

# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact core type motors

#### Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact synchronous motors Core type Natural cooling	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$	$M_0$ at $\Delta T=100\text{ K}$	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$	Order No.		$J$	$m$
rpm		kW (HP)	Nm (lb <sub>f</sub> -ft)	Nm (lb <sub>f</sub> -ft)	A			$10^{-4}\text{ kgm}^2$ ( $10^{-3}\text{ lb}_f\text{-in-s}^2$ )	kg (lb)
2 000	100	5.03 (6.75)	30 (22.1)	24 (17.7)	10	1FT7102 - 1AC7 - 1 - 1 - 1	5	91.4 (80.9)	26.1 (57.5)
		7.96 (10.7)	50 (36.9)	38 (28)	15	1FT7105 - 1AC7 - 1 - 1 - 1	5	178 (157)	44.2 (97.5)
3 000	48	1.35 (1.81)	5 (3.7)	4.3 (3.2)	2.6	1FT7044 - 1AF7 - 1 - 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 - 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 - 1	5	11.9 (10.5)	9.7 (21.4)
4 500	80	3.24 (4.34)	13 (9.6)	10.5 (7.7)	6.6	1FT7082 - 1AF7 - 1 - 1 - 1	5	26.5 (23.4)	14 (30.9)
		4.55 (6.10)	20 (14.8)	14.5 (10.7)	8.5	1FT7084 - 1AF7 - 1 - 1 - 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 - 1	5	63.6 (56.2)	27.5 (60.6)
4 500	80	4.82 (6.46) <sup>3)</sup>	20 (14.8)	11.5 (8.5) <sup>3)</sup>	10.1 <sup>3)</sup>	1FT7084 - 1AH7 - 1 - 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 - 1	5	63.6 (56.2)	27.5 (60.6)
6 000	36	0.88 (1.18)	2 (1.5)	1.4 (1.0)	2.1	1FT7034 - 1AK7 - 1 - 1 - 1	3	0.85 (0.75)	3.8 (8.38)
	63	2.13 (2.86) <sup>1)</sup>	6 (4.4)	3.7 (2.7) <sup>1)</sup>	5.9 <sup>1)</sup>	1FT7062 - 1AK7 - 1 - 1 - 1	5	7.36 (6.51)	7.1 (15.7)
		2.59 (3.47) <sup>2)</sup>	9 (6.6)	5.5 (4.1) <sup>2)</sup>	6.1 <sup>2)</sup>	1FT7064 - 1AK7 - 1 - 1 - 1	5	11.9 (10.5)	9.7 (21.4)

<b>Type of construction IM B5:</b>	Flange 0	0	
	Flange 1 (compatible with 1FT6)	1	
<b>Encoder systems:</b>	Incremental encoder sin/cos 1 V <sub>pp</sub> 2 048 S/R with C and D tracks	N	
	Absolute encoder EnDat 2 048 S/R	M	
<b>Shaft extension:</b>	Plain shaft	G	
	Plain shaft		
<b>Shaft and flange accuracy:</b>	Tolerance N	H	
	Tolerance N		
<b>Holding brake:</b>	Without		
	With		
<b>Vibration magnitude:</b>	Grade A	1	
<b>Degree of protection:</b>	IP65		

