

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type

Water cooling

Selection and ordering data

Maximum torque	Static torque ¹⁾³⁾	Rated torque ²⁾³⁾	Max. speed at maximum torque ²⁾	Max. speed at rated torque ²⁾	1FW6 built-in torque motors Standard type	Moment of inertia of rotor	Weight, approx. stator + rotor
M_{max}	M_0	M_{rated}	n_{max} at M_{max}	n_{max} at M_{rated}	Order No.	J	m
Nm (lbf-ft)	Nm (lbf-ft)	Nm (lbf-ft)	rpm	rpm		10^{-2}kgm^2 (lbf-in-s ²)	kg (lb)
1FW6090 – Water cooling							
179 (132)	119 (87.8)	113 (83.3)	46	140	1FW6090-0B05-0F ■ 2	1.52 (0.13)	9.2 (20.3)
		109 (80.4)	140	250	1FW6090-0B05-0K ■ 2		
251 (185)	166 (122)	154 (114)	120	220	1FW6090-0B07-0K ■ 2	2.2 (0.19)	12.2 (27)
		142 (105)	270	430	1FW6090-0B07-1J ■ 2		
358 (264)	238 (176)	231 (170)	8.7	82	1FW6090-0B10-0K ■ 2	3.09 (0.27)	17.2 (37.9)
		216 (159)	170	270	1FW6090-0B10-1J ■ 2		
537 (396)	357 (263)	338 (249)	78	150	1FW6090-0B15-1J ■ 2	4.65 (0.41)	27.2 (60)
		319 (235)	200	310	1FW6090-0B15-2J ■ 2		
1FW6130 – Water cooling							
439 (324)	258 (190)	241 (178)	47	130	1FW6130-0B05-0K ■ 2	6.37 (0.56)	13.2 (29.1)
		217 (160)	180	310	1FW6130-0B05-1J ■ 2		
614 (453)	361 (266)	344 (254)	21	96	1FW6130-0B07-0K ■ 2	8.92 (0.79)	18.2 (40.1)
		324 (239)	110	200	1FW6130-0B07-1J ■ 2		
878 (648)	516 (381)	484 (357)	50	120	1FW6130-0B10-1J ■ 2	12.7 (1.12)	25.2 (55.6)
		450 (332)	150	250	1FW6130-0B10-2J ■ 2		
1320 (974)	775 (572)	744 (549)	14	78	1FW6130-0B15-1J ■ 2	19.1 (1.69)	38.2 (84.2)
		714 (527)	77	150	1FW6130-0B15-2J ■ 2		
1FW6150 – Water cooling							
710 (524)	360 (266)	338 (249)	110	230	1FW6150-0B05-1J ■ 2	10.1 (0.8939)	21.7 (47.8)
		298 (220)	330	650	1FW6150-0B05-4F ■ 2		
994 (733)	504 (372)	470 (347)	130	260	1FW6150-0B07-2J ■ 2	14.2 (1.2568)	33.5 (73.9)
		444 (327)	230	450	1FW6150-0B07-4F ■ 2		
1420 (1047)	720 (531)	668 (493)	76	170	1FW6150-0B10-2J ■ 2	20.9 (1.8498)	46.5 (103)
		663 (489)	150	300	1FW6150-0B10-4F ■ 2		
2130 (1571)	1080 (797)	1050 (774)	32	100	1FW6150-0B15-2J ■ 2	31.3 (2.7703)	70.8 (156)
		1030 (760)	89	190	1FW6150-0B15-4F ■ 2		

Cable outlet only for 1FW6090/1FW6130/1FW6150:

Axial
Radially outwards
Tangential

P
Q
N

Type of connection:

Permanently connected power and signal cables with exposed core ends⁵⁾
Length: 2 m (6.56 ft)
Permanently connected power and signal cables pre-assembled with connectors
Length: 0.5 m (1.64 ft)

