

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors

Version for peak load – water cooling

Selection and ordering data

Feedrate force		Maximum velocity ³⁾		1FN3 linear motors – Version for peak load		Weight, approx.	
$F_{rated}^{1)2)}$	F_{max}	v_{max} at F_{max}	v_{max} at F_{rated}	Primary section	Secondary section	Primary section without/with precision cooling	Secondary section without/with heatsink profiles
N (lb _f)	N (lb _f)	m/min (ft/min)	m/min (ft/min)	Order No.	Order No.	kg (lb)	kg (lb)
Water cooling							
200 (45)	550 (124)	146 (479)	373 (1224)	1FN3050-2WC00-0EA1	1FN3050-4SA00-0AA0	2.4/2.9 (5.3/6.4)	0.4/0.5 (0.9/1.1)
		146 (479)	373 (1224)	1FN3050-2WC00-0FA1			
200 (45)	490 (110)	138 (453)	322 (1056)	1FN3100-1WC00-0BA1	1FN3100-4SA00-0AA0	2.2/- (4.9/-) ⁴⁾	0.7/0.8 (1.5/1.8)
450 (101)	1100 (247)	131 (430)	297 (974)	1FN3100-2WC00-0BA1		3.8/4.4 (8.4/9.7)	
		237 (778)	497 (1631)	1FN3100-2WE00-0BA1			
675 (152)	1650 (371)	120 (394)	277 (909)	1FN3100-3WC00-0BA1		5.4/6.2 (11.9/13.7)	
		237 (778)	497 (1631)	1FN3100-3WE00-0BA1			
900 (202)	2200 (495)	131 (430)	297 (974)	1FN3100-4WC00-0BA1		7.4/8.5 (16.3/18.7)	
		237 (778)	497 (1631)	1FN3100-4WE00-0BA1			
1125 (253)	2750 (618)	109 (358)	255 (837)	1FN3100-5WC00-0BA1		9.1/10.4 (20.1/22.9)	
340 (76)	820 (184)	126 (413)	282 (925)	1FN3150-1WC00-0BA1	1FN3150-4SA00-0AA0	3.0/- (6.6/-) ⁴⁾	1.2/1.3 (2.7/2.9)
675 (152)	1650 (371)	126 (413)	282 (925)	1FN3150-2WC00-0BA1		5.3/6 (11.7/13.2)	
1010 (227)	2470 (555)	126 (413)	282 (925)	1FN3150-3WC00-0BA1		7.8/8.7 (17.2/19.2)	
1350 (304)	3300 (742)	126 (413)	282 (925)	1FN3150-4WC00-0BA1		10.2/11.4 (22.5/25.1)	
1690 (380)	4120 (926)	126 (413)	282 (925)	1FN3150-5WC00-0BA1		12.8/14.2 (28.2/31.3)	
610 (137)	1720 (387)	128 (420)	309 (1014)	1FN3300-1WC00-0BA1	1FN3300-4SA00-0AA0	6.2/- (13.7/-) ⁴⁾	2.4/2.6 (5.3/5.7)
1225 (275)	3450 (776)	63 (207)	176 (577)	1FN3300-2WB00-0BA1		11.4/12.4 (25.1/27.3)	
		125 (410)	297 (974)	1FN3300-2WC00-0BA1			
		369 (1211)	805 (2641)	1FN3300-2WG00-0BA1			
1840 (414)	5170 (1162)	125 (410)	297 (974)	1FN3300-3WC00-0BA1		17.0/18.4 (37.5/40.6)	
		383 (1257)	836 (2743)	1FN3300-3WG00-0BA1			
2450 (551)	6900 (1551)	63 (207)	176 (577)	1FN3300-4WB00-0BA1		22.2/24 (48.9/52.9)	
		125 (410)	297 (974)	1FN3300-4WC00-0BA1			

Type of connection:

1FN3100 to 1FN3900 motors

Connection cover prepared for separate power and signal cables

B

1FN3050 motor

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

E

1FN3050 motor

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

F

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors
Version for peak load – water cooling

