)
		8.0 (10.72)	38 (336.3)	17.6	50 (203.6)	1FT6 105 – 8AC7  –    	4	168 (0.1487)	39.5 (87.1)
		11.5 (15.42)	55 (486.8)	24.5	70 (620)	1FT6 108 – 8AC7  –    	4	260 (0.2301)	55.5 (122.4)
	132	11.5 (15.42)	55 (486.8)	23	75 (663.8)	1FT6 132 – 6AC7 1 –     	3	430 (0.3806)	85 (187.4)
		13.6 (18.23)	65 (575.3)	27	95 (840.8)	1FT6 134 – 6AC7 1 –     	3	547 (0.4841)	100 (220.5)
		15.5 (20.78)	74 (655)	30	115 (1017.9)	1FT6 136 – 6AC7 1 –     	3	664 (0.5876)	117 (258)

- | | |
|--|---|
| • Construction type: | IM B5
IM B14 ²⁾ (<u>not</u> for 1FT613) |
| • Connector outlet direction: | Transverse right (<u>not</u> for 1FT606)
Transverse left (<u>not</u> for 1FT606)
Axial non-drive end (<u>not</u> for 1FT613)
Axial drive end |
| • Terminal box,
Cable entry (<u>only</u> for 1FT61..): | Transverse right
Transverse left
Axial non-drive end
Axial drive end |
| • Encoder systems: | Incremental encoder sin/cos 1 V _{pp}
Absolute encoder EnDat, 2,048 pulses/revolution ¹⁾
Resolver, multipole
Resolver, 2-pole |

- | Shaft end: | Radial eccentricity tol.: | Holding brake: |
|---------------------|---------------------------|----------------|
| With key and keyway | N | No |
| With key and keyway | N | Yes |
| With key and keyway | R | No |
| With key and keyway | R | Yes |
| Keyless shaft | N | No |
| Keyless shaft | N | Yes |
| Keyless shaft | R | No |
| Keyless shaft | R | Yes |

- | Vibration severity grade: | Degree of protection: |
|---------------------------|-----------------------|
| N | IP64 |
| N | IP65 |
| N | IP67 |
| N | IP68 |
| R | IP64 |
| R | IP65 |
| R | IP67 |
| R | IP68 |

- **Special models:**
Please specify option code; refer to page 2/9.

 $-Z$

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors

Natural cooling

Selection and Odering Data

Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-sec- tion Motor ³⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 102 – 8AB7 . –	8.7	10.2 10	6SE7 021 – 0 T P ■ 0 6SE7 021 – 0 E P ■ 0	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – . . . 0
1FT6 105 – 8AB7 . –	16.0	17.5 20.5	6SE7 021 – 8 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 2.5	6FX ■ 002 – 5 ■ A31 – . . . 0
1FT6 108 – 8AB7 . –	22.3	25.5 27	6SE7 022 – 6 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – . . . 0
1FT6 132 – 6AB71 –	21.6	25.5 27	6SE7 022 – 6 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – . . . 0
1FT6 134 – 6AB71 –	27	34 27	6SE7 023 – 4 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – . . . 0
1FT6 136 – 6AB71 –	34	34 34	6SE7 023 – 4 T P ■ 0 6SE7 023 – 4 E P ■ 0	1.5	4 x 6	6FX ■ 002 – 5 ■ A51 – . . . 0
• Converter • Inverter			E T			
• Compact PLUS			P			
• SIMOVERT MASTERDRIVES Motion Control • SIMOVERT MASTERDRIVES Motion Control Performance 2			5 7			
Power Cable Model						
• MOTION-CONNECT 800 • MOTION-CONNECT 500						8 5
• Without brake cable • With brake cable						C D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) Same flange as IM B5, but with a helicoil in the four mounting holes.

3) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty conditions at an ambient air temperature of +40 °C (+104 °F), designed for I_0 (100 K) PVC/PUR insulated cable.