C
D

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type
Water cooling

Motor type (repeated)	Static current 1)3)	Rated current 2)3)	Maxi- mum current ²⁾	Calculated power	SIMODRIVE 611 power module		Power cable with complete shield Motor connection via power connector ⁵⁾		
	I_0 A	I_{rated} A	I_{max} A	$P_{el, max}$ kW (HP)	Required rated current	Order No.	Power con- nector	Cable cross- section ⁶⁾	Pre-assembled basic cable to the converter system
					I_{rated} / I_{max} A		Size	mm ²	Order No.
1FW6090-0.B05-0F..	5.9	5.6	9.5	6.55 (8.78)	5/10 ⁴⁾	For ordering data, see Converter system	1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B05-0K..	8.2	7.4	13	8.12 (10.88)	9/18		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B07-0K..	10	9.5	16	10.3 (13.8)	9/18 ⁴⁾		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B07-1J..	16	13	26	14.1 (18.9)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B10-0K..	8.2	7.9	13	9.43 (12.6)	9/18		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B10-1J..	16	14	26	15.3 (20.5)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B15-1J..	16	15	26	17.1 (22.9)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6090-0.B15-2J..	26	23	43	24.1 (32.3)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6130-0.B05-0K..	9.7	9	18	12.2 (16.4)	9/18 ⁴⁾		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B05-1J..	17	14	32	18.3 (24.5)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B07-0K..	10	10	20	14.2 (19)	9/18 ⁴⁾		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B07-1J..	17	15	32	19.7 (26.4)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B10-1J..	17	16	32	21.4 (28.7)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B10-2J..	28	24	53	30.6 (41)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6130-0.B15-1J..	19	18	36	25.4 (34.1)	18/36 ⁴⁾		1	4 × 2.5	6FX8002-5CA11-....
1FW6130-0.B15-2J..	28	26	54	34.1 (45.7)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6150-0.B05-1J..	18	17	44	22.8 (30.6)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6150-0.B05-4F..	44	36	100	39.4 (52.8)	56/112		1.5	4 × 10	6FX8002-5CA61-....
1FW6150-0.B07-2J..	27	25	66	32.0 (42.9)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6150-0.B07-4F..	44	38	100	42.7 (57.3)	56/112		1.5	4 × 10	6FX8002-5CA61-....
1FW6150-0.B10-2J..	27	26	66	36.2 (48.5)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6150-0.B10-4F..	44	40	100	47.3 (63.4)	56/112		1.5	4 × 10	6FX8002-5CA61-....
1FW6150-0.B15-2J..	27	26	66	42.8 (57.4)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6150-0.B15-4F..	44	41	100	54.5 (73.1)	56/112		1.5	4 × 10	6FX8002-5CA61-....

Length code

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Further information about cables can be
found under Connection system
MOTION-CONNECT.

1) Torque and current at low speeds.

2) The values refer to a supply voltage of 400 V 3 AC ± 10 % (DC link voltage of the drive system 600 V DC).

3) In case of water cooling with inlet temperature of 35 °C (95 °F) and maximum rotor flange temperature of 60 °C (140 °F).

4) Selection optimized to size of power module. The next higher power module offers 100 % torque utilization.

5) For type of connection with exposed core ends, power and signal connectors are not included in the scope of supply of the motor, they must be ordered separately (see Accessories).