Motor type Primary section (repeated)	Rated cur- rent	Maxi- mum cur- rent	Calculated power	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via adapter cable with power connector for increased velocity/acceleration			
				Required rated current	Booksiz format For additional versions and components see chapter SINAMICS S120 drive system Order No.	Pre-assembled adapter cable for motor Order No.	Power con- nector Size	Cable cross- section ⁵⁾ mm ²	Pre-assembled basic cable to the drive system Order No.
A	A	A	kW (HP)	A					
1FN3050-2WC00-...	2.7	8.2	4.1 (5.5)	5/10	6SL312-1-TE15-0AA3	6)	1	4 × 2.5	6FX8002-5CS11-....
1FN3050-2WC00-...	2.7	8.2	4.1 (5.5)	5/10	6SL312-1-TE15-0AA3	7)	1	4 × 2.5	6FX8002-5CS11-....
1FN3100-1WC00-...	2.4	6.5	3.1 (4.2)	5/10	6SL312-1-TE15-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-2WC00-...	5.1	13.5	6.3 (8.5)	9/18	6SL312-1-TE21-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-2WE00-...	8.1	21.5	8.3 (11.1)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-3WC00-...	7.2	19.1	9.2 (12.3)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-3WE00-...	12.1	32.2	12.4 (16.6)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-4WC00-...	10.1	27.0	12.6 (16.9)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-4WE00-...	16.1	43.0	16.6 (22.3)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3100-5WC00-...	11.0	29.5	14.4 (19.3)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3150-1WC00-...	3.6	9.5	4.3 (5.8)	5/10	6SL312-1-TE15-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3150-2WC00-...	7.2	19.1	8.7 (11.7)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3150-3WC00-...	10.7	28.6	13.0 (17.4)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3150-4WC00-...	14.3	38.2	17.4 (23.3)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3150-5WC00-...	17.9	47.7	21.7 (29.1)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-1WC00-...	6.5	20.0	8.7 (11.7)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-2WB00-...	8.0	24.7	13.2 (17.7)	18/36	6SL312-1-TE21-8AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-2WC00-...	12.6	39.2	16.7 (22.4)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-2WG00-...	32.2	99.7	30.1 (40.4)	60/113	6SL312-1-TE26-0AA3		1.5	4 × 6	6FX8002-5CS54-....
1FN3300-3WC00-...	19.0	58.7	25.1 (33.7)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-3WG00-...	50.0	154.9	46.2 (61.9)	132/210	6SL312-1-TE31-3AA3		1.5	4 × 16	6FX8002-5CS24-....
1FN3300-4WB00-...	16.0	49.4	26.3 (35.3)	30/56	6SL312-1-TE23-0AA3		1	4 × 2.5	6FX8002-5CS11-....
1FN3300-4WC00-...	25.3	78.3	33.5 (44.9)	45/85	6SL312-1-TE24-5AA3		1.5	4 × 4	6FX8002-5CS54-....

Cooling:	
Internal air cooling	0
External air cooling	1
Motor Module:	
Single Motor Module	1
Double Motor Module	2

.... Length code

Further information about the cables can be found in chapter Connection system MOTION-CONNECT.

¹⁾ For water cooling with inlet temperature 35 °C (95 °F).

²⁾ A reduction of up to 30 % must be expected in case of motor standstill, at very low velocities, or with very short traverse paths.

³⁾ Velocity values refer to a DC link voltage of the drive system of 600 V DC.

⁴⁾ No precision cooler available.

⁵⁾ 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).

⁶⁾ Permanently connected power and signal cables, length 2 m (6.56 ft), with exposed core ends.

⁷⁾ Permanently connected power and signal cables, length 0.5 m (1.64 ft), with power connector size 1 and M17 signal connector.

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors Version for peak load – water cooling

Selection and ordering data

Feedrate force				Maximum velocity ³⁾		1FN3 linear motors – Version for peak load		Weight, approx.	
						Primary section	Secondary section	Primary section without/with precision cooling	Secondary section without/with heatsink profiles
F_{rated} ¹⁾²⁾	F_{max}	v_{max} at F_{max}	v_{max} at F_{rated}	Order No.	Order No.	kg (lb)	kg (lb)		
N (lb _f)	N (lb _f)	m/min (ft/min)	m/min (ft/min)						
Water cooling									
1930 (434)	5180 (1165)	30 (98)	112 (368)	1FN3450-2WA50-0BA1	1FN3450-4SA00-0AA0	15.9/17.1 (35.1/37.7)	3.8/4 (8.4/8.8)		
		120 (394)	275 (902)	1FN3450-2WC00-0BA1					
		240 (787)	519 (1703)	1FN3450-2WE00-0BA1					
2895 (651)	7760 (1745)	62 (203)	164 (538)	1FN3450-3WB00-0BA1	1FN3450-4SA00-0AA0	22.6/24.3 (49.8/53.6)			
		90 (295)	217 (712)	1FN3450-3WB50-0BA1					
		120 (394)	275 (902)	1FN3450-3WC00-0BA1					
		240 (787)	519 (1703)	1FN3450-3WE00-0BA1					
3860 (868)	10350 (2327)	62 (203)	164 (538)	1FN3450-4WB00-0BA1	1FN3450-4SA00-0AA0	30.9/33.1 (68.1/73)			
		90 (295)	217 (712)	1FN3450-4WB50-0BA1					
		120 (394)	275 (902)	1FN3450-4WC00-0BA1					
		240 (787)	519 (1703)	1FN3450-4WE00-0BA1					
2610 (587)	6900 (1551)	36 (118)	120 (394)	1FN3600-2WA50-0BA1	1FN3600-4SA00-0AA0	22.2/24.7 (49/54.5)	4.6/5 (10.1/11)		
3915 (880)	10350 (2327)	58 (190)	155 (509)	1FN3600-3WB00-0BA1					
		127 (417)	279 (915)	1FN3600-3WC00-0BA1		31.5/33.4 (69.5/73.7)			
5220 (1174)	13800 (3102)	26 (85)	105 (345)	1FN3600-4WA30-0BA1	1FN3600-4SA00-0AA0	40.8/43.3 (90/95.5)			
		58 (190)	155 (509)	1FN3600-4WB00-0BA1					
		91 (299)	215 (705)	1FN3600-4WB50-0BA1					
		112 (367)	254 (833)	1FN3600-4WC00-0BA1					
4050 (910)	10350 (2327)	65 (213)	160 (525)	1FN3900-2WB00-0BA1	1FN3900-4SA00-0AA0	28.2/29.7 (62.2/65.4)	7.5/7.9 (16.5/17.4)		
		115 (377)	253 (830)	1FN3900-2WC00-0BA1					
6075 (1366)	15530 (3491)	75 (246)	181 (594)	1FN3900-3WB00-0BA1		42.2/44.3 (93.1/97.6)			
8100 (1821)	20700 (4653)	65 (213)	160 (525)	1FN3900-4WB00-0BA1		56.2/58.9 (124/130)			
		88 (290)	203 (666)	1FN3900-4WB50-0BA1					
		115 (377)	253 (830)	1FN3900-4WC00-0BA1					