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

1FT7 Compact core type motors  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current  $I_0$ at $M_0$ $\Delta T=100$ K  A	Calculated power <sup>6)</sup>  $P_{calc}$ for $M_0$ $\Delta T=100$ K  kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector			
			Rated output current <sup>5)</sup>  $I_{rated}$  A	Order No.	Power connector  Size	Cable cross- section <sup>4)</sup>  mm <sup>2</sup>	Pre-assembled cable  Order No.	
1FT7102-1AC7...	12.5	6.28 (8.42)	18	For ordering data, see Converter system	1.5	4 x 1.5	6FX 002 - 5A21 - ....	
1FT7105-1AC7...	18	10.47 (14.0)	18		1.5	4 x 2.5	6FX 002 - 5A31 - ....	
1FT7044-1AF7...	2.8	1.57 (2.11)	3		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7062-1AF7...	3.9	1.88 (2.52)	5		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7064-1AF7...	5.7	2.83 (3.80)	9		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7082-1AF7...	7.6	4.08 (5.47)	9		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7084-1AF7...	11	6.28 (8.42)	18		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7086-1AF7...	15.5	8.80 (11.8)	18		1.5	4 x 2.5	6FX 002 - 5A31 - ....	
1FT7084-1AH7...	15.6	9.42 (12.6)	18		1.5	4 x 2.5	6FX 002 - 5A31 - ....	
1FT7086-1AH7...	22.4	13.19 (17.7)	28		1.5	4 x 4	6FX 002 - 5A41 - ....	
1FT7034-1AK7...	2.7	1.26 (1.69)	3		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7062-1AK7...	8.4	3.77 (5.06)	9		1	4 x 1.5	6FX 002 - 5A01 - ....	
1FT7064-1AK7...	9	5.65 (7.58)	9		1	4 x 1.5	6FX 002 - 5A01 - ....	
<b>Type of power cable:</b>								
MOTION-CONNECT 800							8	
MOTION-CONNECT 500							5	
Without brake cores								C
With brake cores								D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.								....

6

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

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

3) These values refer to  $n = 4\,000$  rpm.

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

5) With default setting of the pulse frequency.

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact standard type motors Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact synchronous motors Standard type Natural cooling	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$ rpm	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$ kW (HP)	$M_0$ at $\Delta T=100\text{ K}$ Nm (lb <sub>f</sub> -ft)	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$ Nm (lb <sub>f</sub> -ft)	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$ A				
1 500	100	4.08 (5.47)	30 (22.1)	26 (19.2)	8	1FT7102 - 5AB7 - 1	5	91.4 (80.9)	26.1 (57.5)
		6.60 (8.85)	50 (36.9)	42 (31.0)	13	1FT7105 - 5AB7 - 1	5	178 (157)	44.2 (97.5)
		9.58 (12.8)	70 (51.6)	61 (45.0)	16	1FT7108 - 5AB7 - 1	5	248 (219)	59.0 (130)

#### Type of construction IM B5:

Flange 0  
Flange 1 (compatible with 1FT6)

0  
1

#### Encoder systems:

Incremental encoder sin/cos 1 V<sub>pp</sub> 2 048 S/R with C and D tracks  
Absolute encoder EnDat 2 048 S/R

N  
M

#### Shaft extension:

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

#### Shaft and flange accuracy:

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

#### Holding brake:

Without  
With  
Without  
With  
Without  
With  
Without  
With

A  
B  
D  
E  
G  
H  
K  
L

#### Vibration magnitude:

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

#### Degree of protection:

IP64  
IP65  
IP67  
IP64  
IP65  
IP67

0  
1  
2  
3  
4  
5

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

**1FT7 Compact standard type motors**  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current  $I_0$ at $M_0$ $\Delta T=100$ K  A	Calculated power <sup>3)</sup>  $P_{\text{calc}}$ for $M_0$ $\Delta T=100$ K  kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector			
			Rated output current <sup>2)</sup>  $I_{\text{rated}}$  A	Order No.	Power connector  Size	Cable cross- section <sup>1)</sup>  mm <sup>2</sup>	Pre-assembled cable  Order No.	
1FT7102-5AB7...	9	4.71 (6.32)	9	For ordering data, see Converter system	1.5	4 x 1.5	<b>6FX 002 - 5 A21 - ....</b>	
1FT7105-5AB7...	15	7.85 (10.5)	18		1.5	4 x 1.5	<b>6FX 002 - 5 A21 - ....</b>	
1FT7108-5AB7...	18	10.99 (14.7)	18		1.5	4 x 2.5	<b>6FX 002 - 5 A31 - ....</b>	
<b>Type of power cable:</b>								
MOTION-CONNECT 800							8	
MOTION-CONNECT 500							5	
Without brake cores								C
With brake cores								D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.								....

<sup>1)</sup> 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)

<sup>2)</sup> With default setting of the pulse frequency.