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

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type

Water cooling

Selection and ordering data

Maximum torque	Static torque ¹⁾³⁾	Rated torque ²⁾³⁾	Max. speed at maximum torque ²⁾	Max. speed at rated torque ²⁾	1FW6 built-in torque motors Standard type	Moment of inertia of rotor	Weight, approx. stator + rotor
M_{max} Nm (lbf-ft)	M_0 Nm (lbf-ft)	M_{rated} Nm (lbf-ft)	n_{max} at M_{max} rpm	n_{max} at M_{rated} rpm	Order No.	J 10^{-2}kgm^2 (lbf-in-s ²)	m kg (lb)
1FW6160 – Water cooling							
716 (528)	467 (344)	431 (318)	84	140	1FW6160-0B05-1J 2	19.0 (1.68)	36.3 (80.0)
		404 (298)	150	250	1FW6160-0B05-2J 2		
		314 (232)	320	590	1FW6160-0B05-5G 2		
1000 (738)	653 (482)	620 (457)	53	96	1FW6160-0B07-1J 2	25.8 (2.28)	48.3 (107)
		594 (438)	100	170	1FW6160-0B07-2J 2		
		514 (379)	230	390	1FW6160-0B07-5G 2		
		432 (319)	330	610	1FW6160-0B07-8F B2		
1430 (1055)	933 (688)	903 (666)	29	60	1FW6160-0B10-1J 2	36.0 (3.19)	66.3 (146)
		878 (648)	65	110	1FW6160-0B10-2J 2		
		804 (593)	160	260	1FW6160-0B10-5G 2		
		732 (540)	230	390	1FW6160-0B10-8F B2		
		622 (459)	330	600	1FW6160-0B10-2PB2		
2150 (1586)	1400 (1033)	1350 (996)	34	66	1FW6160-0B15-2J 2	53.1 (4.70)	95.3 (210)
		1280 (944)	97	160	1FW6160-0B15-5G 2		
		1220 (900)	150	240	1FW6160-0B15-8F B2		
		1120 (826)	220	360	1FW6160-0B15-2PB2		
2860 (2110)	1870 (1379)	1750 (1291)	68	110	1FW6160-0B20-5G 2	70.1 (6.20)	124.3 (274)
		1690 (1247)	110	170	1FW6160-0B20-8F B2		
		1600 (1180)	160	260	1FW6160-0B20-2PB2		

Cable outlet only for 1FW6160 to 1FW6290:

Axial

Radially outwards

Tangential (Only for types of connection C and D)

W
V
T

Type of connection:

Permanently connected power and signal cables with exposed core ends⁵⁾

Length: 2 m (6.56 ft)

Permanently connected power and signal cables pre-assembled with connectors

Length: 0.5 m (1.64 ft)

C

D

Type of connection only for specific motors (Not configurable):

Permanently connected power and signal cables with exposed core ends⁵⁾

Length: 1 m (3.28 ft)

B

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type
Water cooling

Motor type (repeated)	Static current 1)3)	Rated current 2)3)	Maxi- mum current ²⁾	Calculated power $P_{el, max}$ kW (HP)	SIMODRIVE 611 power module		Power cable with complete shield Motor connection via power connector ⁵⁾		
					Required rated current I_{rated} / I_{max} A	Order No.	Power connec- tor Size	Cable cross- section ⁶⁾ mm ²	Pre-assembled basic cable to the converter system Order No.
1FW6160-0.B05-1J..	17	16	31	15.1 (20.2)	18/36	For ordering data, see Converter system	1	4 × 2.5	6FX8002-5CA11-....
1FW6160-0.B05-2J..	28	24	49	20 (26.8)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6160-0.B05-5G..	56	36	98	33.1 (44.4)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6160-0.B07-1J..	17	16	31	16.7 (22.4)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6160-0.B07-2J..	28	25	49	21.8 (29.2)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6160-0.B07-5G..	56	43	98	35.2 (47.2)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6160-0.B07-8FB.	80	51	140	46.7 (62.6)	70/140 ⁴⁾		–	–	–
1FW6160-0.B10-1J..	17	17	31	19 (25.5)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6160-0.B10-2J..	28	26	49	24.4 (32.7)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6160-0.B10-5G..	56	47	98	38.1 (51.1)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6160-0.B10-8FB.	80	61	140	49.8 (66.8)	70/140 ⁴⁾		–	–	–
1FW6160-0.B10-2PB.	110	73	190	64.6 (86.6)	140/210		–	–	–
1FW6160-0.B15-2J..	28	26	49	28.2 (37.8)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6160-0.B15-5G..	56	50	98	42.6 (57.1)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6160-0.B15-8FB.	80	68	140	54.6 (73.2)	70/140 ⁴⁾		–	–	–
1FW6160-0.B15-2PB.	110	88	190	69.5 (93.2)	140/210		–	–	–
1FW6160-0.B20-5G..	56	52	98	46.9 (62.9)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6160-0.B20-8FB.	80	72	140	59.2 (79.4)	70/140 ⁴⁾		–	–	–
1FW6160-0.B20-2PB.	110	95	190	74.2 (99.5)	140/210		–	–	–