Type of connection:

1FN3100 to 1FN3900 motors

Connection cover prepared for separate power and signal cables

B

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors
Version for peak load – water cooling

Motor type Primary section (repeated)	Rated current	Maxi- mum cur- rent	Calculated power	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via adapter cable with power connector for increased velocity/acceleration			
				Required rated current	Booksize format For additional versions and components see chapter SINAMICS S120 drive system	Pre-assembled adapter cable for motor	Power Cable con- nec- tor	Cable cross- section ⁴⁾	Pre-assembled basic cable to the drive system
	I_{rated} ¹⁾	I_{max}	$P_{el, max}$	I_{rated}/I_{max}	Order No.	Order No.	Size	mm ²	Order No.
	A	A	kW (HP)	A					
1FN3450-2WA50-...	8.6	25.3	15.9 (21.3)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM62-....	1	4 × 2.5	6FX8002-5CS11-....
1FN3450-2WC00-...	18.8	55.3	23.1 (31)	30/56	6SL312-1-TE23-0AA3	6FX7002-5LM62-....	1	4 × 2.5	6FX8002-5CS11-....
1FN3450-2WE00-...	33.8	99.7	32.6 (43.7)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM82-....	1.5	4 × 6	6FX8002-5CS54-....
1FN3450-3WB00-...	17.9	52.7	27.5 (36.9)	30/56	6SL312-1-TE23-0AA3	6FX7002-5LM62-....	1	4 × 2.5	6FX8002-5CS11-....
1FN3450-3WB50-...	22.8	67.3	31.1 (41.7)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3450-3WC00-...	28.1	83.0	34.6 (46.4)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3450-3WE00-...	50.7	149.6	49.0 (65.7)	132/210	6SL312-1-TE31-3AA3	6FX7002-5LM02-....	1.5	4 × 16	6FX8002-5CS24-....
1FN3450-4WB00-...	23.8	70.3	36.7 (49.2)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3450-4WB50-...	30.4	89.8	41.4 (55.5)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM82-....	1.5	4 × 6	6FX8002-5CS54-....
1FN3450-4WC00-...	37.5	110.6	46.2 (61.9)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3450-4WE00-...	67.6	199.5	65.3 (87.5)	132/210	6SL312-1-TE31-3AA3	6FX7008-1BB61-.... ⁵⁾	–	4 × 25	6FX7008-1BB25-.... ⁶⁾
1FN3600-2WA50-...	12.4	36.0	21.9 (29.4)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM62-....	1	4 × 2.5	6FX8002-5CS11-....
1FN3600-3WB00-...	23.2	67.3	35.4 (47.5)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3600-3WC00-...	35.7	105.9	44.6 (59.8)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM82-....	1.5	4 × 6	6FX8002-5CS54-....
1FN3600-4WA30-...	22.3	64.9	41.9 (56.2)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3600-4WB00-...	30.9	89.8	47.2 (63.3)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM82-....	1.5	4 × 6	6FX8002-5CS54-....
1FN3600-4WB50-...	40.8	118.5	53.2 (71.3)	85/141	6SL312-1-TE28-5AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3600-4WC00-...	46.9	136.5	55.5 (74.4)	85/141	6SL312-1-TE28-5AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3900-2WB00-...	24.7	69.5	34.5 (46.3)	45/85	6SL312-1-TE24-5AA3	6FX7002-5LM72-....	1.5	4 × 4	6FX8002-5CS54-....
1FN3900-2WC00-...	36.7	103.3	40.9 (54.8)	60/113	6SL312-1-TE26-0AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3900-3WB00-...	40.6	114.0	54.5 (73.1)	85/141	6SL312-1-TE28-5AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3900-4WB00-...	49.4	138.9	68.9 (92.4)	132/210	6SL312-1-TE31-3AA3	6FX7002-5LM32-....	1.5	4 × 10	6FX8002-5CS64-....
1FN3900-4WB50-...	60.6	170.3	76.3 (102.3)	132/210	6SL312-1-TE31-3AA3	6FX7002-5LM02-....	1.5	4 × 16	6FX8002-5CS24-....
1FN3900-4WC00-...	73.5	206.5	81.9 (109.8)	132/210	6SL312-1-TE31-3AA3	6FX7008-1BB61-.... ⁵⁾	–	4 × 25	6FX7008-1BB25-.... ⁶⁾