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact standard type motors Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	<b>1FT7 Compact synchronous motors Standard type Natural cooling</b>	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$	$M_0$ at $\Delta T=100\text{ K}$	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$	Order No.		$J$	$m$
rpm		kW (HP)	Nm (lb <sub>f</sub> -ft)	Nm (lb <sub>f</sub> -ft)	A			$10^{-4}\text{ kgm}^2$ ( $10^{-3}\text{ lb}_f\text{-in-s}^2$ )	kg (lb)
<b>2 000</b>	80	2.39 (3.20)	13 (9.6)	11.4 (8.4)	4.9	<b>1FT7082 - 5AC7 - 1</b>	5	26.5 (23.5)	14 (30.9)
		3.54 (4.75)	20 (14.8)	16.9 (12.5)	8.4	<b>1FT7084 - 5AC7 - 1</b>	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	22.5 (16.6)	9.2	<b>1FT7086 - 5AC7 - 1</b>	5	63.6 (56.3)	27.5 (60.6)
	100	5.03 (6.75)	30 (22.1)	24.0 (17.7)	10	<b>1FT7102 - 5AC7 - 1</b>	5	91.4 (80.9)	26.1 (57.5)
		7.96 (10.7)	50 (36.9)	38.0 (28.0)	15	<b>1FT7105 - 5AC7 - 1</b>	5	178 (157)	44.2 (97.5)
		10.5 (14.1)	70 (51.6)	50.0 (36.9)	18	<b>1FT7108 - 5AC7 - 1</b>	5	248 (219)	59 (130)

#### Type of construction IM B5:

Flange 0  
Flange 1 (compatible with 1FT6)

0

1

#### Encoder systems:

Incremental encoder sin/cos 1 V<sub>pp</sub> 2 048 S/R with C and D tracks  
Absolute encoder EnDat 2 048 S/R

N

M

#### Shaft extension:

Fitted key and keyway  
Fitted key and keyway  
Fitted key and keyway  
Fitted key and keyway

#### Shaft and flange accuracy:

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

#### Holding brake:

Without  
With  
Without  
With  
Without  
With  
Without  
With

A

B

D

E

G

H

K

L

#### Vibration magnitude:

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

#### Degree of protection:

IP64  
IP65  
IP67  
IP64  
IP65  
IP67

0

1

2

3

4

5

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

**1FT7 Compact standard type motors**  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current  $I_0$ at $M_0$ $\Delta T=100$ K  A	Calculated power <sup>3)</sup>  $P_{\text{calc}}$ for $M_0$ $\Delta T=100$ K  kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector		
			Rated output current <sup>2)</sup>  $I_{\text{rated}}$  A	Order No.	Power connector  Size	Cable cross- section <sup>1)</sup>  mm <sup>2</sup>	Pre-assembled cable  Order No.
1FT7082-5AC7...	5	2.72 (3.65)	5	For ordering data, see Converter system	1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7084-5AC7...	9	4.19 (5.62)	9		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7086-5AC7...	10.6	5.86 (7.86)	18		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7102-5AC7...	12.5	6.28 (8.42)	18		1.5	4 x 1.5	<b>6FX 002 - 5 A21 - ....</b>
1FT7105-5AC7...	18	10.47 (14.0)	18		1.5	4 x 2.5	<b>6FX 002 - 5 A31 - ....</b>
1FT7108-5AC7...	25	14.66 (19.7)	28		1.5	4 x 4	<b>6FX 002 - 5 A41 - ....</b>
<b>Type of power cable:</b> MOTION-CONNECT 800 MOTION-CONNECT 500							<b>8</b> <b>5</b>
Without brake cores							<b>C</b>
With brake cores							<b>D</b>
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							<b>....</b>

<sup>1)</sup> 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).

<sup>2)</sup> With default setting of the pulse frequency.