Length code

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Further information about cables can be
found under Connection system
MOTION-CONNECT.

1) Torque and current at low speeds.

2) The values refer to a supply voltage of 400 V 3 AC ± 10 % (DC link voltage of the drive system 600 V DC).

3) In case of water cooling with inlet temperature of 35 °C (95 °F) and maximum rotor flange temperature of 60 °C (140 °F).

4) Selection optimized to size of power module. The next higher power module offers 100 % torque utilization.

5) For type of connection with exposed core ends, power and signal connectors are not included in the scope of supply of the motor, they must be ordered separately (see Accessories).

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

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type

Water cooling

Selection and ordering data

Maximum torque	Static torque ¹⁾³⁾	Rated torque ²⁾³⁾	Max. speed at maximum torque ²⁾	Max. speed at rated torque ²⁾	1FW6 built-in torque motors Standard type	Moment of inertia of rotor	Weight, approx. stator + rotor
M_{max}	M_0	M_{rated}	n_{max} at M_{max}	n_{max} at M_{rated}	Order No.	J	m
Nm (lbf-ft)	Nm (lbf-ft)	Nm (lbf-ft)	rpm	rpm		10^{-2}kgm^2 (lbf-in-s ²)	kg (lb)
1FW6190 – Water cooling							
990 (730)	672 (496)	633 (467)	54	97	1FW6190-0B05-1J 2	35.8 (3.17)	42.8 (94.4)
		605 (446)	96	160	1FW6190-0B05-2J 2		
		509 (375)	210	380	1FW6190-0B05-5G 2		
1390 (1025)	941 (694)	905 (668)	33	63	1FW6190-0B07-1J 2	48.6 (4.30)	55.8 (123)
		879 (648)	64	110	1FW6190-0B07-2J 2		
		791 (583)	150	250	1FW6190-0B07-5G 2		
		704 (519)	220	390	1FW6190-0B07-8F B2		
1980 (1460)	1340 (988)	1310 (966)	14	38	1FW6190-0B10-1J 2	67.8 (6.0)	75.8 (167)
		1290 (952)	39	70	1FW6190-0B10-2J 2		
		1210 (892)	100	170	1FW6190-0B10-5G 2		
		1130 (833)	150	260	1FW6190-0B10-8F B2		
		955 (704)	250	450	1FW6190-0B10-2PB2		
2970 (2191)	2020 (1490)	1970 (1453)	17	40	1FW6190-0B15-2J 2	99.8 (8.83)	107.8 (238)
		1890 (1394)	62	100	1FW6190-0B15-5G 2		
		1820 (1342)	97	160	1FW6190-0B15-8F B2		
		1670 (1232)	160	270	1FW6190-0B15-2PB2		
3960 (2921)	2690 (1984)	2570 (1896)	42	73	1FW6190-0B20-5G 2	132.0 (11.68)	136.2 (300)
		2500 (1844)	68	110	1FW6190-0B20-8F B2		
		2360 (1741)	120	200	1FW6190-0B20-2PB2		

Cable outlet only for 1FW6160 to 1FW6290:

Axial
Radially outwards
Tangential (Only for types of connection C and D)

W
V
T

Type of connection:

Permanently connected power and signal cables with exposed core ends⁵⁾
Length: 2 m (6.56 ft)