Cooling:	
Internal air cooling	0
External air cooling	1
Motor Module:	
Single Motor Module	1
Double Motor Module	2

.... Length code

Further information about the cables can be found in chapter Connection system MOTION-CONNECT.

¹⁾ For water cooling with inlet temperature 35 °C (95 °F).

²⁾ A reduction of up to 30 % must be expected in case of motor standstill, at very low velocities, or with very short traverse paths.

³⁾ Velocity values refer to a DC link voltage of the drive system of 600 V DC.

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⁾ Sold by the meter only (4 × 16 mm²). Connected to primary section with 16 mm² (< 1.5 m (4.92 ft)), then routed onwards through terminal box with 25 mm².

⁶⁾ Sold by the meter only (4 × 25 mm²).

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors

Version for continuous load – water cooling

Selection and ordering data

Feedrate force		Maximum velocity ³⁾		1FN3 linear motors – Version for continuous load		Weight, approx.	
$F_{rated}^{1)2)}$	F_{max}	v_{max} at F_{max}	v_{max} at F_{rated}	Primary section	Secondary section	Primary section without/with precision cooling	Secondary section without/with heatsink profiles
N (lb _f)	N (lb _f)	m/min (ft/min)	m/min (ft/min)	Order No.	Order No.	kg (lb)	kg (lb)
Water cooling							
150 (34)	260 (58)	242 (794)	435 (1427)	1FN3050-1ND00-0EA1	1FN3050-4SA00-0AA0	1.9/2.4 (4.2/5.3)	0.4/0.5 (0.9/1.1)
		242 (794)	435 (1427)	1FN3050-1ND00-0FA1			
300 (67)	510 (115)	106 (348)	202 (663)	1FN3050-2NB80-0EA1		3.2/4.0 (7.1/8.8)	
		106 (348)	202 (663)	1FN3050-2NB80-0FA1			
300 (67)	510 (115)	117 (384)	214 (702)	1FN3100-1NC00-0BA1	1FN3100-4SA00-0AA0	3/3.5 (6.6/7.7)	0.7/0.8 (1.5/1.8)
605 (136)	1020 (229)	170 (558)	307 (1007)	1FN3100-2NC80-0BA1		5.1/5.9 (11.3/13.1)	
905 (203)	1530 (344)	115 (337)	211 (692)	1FN3100-3NC00-0BA1		7.3/8.3 (16.1/18.03)	
1205 (271)	2040 (459)	169 (555)	305 (1001)	1FN3100-4NC80-0BA1		10/11.3 (22.1/24.9)	
455 (102)	770 (173)	129 (423)	234 (768)	1FN3150-1NC20-0BA1	1FN3150-4SA00-0AA0	4.1/4.6 (9.0/10.1)	1.2/1.3 (2.7/2.9)
905 (203)	1530 (344)	110 (361)	201 (660)	1FN3150-2NB80-0BA1		7.2/8.1 (15.9/17.9)	
1360 (306)	2300 (517)	163 (535)	292 (958)	1FN3150-3NC70-0BA1		10.5/11.7 (23.2/25.8)	
1810 (407)	3060 (688)	109 (358)	200 (656)	1FN3150-4NB80-0BA1		13.8/15.2 (30.4/33.5)	
865 (195)	1470 (331)	129 (423)	230 (755)	1FN3300-1NC10-0BA1	1FN3300-4SA00-0AA0	8.8/9.5 (19.4/20.9)	2.4/2.6 (5.3/5.7)
1730 (389)	2940 (661)	127 (417)	228 (748)	1FN3300-2NC10-0BA1		16.1/17.2 (35.5/37.9)	
2595 (583)	4400 (989)	144 (473)	257 (843)	1FN3300-3NC40-0BA1		22.8/24.3 (50.3/53.6)	
3460 (778)	5870 (1320)	109 (358)	196 (643)	1FN3300-4NB80-0BA1		30.4/32.3 (67.0/71.2)	
2595 (583)	4400 (989)	153 (502)	271 (889)	1FN3450-2NC50-0BA1	1FN3450-4SA00-0AA0	22/23.2 (48.5/51.2)	3.8/4 (8.4/8.8)
3890 (875)	6600 (1484)	152 (499)	270 (886)	1FN3450-3NC50-0BA1		32/33.6 (70.6/74.1)	
5185 (1166)	8810 (1981)	106 (348)	190 (623)	1FN3450-4NB80-0BA1		42.3/44.4 (93.3/97.9)	
3460 (778)	5870 (1320)	112 (368)	200 (656)	1FN3600-2NB80-0BA1	1FN3600-4SA00-0AA0	28.9/30.4 (63.7/67.0)	4.6/5 (10.1/11)
5185 (1166)	8810 (1981)	111 (364)	199 (653)	1FN3600-3NB80-0BA1		42.9/45.0 (94.6/99.2)	
6915 (1555)	11740 (2639)	111 (364)	199 (653)	1FN3600-4NB80-0BA1		56.6/59.2 (124.8/130.54)	
5185 (1166)	8810 (1981)	71 (233)	130 (427)	1FN3900-2NB20-0BA1	1FN3900-4SA00-0AA0	42.4/44.2 (93.5/97.5)	7.5/7.9 (16.5/17.4)
7780 (1749)	13210 (2970)	71 (233)	129 (423)	1FN3900-3NB20-0BA1		62/64.5 (136.7/142.2)	
10375 (2332)	17610 (3959)	70 (230)	129 (423)	1FN3900-4NB20-0BA1		82.2/85.3 (181.3/188.1)	