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors

Natural cooling

Selection and Ordering Data

Rated Rotational Speed	Shaft Height	Rated Output	Rated Torque 1)	Rated Current	Standstill Torque	1FT6 Servo Motors Natural cooling	Pole Pair Number	Rotor Moment of Inertia (w/o Brake)	Weight (w/o Brake)
n_{rated}		P_{rated} at $\Delta T=100\text{ K}$	M_{rated} at $\Delta T=100\text{ K}$	I_{rated} at $\Delta T=100\text{ K}$	M_0 at $\Delta T=100\text{ K}$	Order No. Standard Model		J	
rpm	SH	kW (HP)	Nm (lb _f -in)	A	Nm (lb _f -in)			10 ⁻⁴ kgm ² (lb _f -in-s ²)	kg (lb)
1500	100	3.8 (5.09)	24.5 (216.8)	8.4	27 (239)	1FT6 102 – 8AB7 ■ – ■ ■ ■ ■	4	99 (0.0876)	27.5 (60.6)
		6.4 (8.59)	41 (362.9)	14.5	50 (442.6)	1FT6 105 – 8AB7 ■ – ■ ■ ■ ■	4	168 (0.1487)	39.5 (87.1)
		9.6 (12.87)	61 (539.9)	20.5	70 (619.6)	1FT6 108 – 8AB7 ■ – ■ ■ ■ ■	4	260 (0.2301)	55.5 (122.4)
	132	9.7 (13)	62 (548.8)	19	75 (663.8)	1FT6 132 – 6AB7 1 – ■ ■ ■ ■	3	430 (0.3806)	85 (187.4)
		11.8 (15.82)	75 (663.8)	24	95 (840.8)	1FT6 134 – 6AB7 1 – ■ ■ ■ ■	3	547 (0.4841)	100 (220.5)
		13.8 (18.5)	88 (778.9)	27	115 (1017.9)	1FT6 136 – 6AB7 1 – ■ ■ ■ ■	3	664 (0.5876)	117 (258)
• Construction type:			IM B5 IM B14 2) (not for 1FT613)			1 2			
• Connector outlet direction:			Transverse right Transverse left Axial non-drive end (not for 1FT613) Axial drive end			1 2 3 4			
• Terminal box, Cable entry:			Transverse right Transverse left Axial non-drive end Axial drive end			5 6 7 8			
• Encoder systems:			Incremental encoder sin/cos 1 V _{pp} Absolute encoder EnDat, 2,048 pulses/revolution 1) Resolver, multipole Resolver, 2-pole				A E S T		
• Shaft end:			• Radial eccentricity tol.:			• Holding brake:			
With key and keyway			N			No			
With key and keyway			N			Yes			
With key and keyway			R			No			
With key and keyway			R			Yes			
Keyless shaft			N			No			
Keyless shaft			N			Yes			
Keyless shaft			R			No			
Keyless shaft			R			Yes			
• Vibration severity grade:			• Degree of protection:						
N			IP64						0
N			IP65						1
N			IP67						2
N			IP68						6
R			IP64						3
R			IP65						4
R			IP67						5
R			IP68						7
• Special models:									
Please specify option code; refer to page 2/9.									–Z

Servo Motors for SIMOVERT MASTERDRIVES

Synchronous Servo Motors

1FT6 Motors
Natural cooling

Selection and Ordering Data

Motor Type (continued)	Standstill Current I_0 at $\Delta T=100\text{ K}$ A	SIMOVERT MASTERDRIVES MC Inverter/Converter Rated Current		Power Cable with Complete Shield Motor Connection with Brake Connection via Power Connector		
		I_{rated} A	Order No. Inverter Converter	Power Connector Size	Cable Cross-section Motor ⁵⁾ mm ²	Order No. Pre-Assembled Cable
1FT6 021 – 6AK71 –	1.25	2 1.5	6SE7 012 – 0 T P ■ 0 6SE7 011 – 5 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 024 – 6AK71 –	1.25	2 1.5	6SE7 012 – 0 T P ■ 0 6SE7 011 – 5 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 031 – 4AK71 –	1.4	2 1.5	6SE7 012 – 0 T P ■ 0 6SE7 011 – 5 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 034 – 4AK71 –	2.6	4 3	6SE7 014 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 041 – 4AK71 –	3	4 3	6SE7 014 – 0 T P ■ 0 6SE7 013 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 044 – 4AK71 –	5.9	6.1 8	6SE7 016 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 061 – 6AK7. –	5	6.1 5	6SE7 016 – 0 T P ■ 0 6SE7 015 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 062 – 6AK7. –	7.6	10.2 8	6SE7 021 – 0 T P ■ 0 6SE7 018 – 0 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 064 – 6AK7. –	12	13.2 14	6SE7 021 – 3 T P ■ 0 6SE7 021 – 4 E P ■ 0	1	4 x 1.5	6FX ■ 002 – 5 ■ A01 – ... 0
1FT6 081 – 8AK7. –	11.1	13.2 14	6SE7 021 – 3 T P ■ 1 6SE7 021 – 4 E P ■ 1	1.5	4 x 1.5	6FX ■ 002 – 5 ■ A21 – ... 0
1FT6 082 – 8AK7. –	17.3	17.5 20.5	6SE7 021 – 8 T P ■ 0 6SE7 022 – 1 E P ■ 0	1.5	4 x 2.5	6FX ■ 002 – 5 ■ A31 – ... 0
1FT6 084 – 8AK7. –	24.1	25.5 27	6SE7 022 – 6 T P ■ 0 6SE7 022 – 7 E P ■ 0	1.5	4 x 4	6FX ■ 002 – 5 ■ A41 – ... 0
• Converter • Inverter			E T			
• Compact PLUS			P			
• SIMOVERT MASTERDRIVES Motion Control • SIMOVERT MASTERDRIVES Motion Control Performance 2			5 7			
Power Cable Model						
• MOTION-CONNECT 800 • MOTION-CONNECT 500					8 5	
• Without brake cable • With brake cable						C D

For information about length codes and signal cables, see “MOTION-CONNECT Connection System”, Part 5.

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

2) Same flange as IM B5, but with a metric helicoil in the four mounting holes.

3) Not available for 1FT602

4) Only available for 1FT602

5) The current carrying capacity of the power cables corresponds to IEC 60204-1 for Routing Type C under continuous duty conditions at an ambient air temperature of +40 °C (+104 °F), designed for I_0 (100 K) PVC/PUR insulated cable.