Permanently connected power and signal cables pre-assembled with connectors
Length: 0.5 m (1.64 ft)

C

D

Type of connection only for specific motors (Not configurable):

Permanently connected power and signal cables with exposed core ends⁵⁾
Length: 1 m (3.28 ft)

B

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type
Water cooling

Motor type (repeated)	Static current 1)3)	Rated current 2)3)	Maxi- mum current ²⁾	Calculated power	SIMODRIVE 611 power module		Power cable with complete shield Motor connection via power connector ⁵⁾		
					Required rated current	Order No.	Power con- nector	Cable cross- section ⁶⁾	Pre-assembled basic cable to the converter system
	I_0 A	I_{rated} A	I_{max} A	$P_{el, max}$ kW (HP)	I_{rated} / I_{max} A		Size	mm ²	Order No.
1FW6190-0.B05-1J..	18	17	31	16.3 (21.9)	18/36	For ordering data, see Converter system	1	4 × 2.5	6FX8002-5CA11-....
1FW6190-0.B05-2J..	27	24	47	20.6 (27.6)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6190-0.B05-5G..	54	40	95	32.9 (44.1)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6190-0.B07-1J..	18	17	31	18.2 (24.4)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6190-0.B07-2J..	27	25	47	22.7 (30.4)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6190-0.B07-5G..	54	44	95	35.4 (47.5)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6190-0.B07-8FB.	78	56	130	46.3 (62.1)	70/140 ⁴⁾		–	–	–
1FW6190-0.B10-1J..	18	17	31	20.7 (27.8)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6190-0.B10-2J..	27	26	47	25.7 (34.5)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6190-0.B10-5G..	54	48	95	38.7 (51.9)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6190-0.B10-8FB.	78	64	130	49.9 (66.9)	70/140 ⁴⁾		–	–	–
1FW6190-0.B10-2PB.	120	84	210	69.9 (93.7)	140/210		–	–	–
1FW6190-0.B15-2J..	27	26	47	30.1 (40.4)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6190-0.B15-5G..	54	50	95	44.1 (59.1)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6190-0.B15-8FB.	78	69	130	55.6 (74.6)	70/140 ⁴⁾		–	–	–
1FW6190-0.B15-2PB.	120	99	210	75.8 (102)	140/210		–	–	–
1FW6190-0.B20-5G..	54	51	95	49 (54.7)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6190-0.B20-8FB.	78	71	130	61.1 (81.9)	70/140 ⁴⁾		–	–	–
1FW6190-0.B20-2PB.	120	100	210	81.5 (109)	140/210		–	–	–

Length code

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Further information about cables can be
found under Connection system
MOTION-CONNECT.

1) Torque and current at low speeds.

2) The values refer to a supply voltage of 400 V 3 AC ± 10 % (DC link voltage of the drive system 600 V DC).

3) In case of water cooling with inlet temperature of 35 °C (95 °F) and maximum rotor flange temperature of 60 °C (140 °F).

4) Selection optimized to size of power module. The next higher power module offers 100 % torque utilization.

5) For type of connection with exposed core ends, power and signal connectors are not included in the scope of supply of the motor, they must be ordered separately (see Accessories).