Type of connection:

1FN3100 to 1FN3900 motors

Connection cover prepared for separate power and signal cables

B

1FN3050 motor

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

E

1FN3050 motor

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

F

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors
Version for continuous load – water cooling

Motor type Primary section (repeated)	Rated current	Maxi- mum cur- rent	Calcu- lated power	SINAMICS S120 Motor Module		Power cable with complete shield Motor connection via adapter cable with power connector for increased velocity/acceleration				
				Required rated current	Booksize format For additional versions and components see chapter SINAMICS S120 drive system	Pre-assembled adapter cable for motor	Power con- nector	Cable cross- section ⁵⁾	Pre-assembled basic cable to the drive system	
										Order No.
I_{rated}^1	I_{max}	$P_{el, max}$	I_{rated}/I_{max}							
A	A	kW (HP)	A							
1FN3050-1ND...	2.8	5.9	1.7 (2.28)	3/6	6SL312-1-TE13-0AA3	6)	1	4 × 2.5	6FX8002-5CS11-	
1FN3050-1ND...	2.8	5.9	1.7 (2.28)	3/6	6SL312-1-TE13-0AA3	6)	1	4 × 2.5	6FX8002-5CS11-	
1FN3050-2NB...	2.8	5.9	2.3 (3.08)	3/6	6SL312-1-TE13-0AA3	6)	1	4 × 2.5	6FX8002-5CS11-	
1FN3050-2NB...	2.8	5.9	2.3 (3.08)	3/6	6SL312-1-TE13-0AA3	6)	1	4 × 2.5	6FX8002-5CS11-	
1FN3100-1NC...	2.8	5.9	2.1 (2.8)	3/6	6SL312-1-TE13-0AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3100-2NC...	8	16.5	5.1 (6.84)	9/18	6SL312-1-TE21-0AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3100-3NC...	8.5	17.6	6.3 (8.5)	9/18	6SL312-1-TE21-0AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3100-4NC...	15.9	33.1	10.2 (13.9)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3150-1NC...	4.5	9.4	3.2 (4.3)	5/10	6SL312-1-TE15-0AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3150-2NB...	8	16.5	5.8 (7.78)	9/18	6SL312-1-TE21-0AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3150-3NC...	16.9	35.2	10.8 (14.5)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3150-4NB...	15.9	33.1	11.6 (15.6)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM42-	1	4 × 2.5	6FX8002-5CS11-	
1FN3300-1NC...	8.1	17.1	5.4 (7.2)	9/18	6SL312-1-TE21-0AA3	6FX7002-5LM62-	1	4 × 2.5	6FX8002-5CS11-	
1FN3300-2NC...	16.2	34.1	10.7 (14.3)	18/36	6SL312-1-TE21-8AA3	6FX7002-5LM62-	1	4 × 2.5	6FX8002-5CS11-	
1FN3300-3NC...	27.3	57.4	17.3 (23.2)	30/56 ⁴⁾	6SL312-1-TE23-0AA3	6FX7002-5LM72-	1.5	4 × 4	6FX8002-5CS41-	
1FN3300-4NB...	28.4	59.6	19.6 (26.3)	30/56 ⁴⁾	6SL312-1-TE23-0AA3	6FX7002-5LM72-	1.5	4 × 4	6FX8002-5CS41-	
1FN3450-2NC...	28.4	59.6	17.4 (23.3)	30/56 ⁴⁾	6SL312-1-TE23-0AA3	6FX7002-5LM72-	1.5	4 × 4	6FX8002-5CS41-	
1FN3450-3NC...	42.5	89.5	26.1 (35.0)	45/85 ⁴⁾	6SL312-1-TE24-5AA3	6FX7002-5LM32-	1.5	4 × 10	6FX8002-5CS64-	
1FN3450-4NB...	40.8	85.8	27.9 (37.4)	45/85 ⁴⁾	6SL312-1-TE24-5AA3	6FX7002-5LM32-	1.5	4 × 10	6FX8002-5CS64-	
1FN3600-2NB...	28.4	59.6	19.3 (25.9)	30/56 ⁴⁾	6SL312-1-TE23-0AA3	6FX7002-5LM72-	1.5	4 × 4	6FX8002-5CS41-	
1FN3600-3NB...	42.5	89.5	28.9 (38.8)	45/85 ⁴⁾	6SL312-1-TE24-5AA3	6FX7002-5LM32-	1.5	4 × 10	6FX8002-5CS64-	
1FN3600-4NB...	56.7	119.3	38.5 (51.6)	60/113 ⁴⁾	6SL312-1-TE26-0AA3	6FX7002-5LM02-	1.5	4 × 16	6FX8002-5CS24-	
1FN3900-2NB...	28.4	59.6	22.3 (29.9)	30/56 ⁴⁾	6SL312-1-TE23-0AA3	6FX7002-5LM72-	1.5	4 × 4	6FX8002-5CS41-	
1FN3900-3NB...	42.5	89.5	33.4 (44.8)	45/85 ⁴⁾	6SL312-1-TE24-5AA3	6FX7002-5LM32-	1.5	4 × 10	6FX8002-5CS64-	
1FN3900-4NB...	56.7	119.3	44.5 (59.7)	60/113 ⁴⁾	6SL312-1-TE26-0AA3	6FX7002-5LM02-	1.5	4 × 16	6FX8002-5CS24-	