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact standard type motors Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	1FT7 Compact synchronous motors Standard type Natural cooling	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$	$M_0$ at $\Delta T=100\text{ K}$	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$	Order No.		$J$	$m$
rpm		kW (HP)	Nm (lb <sub>f</sub> -ft)	Nm (lb <sub>f</sub> -ft)	A			$10^{-4}\text{ kgm}^2$ ( $10^{-3}\text{ lb}_f\text{-in-s}^2$ )	kg (lb)
3 000	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)	14.0 (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)
		5.62 (7.54)	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)
8.17 (11.0)		70 (51.6)	20 (14.8)	12	1FT7108 - 5AF7 - 1	5	248 (220)	59.0 (130)	

#### Type of construction IM B5:

Flange 0  
Flange 1 (compatible with 1FT6)

0  
1

#### Encoder systems:

Incremental encoder sin/cos 1 V<sub>pp</sub> 2 048 S/R with C and D tracks  
Absolute encoder EnDat 2 048 S/R

N  
M

#### Shaft extension:

Fitted key and keyway  
Fitted key and keyway  
Fitted key and keyway  
Fitted key and keyway

#### Shaft and flange accuracy:

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

#### Holding brake:

Without  
With  
Without  
With  
Without  
With  
Without  
With

A  
B  
D  
E  
G  
H  
K  
L

#### Vibration magnitude:

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

#### Degree of protection:

IP64  
IP65  
IP67  
IP64  
IP65  
IP67

0  
1  
2  
3  
4  
5

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

**1FT7 Compact standard type motors**  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current  $I_0$ at $M_0$ $\Delta T=100$ K  A	Calculated power <sup>3)</sup>  $P_{calc}$ for $M_0$ $\Delta T=100$ K  kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector			
			Rated output current <sup>2)</sup>  $I_{rated}$  A	Order No.	Power connector  Size	Cable cross-section <sup>1)</sup>  mm <sup>2</sup>	Pre-assembled cable  Order No.	
1FT7042-5AF7...	2.1	0.94 (1.26)	3	For ordering data, see Converter system	1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7044-5AF7...	2.8	1.57 (2.11)	3		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7046-5AF7...	4	2.20 (2.95)	5		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7062-5AF7...	3.9	1.88 (2.52)	5		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7064-5AF7...	5.7	2.83 (3.80)	9		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7066-5AF7...	8.4	3.77 (5.06)	9		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7068-5AF7...	8.3	4.71 (6.32)	9		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7082-5AF7...	7.6	4.08 (5.47)	9		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7084-5AF7...	11	6.28 (8.42)	18		1	4 x 1.5	<b>6FX 002 - 5 A01</b> - ....	
1FT7086-5AF7...	15.5	8.80 (11.8)	18		1.5	4 x 2.5	<b>6FX 002 - 5 A31</b> - ....	
1FT7102-5AF7...	18	9.42 (12.6)	18		1.5	4 x 2.5	<b>6FX 002 - 5 A31</b> - ....	
1FT7105-5AF7...	26	15.71 (21.0)	28		1.5	4 x 4	<b>6FX 002 - 5 A41</b> - ....	
1FT7108-5AF7...	36	21.99 (29.5)	42		1.5	4 x 6	<b>6FX 002 - 5 A51</b> - ....	
<b>Type of power cable:</b>							8 5	C D
MOTION-CONNECT 800								
MOTION-CONNECT 500							....	
Without brake cores								
With brake cores								
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.								

6

<sup>1)</sup> 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).

<sup>2)</sup> With default setting of the pulse frequency.

<sup>3)</sup>  $P_{calc} [kW] = \frac{M_0 [Nm] \times n_{rated}}{9550}$   $P_{calc} [HP] = \frac{M_0 [lb_f-in] \times n_{rated}}{63000}$



# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact standard type motors Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	<b>1FT7 Compact synchronous motors Standard type Natural cooling</b>	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$	$M_0$ at $\Delta T=100\text{ K}$	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$	Order No.		$J$	$m$
rpm		kW (HP)	Nm (lb <sub>f</sub> -ft)	Nm (lb <sub>f</sub> -ft)	A			$10^{-4}\text{ kgm}^2$ ( $10^{-3}\text{ lb}_f\text{-in-s}^2$ )	kg (lb)
<b>4 500</b>	48	1.32 (1.77) <sup>1)</sup>	7.0 (5.2)	3.6 (2.7) <sup>1)</sup>	4.7 <sup>1)</sup>	<b>1FT7046 - 5AH7 - 1</b> ■ ■ ■ ■	3	7.52 (6.66)	9.3 (20.5)
	63	2.55 (3.42) <sup>2)</sup>	12 (8.9)	6.1 (4.5) <sup>2)</sup>	7.5 <sup>2)</sup>	<b>1FT7066 - 5AH7 - 1</b> ■ ■ ■ ■	5	16.4 (14.5)	12.3 (27.1)
	80	3.77 (5.06)	13 (9.6)	8.0 (5.9)	8.4	<b>1FT7082 - 5AH7 - 1</b> ■ ■ ■ ■	5	26.5 (23.5)	14.0 (30.9)
		4.82 (6.46) <sup>2)</sup>	20 (14.8)	11.5 (8.5) <sup>2)</sup>	10.1 <sup>2)</sup>	<b>1FT7084 - 5AH7 - 1</b> ■ ■ ■ ■	5	45.1 (39.9)	20.8 (45.9)
		4.71 (6.32)	28 (20.7)	10 (7.4)	10	<b>1FT7086 - 5AH7 - 1</b> ■ ■ ■ ■	5	63.6 (56.3)	27.5 (60.6)
<b>Type of construction IM B5:</b>			Flange 0 Flange 1 (compatible with 1FT6)			<b>0</b> <b>1</b>			
<b>Encoder systems:</b>			Incremental encoder sin/cos 1 V <sub>pp</sub> 2 048 S/R with C and D tracks Absolute encoder EnDat 2 048 S/R			<b>N</b> <b>M</b>			
<b>Shaft extension:</b>		<b>Shaft and flange accuracy:</b>		<b>Holding brake:</b>					
Fitted key and keyway		Tolerance N		Without					<b>A</b>
Fitted key and keyway		Tolerance N		With					<b>B</b>
Fitted key and keyway		Tolerance R		Without					<b>D</b>
Fitted key and keyway		Tolerance R		With					<b>E</b>
Plain shaft		Tolerance N		Without					<b>G</b>
Plain shaft		Tolerance N		With					<b>H</b>
Plain shaft		Tolerance R		Without					<b>K</b>
Plain shaft		Tolerance R		With					<b>L</b>
<b>Vibration magnitude:</b>		<b>Degree of protection:</b>							
Grade A		IP64							<b>0</b>
Grade A		IP65							<b>1</b>
Grade A		IP67							<b>2</b>
Grade R		IP64							<b>3</b>
Grade R		IP65							<b>4</b>
Grade R		IP67							<b>5</b>

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

**1FT7 Compact standard type motors**  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current $I_0$ at $M_0$ $\Delta T=100$ K A	Calculated power <sup>5)</sup> $P_{\text{calc}}$ for $M_0$ $\Delta T=100$ K kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector		
			Rated output current <sup>4)</sup> $I_{\text{rated}}$ A	Order No.	Power connector Size	Cable cross-section <sup>3)</sup> mm <sup>2</sup>	Pre-assembled cable Order No.
1FT7046-5AH7...	8.1	3.30 (4.43)	9	For ordering data, see Converter system	1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7066-5AH7...	13.6	5.65 (7.58)	18		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7082-5AH7...	12.3	6.13 (8.22)	18		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>
1FT7084-5AH7...	15.6	9.42 (12.6)	18		1.5	4 x 2.5	<b>6FX 002 - 5 A31 - ....</b>
1FT7086-5AH7...	22.4	13.19 (17.7)	28		1.5	4 x 4	<b>6FX 002 - 5 A41 - ....</b>
<b>Type of power cable:</b> MOTION-CONNECT 800 MOTION-CONNECT 500					8		
Without brake cores							<b>C</b>
With brake cores							<b>D</b>
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.							....

1) These values refer to  $n = 3\,500$  rpm.

2) These values refer to  $n = 4\,000$  rpm.

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

4) With default setting of the pulse frequency.