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

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type

Water cooling

Selection and ordering data

Maximum torque	Static torque ¹⁾³⁾	Rated torque ²⁾³⁾	Max. speed at maximum torque ²⁾	Max. speed at rated torque ²⁾	1FW6 built-in torque motors Standard type	Moment of inertia of rotor	Weight, approx. stator + rotor
M_{max} Nm (lbf-ft)	M_0 Nm (lbf-ft)	M_{rated} Nm (lbf-ft)	n_{max} at M_{max} rpm	n_{max} at M_{rated} rpm	Order No.	J 10^{-2}kgm^2 (lbf-in-s ²)	m kg (lb)
1FW6230 – Water cooling							
1320 (974)	841 (620)	799 (589)	34	69	1FW6230-0B05-1J 2	62.2 (5.51)	44.8 (98.8)
		774 (571)	59	110	1FW6230-0B05-2J 2		
		660 (487)	160	290	1FW6230-0B05-5G 2		
1840 (1357)	1180 (870)	1140 (841)	19	45	1FW6230-0B07-1J 2	84.3 (7.46)	58.8 (130)
		1120 (826)	38	73	1FW6230-0B07-2J 2		
		1010 (745)	110	190	1FW6230-0B07-5G 2		
		923 (681)	160	290	1FW6230-0B07-8FB 2		
2630 (1940)	1680 (1239)	1630 (1202)	21	46	1FW6230-0B10-2J 2	118.0 (10.4)	81.8 (180)
		1520 (1121)	74	130	1FW6230-0B10-5G 2		
		1450 (1070)	110	190	1FW6230-0B10-8FB 2		
		1320 (974)	160	290	1FW6230-0B10-2PB 2		
3950 (2914)	2520 (1859)	2440 (1800)	19	43	1FW6230-0B15-4C 2	173.0 (15.3)	117.8 (260)
		2380 (1755)	44	80	1FW6230-0B15-5G 2		
		2310 (1704)	67	120	1FW6230-0B15-8FB 2		
		2190 (1615)	100	180	1FW6230-0B15-2PB 2		
5260 (3880)	3360 (2478)	3230 (2382)	29	56	1FW6230-0B20-5G 2	228.0 (20.2)	153.8 (339)
		3160 (2331)	47	84	1FW6230-0B20-8FB 2		
		3050 (2250)	74	130	1FW6230-0B20-2PB 2		
1FW6290 – Water cooling							
4000 (2950)	2220 (1637)	2060 (1519)	59	110	1FW6290-0B07-5G 2	228 (20.2)	103.6 (228)
		1910 (1409)	110	210	1FW6290-0B07-0L B 2		
6280 (4632)	3490 (2574)	3320 (2449)	40	73	1FW6290-0B11-7A 2	334 (29.6)	159 (351)
		3200 (2360)	71	130	1FW6290-0B11-0L B 2		
8570 (6321)	4760 (3511)	4590 (3386)	28	53	1FW6290-0B15-7A 2	440 (38.9)	214.6 (473)
		4480 (3304)	50	89	1FW6290-0B15-0L B 2		
10900 (8040)	6030 (4448)	5760 (4249)	38	68	1FW6290-0B20-0L B 2	546 (48.3)	260.6 (575)
Cable outlet only for 1FW6160 to 1FW6290:					W V T		
Axial							
Radially outwards							
Tangential (Only for types of connection C and D)							
Type of connection:					C D B		
Permanently connected power and signal cables with exposed core ends ⁵⁾							
Length: 2 m (6.56 ft)							
Permanently connected power and signal cables pre-assembled with connectors							
Length: 0.5 m (1.64 ft)							
Type of connection only for specific motors (Not configurable):							
Permanently connected power and signal cables with exposed core ends ⁵⁾							
Length: 1 m (3.28 ft)							