Cooling:	
Internal air cooling	0
External air cooling	1
Motor Module:	
Single Motor Module	1
Double Motor Module	2

.... Length code

Further information about the cables can be found in chapter Connection system MOTION-CONNECT.

- 1) For water cooling with inlet temperature 35 °C (95 °F).
- 2) A reduction of up to 30 % must be expected in case of motor standstill, at very low velocities, or with very short traverse paths.
- 3) Velocity values refer to a DC link voltage of the drive system of 600 V DC.
- 4) Motor Modules are designed for feedrate force F_{rated} . If feedrate force F_{max} is utilized, the next largest Motor Module must be used. If a Motor 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 EN 60204-1 for installation type C, for continuous duty at an ambient air temperature of 40 °C (104 °F).
- 6) Permanently connected power and signal cables.

Direct drives

Linear motors for SINAMICS S120

1FN3 linear motors Water cooling

Selection and ordering data

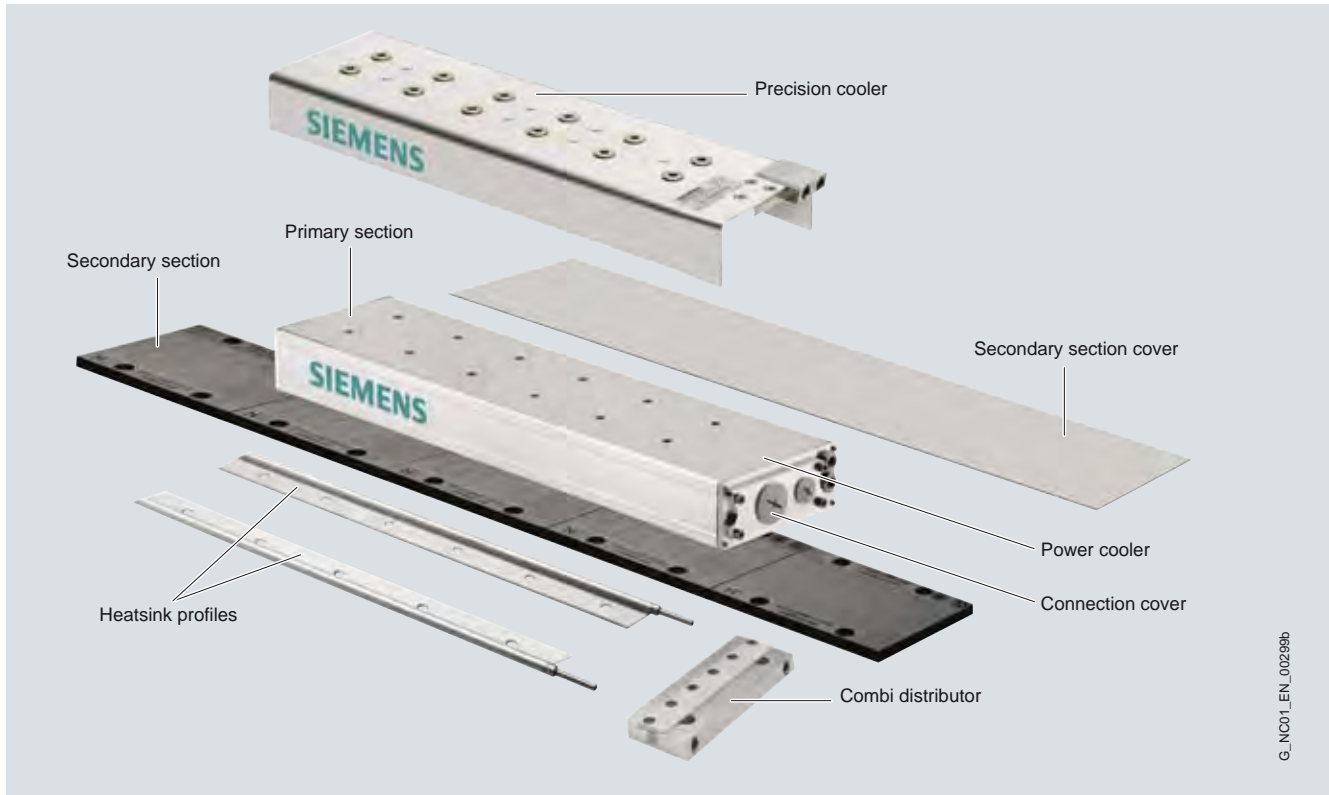
1FN3 linear motors Type	Optional components		
	Secondary section cover		Cover end pieces for secondary section cover
	Continuous ¹⁾ Order No.	Segmented Order No.	Retaining of the continuous cover without heatsink profiles Order No.
1FN3050-...	1FN3050-0TB00-1 ■ ■ 0	1FN3050-4TP00-1A ■ ■	1FN3050-0TC00-0AA0
1FN3100-...	1FN3100-0TB00-1 ■ ■ 0	1FN3100-4TP00-1A ■ ■	1FN3100-0TC00-0AA0
1FN3150-...	1FN3150-0TB00-1 ■ ■ 0	1FN3150-4TP00-1A ■ ■	1FN3150-0TC00-0AA0
1FN3300-...	1FN3300-0TB00-1 ■ ■ 0	1FN3300-4TP00-1A ■ ■	1FN3300-0TC00-0AA0
1FN3450-...	1FN3450-0TB00-1 ■ ■ 0	1FN3450-4TP00-1A ■ ■	1FN3450-0TC00-0AA0
1FN3600-...	1FN3600-0TB00-1 ■ ■ 0	1FN3600-4TP00-1A ■ ■	–
1FN3900-...	1FN3900-0TB00-1 ■ ■ 0	1FN3900-4TP00-1A ■ ■	–

Number of secondary sections	0	A	Number of secondary sections for all motors	2.5	C	5
	10	B		3	D	0