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

# Synchronous motors

## Feed motors for SIMODRIVE 611

### 1FT7 Compact standard type motors Natural cooling

#### Selection and ordering data

Rated speed	Shaft height	Rated power	Static torque	Rated torque	Rated current	<b>1FT7 Compact synchronous motors Standard type Natural cooling</b>	Number of pole pairs	Rotor moment of inertia (without brake)	Weight (without brake)
$n_{\text{rated}}$	SH	$P_{\text{rated}}$ at $\Delta T=100\text{ K}$	$M_0$ at $\Delta T=100\text{ K}$	$M_{\text{rated}}$ at $\Delta T=100\text{ K}$	$I_{\text{rated}}$ at $\Delta T=100\text{ K}$	Order No.		$J$	$m$
rpm		kW (HP)	Nm (lb <sub>f</sub> -ft)	Nm (lb <sub>f</sub> -ft)	A			$10^{-4}\text{ kgm}^2$ ( $10^{-3}\text{ lb}_f\text{-in-s}^2$ )	kg (lb)
<b>6 000</b>	36	0.88 (1.18)	2 (1.5)	1.4 (1.0)	2.1	<b>1FT7034 - 5AK7 - 1</b> ■ ■ ■ ■	3	0.85 (0.75)	3.8 (8.38)
		1.07 (1.43)	3 (2.2)	1.7 (1.3)	2.4	<b>1FT7036 - 5AK7 - 1</b> ■ ■ ■ ■	3	1.33 (1.18)	5.0 (11.0)
	48	1.26 (1.69)	3 (2.2)	2.0 (1.5)	3	<b>1FT7042 - 5AK7 - 1</b> ■ ■ ■ ■	3	2.81 (2.49)	4.6 (10.1)
		1.41 (1.89) <sup>1)</sup>	5 (3.7)	3.0 (2.2) <sup>1)</sup>	3.6 <sup>1)</sup>	<b>1FT7044 - 5AK7 - 1</b> ■ ■ ■ ■	3	5.43 (4.81)	7.2 (15.9)
	63	2.13 (2.86) <sup>2)</sup>	6 (4.4)	3.7 (2.7) <sup>2)</sup>	5.9 <sup>2)</sup>	<b>1FT7062 - 5AK7 - 1</b> ■ ■ ■ ■	5	7.36 (6.51)	7.1 (15.7)
		2.59 (3.47) <sup>1)</sup>	9 (6.6)	5.5 (4.1) <sup>1)</sup>	6.1 <sup>1)</sup>	<b>1FT7064 - 5AK7 - 1</b> ■ ■ ■ ■	5	11.9 (10.5)	9.7 (21.4)
<b>Type of construction IM B5:</b>			Flange 0 Flange 1 (compatible with 1FT6)		0 1				
<b>Encoder systems:</b>			Incremental encoder sin/cos 1 V <sub>pp</sub> 2 048 S/R with C and D tracks Absolute encoder EnDat 2 048 S/R		N M				
<b>Shaft extension:</b>			<b>Shaft and flange accuracy:</b>		<b>Holding brake:</b>				
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		
<b>Vibration magnitude:</b>			<b>Degree of protection:</b>						
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 Selection guides.

# Synchronous motors

## Feed motors for SIMODRIVE 611

**1FT7 Compact standard type motors**  
Natural cooling

### Selection and ordering data

Motor type (continued)	Static current  $I_0$ at $M_0$ $\Delta T = 100$ K  A	Calculated power <sup>5)</sup>  $P_{\text{calc}}$ for $M_0$ $\Delta T = 100$ K  kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection and brake connection via power connector			
			Rated output current <sup>4)</sup>  $I_{\text{rated}}$  A	Order No.	Power connector  Size	Cable cross- section <sup>3)</sup>  mm <sup>2</sup>	Pre-assembled cable  Order No.	
1FT7034-5AK7...	2.7	1.26 (1.69)	3	For ordering data, see Converter system	1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
1FT7036-5AK7...	4.0	1.88 (2.52)	5		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
1FT7042-5AK7...	3.9	1.89 (2.53)	5		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
1FT7044-5AK7...	5.7	3.15 (4.22)	9		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
1FT7062-5AK7...	8.4	3.78 (5.07)	9		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
1FT7064-5AK7...	9	5.67 (7.60)	9		1	4 x 1.5	<b>6FX 002 - 5 A01 - ....</b>	
<b>Type of power cable:</b>								
MOTION-CONNECT 800							8	
MOTION-CONNECT 500							5	
Without brake cores								C
With brake cores								D
For length code as well as power and signal cables, see Connection system MOTION-CONNECT.								....

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

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

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

4) With default setting of the pulse frequency.

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