Synchronous motors

Direct drives for SIMODRIVE 611

1FW6 built-in torque motors, standard type
Water cooling

Motor type (repeated)	Static current 1)3)	Rated current 2)3)	Maxi- mum current ²⁾	Calculated power	SIMODRIVE 611 power module		Power cable with complete shield Motor connection via power connector ⁵⁾		
					Required rated current	Order No.	Power con- nector	Cable cross- section ⁶⁾	Pre-assembled basic cable to the converter system
	I_0 A	I_{rated} A	I_{max} A	$P_{el, max}$ kW (HP)	I_{rated} / I_{max} A		Size	mm ²	Order No.
1FW6230-0.B05-1J..	16	15	31	17.3 (23.2)	18/36	For ordering data, see Converter system	1	4 × 2.5	6FX8002-5CA11-....
1FW6230-0.B05-2J..	24	22	45	21 (28.2)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6230-0.B05-5G..	53	40	100	34.1 (45.7)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6230-0.B07-1J..	16	16	31	19.4 (26.0)	18/36		1	4 × 2.5	6FX8002-5CA11-....
1FW6230-0.B07-2J..	24	22	45	23.6 (31.6)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6230-0.B07-5G..	53	44	100	36.9 (49.5)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6230-0.B07-8FB.	74	56	130	46.3 (62.1)	70/140 ⁴⁾		–	–	–
1FW6230-0.B10-2J..	24	23	45	27.1 (36.3)	28/56		1.5	4 × 4	6FX8002-5CA41-....
1FW6230-0.B10-5G..	54	48	100	42 (56.3)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6230-0.B10-8FB.	74	62	130	50.6 (67.9)	70/140 ⁴⁾		–	–	–
1FW6230-0.B10-2PB.	100	80	190	65.4 (87.7)	140/210		–	–	–
1FW6230-0.B15-4C..	33	32	63	38 (50.9)	42/64		1.5	4 × 6	6FX8002-5CA51-....
1FW6230-0.B15-5G..	53	49	100	47.4 (63.5)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6230-0.B15-8FB.	74	66	130	57.3 (76.8)	70/140 ⁴⁾		–	–	–
1FW6230-0.B15-2PB.	100	90	190	72.5 (97.2)	140/210		–	–	–
1FW6230-0.B20-5G..	53	51	100	53.5 (71.7)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6230-0.B20-8FB.	74	69	130	63.7 (85.4)	70/140 ⁴⁾		–	–	–
1FW6230-0.B20-2PB.	100	94	190	79.4 (106)	140/210		–	–	–
1FW6290-0.B07-5G..	56	52	110	47.7 (64.0)	56/112		1.5	4 × 16	6FX8002-5YP02-....
1FW6290-0.B07-0LB.	100	86	210	70.6 (94.7)	140/210		–	–	–
1FW6290-0.B11-7A..	62	59	130	58 (77.8)	70/140	1.5	4 × 16	6FX8002-5YP02-....	
1FW6290-0.B11-0LB.	100	91	210	78.2 (105)	140/210	–	–	–	
1FW6290-0.B15-7A..	64	61	130	65.2 (87.4)	70/140	1.5	4 × 16	6FX8002-5YP02-....	
1FW6290-0.B15-0LB.	100	94	210	85.2 (114)	140/210	–	–	–	
1FW6290-0.B20-0LB.	100	95	210	91.9 (123)	140/210	–	–	–	

Length code

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Further information about cables can be
found under Connection system
MOTION-CONNECT.

Accessoires

Description	Order No.	Description	Order No.
Cooling connection adapter for		Power connector⁵⁾	
• Torque motors 1FW6160 to 1FW6230	1FW6160-1BA00-0AA0	• Size 1 for 4 × 2.5 mm ²	6FX2003-0LA00
• Torque motors 1FW6290	1FW6290-1BA00-0AA0	• Size 1.5 for 4 × 4/4 × 10/4 × 16 mm ²	6FX2003-0LA10
		Signal connector⁵⁾	
		• M17 (socket) for 6 × 0.5 + 1 × 1.0 mm ²	6FX2003-0SU07
		Signal cable pre-assembled	6FX7002-2SL10-....
		For 1FW6 built-in torque motors	

1) Torque and current at low speeds.

2) The values refer to a supply voltage of 400 V 3 AC ± 10 % (DC link voltage of the drive system 600 V DC).

3) In case of water cooling with inlet temperature of 35 °C (95 °F) and maximum rotor flange temperature of 60 °C (140 °F).

4) Selection optimized to size of power module. The next higher power module offers 100 % torque utilization.

5) For type of connection with exposed core ends, power and signal connectors are not included in the scope of supply of the motor, they must be ordered separately (see Accessories).

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