	20	C		3.5	D	5
	30	D		4	E	0
	40	E		5	F	0
	50	F				
	0	A	Number of secondary sections for motors 1FN3600/1FN3900	5.5	F	5
	1	B		6.5	G	5
	2	C				
	3	D				
	4	E				
	5	F				
	6	G				
	7	H				
	8	J				
	9	K				

1FN3 linear motors Version for peak load	Optional components Precision cooler	1FN3 linear motors Version for continuous load	Optional components Precision cooler
Type	Order No.	Type	Order No.
1FN3050-2W...	1FN3050-2PK00-0AA0	1FN3050-1N...	1FN3050-1PK10-0AA0
1FN3100-2W...	1FN3100-2PK00-0AA0	1FN3050-2N...	1FN3050-2PK10-0AA0
1FN3100-3W...	1FN3100-3PK00-0AA0	1FN3100-1N...	1FN3100-1PK10-0AA0
1FN3100-4W...	1FN3100-4PK00-0AA0	1FN3100-2N...	1FN3100-2PK10-0AA0
1FN3100-5W...	1FN3100-5PK00-0AA0	1FN3100-3N...	1FN3100-3PK10-0AA0
1FN3150-2W...	1FN3150-2PK00-0AA0	1FN3100-4N...	1FN3100-4PK10-0AA0
1FN3150-3W...	1FN3150-3PK00-0AA0	1FN3150-1N...	1FN3150-1PK10-0AA0
1FN3150-4W...	1FN3150-4PK00-0AA0	1FN3150-2N...	1FN3150-2PK10-0AA0
1FN3150-5W...	1FN3150-5PK00-0AA0	1FN3150-3N...	1FN3150-3PK10-0AA0
1FN3300-2W...	1FN3300-2PK00-0AA0	1FN3150-4N...	1FN3150-4PK10-0AA0
1FN3300-3W...	1FN3300-3PK00-0AA0	1FN3300-1N...	1FN3300-1PK10-0AA0
1FN3300-4W...	1FN3300-4PK00-0AA0	1FN3300-2N...	1FN3300-2PK10-0AA0
1FN3450-2W...	1FN3450-2PK00-0AA0	1FN3300-3N...	1FN3300-3PK10-0AA0
1FN3450-3W...	1FN3450-3PK00-0AA0	1FN3300-4N...	1FN3300-4PK10-0AA0
1FN3450-4W...	1FN3450-4PK00-0AA0	1FN3450-2N...	1FN3450-2PK10-0AA0
1FN3600-2W...	1FN3600-2PK00-0AA0	1FN3450-3N...	1FN3450-3PK10-0AA0
1FN3600-3W...	1FN3600-3PK00-0AA0	1FN3450-4N...	1FN3450-4PK10-0AA0
1FN3600-4W...	1FN3600-4PK00-0AA0	1FN3600-2N...	1FN3600-2PK10-0AA0
1FN3900-2W...	1FN3900-2PK00-0AA0	1FN3600-3N...	1FN3600-3PK10-0AA0
1FN3900-3W...	1FN3900-3PK00-0AA0	1FN3600-4N...	1FN3600-4PK10-0AA0
1FN3900-4W...	1FN3900-4PK00-0AA0	1FN3900-2N...	1FN3900-2PK10-0AA0
		1FN3900-3N...	1FN3900-3PK10-0AA0
		1FN3900-4N...	1FN3900-4PK10-0AA0

¹⁾ Continuous cover for several secondary sections. The maximum length of the secondary section cover is 6 m (19.7 ft). For 1FN3050 to 1FN3150 motors, this corresponds to a maximum number of 50 secondary sections (AB to FA), for 1FN3300 to 1FN3900 motors, this corresponds to a maximum number of 32 secondary sections (AB to DC).

Selection and ordering data (continued)



G_NC01_EN_002898

1FN3 linear motor, design

Linear motors Type	Optional components			
	Heatsink profile ¹⁾	Secondary section end pieces ²⁾		Combi end piece
		Combi distributor	Combi adapter	
		Parallel water connection for all heatsink profiles	Combi adapter and end piece can only be implemented together.	Water diversion
		Single-sided water connection		
	Order No.	Order No.	Order No.	Order No.
1FN3050-...	1FN3002-0TK0 ■ -1 ■ ■ 0	1FN3050-0TJ01-0AA0	1FN3050-0TG01-0AA0	1FN3050-0TF01-0AA0
1FN3100-...	1FN3002-0TK0 ■ -1 ■ ■ 0	1FN3100-0TJ01-0AA0	1FN3100-0TG01-0AA0	1FN3100-0TF01-0AA0
1FN3150-...	1FN3002-0TK0 ■ -1 ■ ■ 0	1FN3150-0TJ01-0AA0	1FN3150-0TG01-0AA0	1FN3150-0TF01-0AA0
1FN3300-...	1FN3003-0TK0 ■ -1 ■ ■ 0	1FN3300-0TJ01-0AA0	1FN3300-0TG01-0AA0	1FN3300-0TF01-0AA0
1FN3450-...	1FN3003-0TK0 ■ -1 ■ ■ 0	1FN3450-0TJ01-0AA0	1FN3450-0TG01-0AA0	1FN3450-0TF01-0AA0
1FN3600-...	1FN3004-0TK0 ■ -1 ■ ■ 0	1FN3600-0TJ01-0AA0	–	–
1FN3900-...	1FN3005-0TK0 ■ -1 ■ ■ 0	1FN3900-0TJ01-0AA0	–	–

With plug-in coupling prepared for connection to combi distributor with plug-in coupling, combi adapter with plug-in coupling, combi end piece with plug-in coupling or as intermediate unit for heatsink profile with cable grommet nipple
1FN3050 to 1FN3450 motors³⁾:
Grommet nipple only on right end of secondary section track
1FN3600/1FN3900 motors:
Grommet nipple on both ends of secondary section track
1FN3050 to 1FN3450 motors³⁾:
Grommet nipple only on left end of secondary section track

Number of secondary sections	A	B	C
0			
1	A		
2	B		
3	C		
4	D		
5	E		
6	F		
7	G		
8	H		
9	J		

- 1) 1FN3050 to 1FN3450 motors:
2 units required per secondary section track.
1FN3600 to 1FN3900:
3 units required per secondary section track.
The maximum available length of a single-part heatsink profile is 3 m (9.84 ft).
For the following frame sizes, this corresponds to:
1FN3050 to 1FN3150, a maximum of 24 secondary sections (AB to CE)
1FN3300 to 1FN3900, a maximum of 16 secondary sections (AB to BG).
- 2) The secondary section end pieces are designed to allow clamping of the integrated secondary section cover.
- 3) Available only in length AC (equals 2 secondary sections). The difference in the secondary section track length must be compensated through assembly with the heatsink profile 1FN300.-0TK04-1..0.