

MOTION-CONNECT connection systems

Power cables for SINAMICS S120

Technical specifications

Power cables	MOTION-CONNECT 500 6FX500-...-...-...	MOTION-CONNECT 800PLUS 6FX800-...-...-...
Approvals, according to		
• VDE ¹⁾	Yes	Yes
• cURus or UR/CSA	UL 758, CSA-C22.2-N.210.2-M90	UL 758, CSA-C22.2-N.210.2-M90
• UR-CSA File No. ²⁾	Yes	Yes
• RoHS conformity	Yes	Yes
Rated voltage V_0/V in accordance with EN 50395		
• Power conductors	600 V/1000 V	600 V/1000 V
• Signal conductors	24 V (EN) 1000 V (UL/CSA)	24 V (EN) 1000 V (UL/CSA)
Test voltage, rms		
• Power conductors	4 kV	4 kV
• Signal conductors	2 kV	2 kV
Operating temperature on the surface		
• Fixed installation	-20 ... +80 °C (-4 ... +176 °F)	-50 ... +80 °C (-58 ... +176 °F)
• Flexible installation	0 ... 60 °C (32 ... 140 °F)	-20 ... +60 °C (-4 ... +140 °F)
Tensile stress, max.		
• Fixed installation	50 N/mm ² (7252 lb _f /in ²)	50 N/mm ² (7252 lb _f /in ²)
• Flexible installation	20 N/mm ² (2901 lb _f /in ²)	20 N/mm ² (2901 lb _f /in ²)
Smallest bending radius		
• Fixed installation	$5 \times D_{\max}$	$4 \times D_{\max}$
• Flexible installation	See selection and ordering data	See selection and ordering data
Torsional stress	Absolute 30°/m	Absolute 30°/m
Bending	100000	10 million
Traversing velocity	30 m/min (98.4 ft/min)	Up to 300 m/min (984 ft/min)
Acceleration	2 m/s ² (6.56 ft/s ²)	Up to 50 m/s ² (164 ft/s ²), see characteristics
Insulation material, incl. jacket	CFC/silicone-free	CFC/halogen/silicone-free IEC 60754-1/DIN VDE 0472-815
Oil resistance	EN 60811-2-1 (mineral oil only)	EN 60811-2-1
Outer jacket	PVC DESINA color orange RAL 2003	PUR, HD22.10 S2 (VDE 0282, Part 10) DESINA color orange RAL 2003
Flame-retardant	EN 60332-1-1 to 1-3	EN 60332-1-1 to 1-3

Degree of protection of the pre-assembled power cables and their extensions when closed and inserted: IP67.

¹⁾ The respective registration number is printed on the cable jacket (only applies to power cables).

²⁾ The File No. is printed on the cable jacket.

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Power cables for SINAMICS S120

Power cables for SIMOTICS S-1FT7/-1FK7/ SIMOTICS M-1PH8 motors with full-thread connector

Selection and ordering data (continued)

**For SIMOTICS S-1FT7 motors without holding brake/SIMOTICS S-1FK7 motors without holding brake/
SIMOTICS M-1PH808/-1PH810/-1PH813 motors with full-thread connector on SINAMICS S120 Motor Modules
in booksize compact format and Power Modules**

Connection method, Power Module end	Number of cores x cross-section mm ²	Connector size, motor end	Pre-assembled cable without brake cores	Cable sold by the meter ¹⁾ without brake cores	D_{max}		Weight (without connector)		Smallest perm. bending radius ²⁾	
			Order No.	Order No.	6FX5 mm (in)	6FX8 mm (in)	6FX5 kg/m (lb/ft)	6FX8 kg/m (lb/ft)	6FX5 mm (in)	6FX8 mm (in)
Exposed core ends	4 × 1.5	1	6FX002-5CG01-....	6FX008-1BB11-....	8.4 (0.33)	9.5 (0.37)	0.12 (0.08)	0.15 (0.10)	155 (6.10)	75 (2.95)
		1.5	6FX002-5CG21-....							
	4 × 2.5	1	6FX002-5CG11-....	6FX008-1BB21-....	10.0 (0.39)	11.0 (0.43)	0.21 (0.14)	0.20 (0.13)	180 (7.09)	90 (3.54)
		1.5	6FX002-5CG31-....							
	4 × 4	1.5	6FX002-5CG41-....	6FX008-1BB31-....	11.4 (0.45)	12.3 (0.48)	0.27 (0.18)	0.27 (0.18)	210 (8.27)	100 (3.94)
	4 × 6	1.5	6FX002-5CG51-....	6FX008-1BB41-....	13.6 (0.54)	14.9 (0.59)	0.37 (0.25)	0.41 (0.28)	245 (9.65)	120 (4.72)
	4 × 10	1.5	6FX002-5CG61-....	6FX008-1BB51-....	20.0 (0.79)	18.2 (0.72)	0.73 (0.49)	0.62 (0.42)	360 (14.17)	140 (5.51)
		3	6FX002-5CG13-....							
	4 × 16	3	6FX002-5CG23-....	6FX008-1BB61-....	24.2 (0.95)	22.3 (0.88)	1.10 (0.74)	1.01 (0.68)	440 (17.32)	170 (6.69)
MOTION-CONNECT 500			5	5						
MOTION-CONNECT 800PLUS			8	8						
Length code										

For SIMOTICS S-1FT7 motors with holding brake/SIMOTICS S-1FK7 motors with holding brake and with full-thread connector on SINAMICS S120 Motor Modules in booksize compact format and Power Modules

Connection method, Power Module end	Number of cores x cross-section mm ²	Connector size, motor end	Pre-assembled cable with brake cores	Cable sold by the meter ¹⁾ with brake cores	D_{max}		Weight (without connector)		Smallest perm. bending radius ²⁾	
			Order No.	Order No.	6FX5 mm (in)	6FX8 mm (in)	6FX5 kg/m (lb/ft)	6FX8 kg/m (lb/ft)	6FX5 mm (in)	6FX8 mm (in)
Exposed core ends	4 × 1.5+2 × 1.5	0.5	6FX5002-5DA30-....	6FX5008-1BA11-....	10.8 (0.43)	—	0.22 (0.15)	—	195 (7.68)	—
		1	6FX002-5DG01-....	6FX008-1BA11-....	10.8 (0.43)	12.0 (0.47)	0.22 (0.15)	0.23 (0.16)	195 (7.68)	90 (3.54)
		1.5	6FX002-5DG21-....							
	4 × 2.5+2 × 1.5	1	6FX002-5DG11-....	6FX008-1BA21-....	12.4 (0.49)	13.8 (0.54)	0.25 (0.17)	0.30 (0.20)	225 (8.86)	105 (4.13)
		1.5	6FX002-5DG31-....							
	4 × 4+2 × 1.5	1.5	6FX002-5DG41-....	6FX008-1BA31-....	14.0 (0.55)	15.2 (0.60)	0.35 (0.24)	0.38 (0.26)	255 (10.04)	115 (4.53)
	4 × 6+2 × 1.5	1.5	6FX002-5DG51-....	6FX008-1BA41-....	16.1 (0.63)	17.3 (0.68)	0.49 (0.33)	0.50 (0.34)	290 (11.42)	130 (5.12)
	4 × 10+2 × 1.5	1.5	6FX002-5DG61-....	6FX008-1BA51-....	21.7 (0.85)	20.1 (0.79)	0.81 (0.54)	0.71 (0.48)	395 (15.55)	150 (5.91)
		3	6FX002-5DG13-....							
	4 × 16+2 × 1.5	3	6FX002-5DG23-....	6FX008-1BA61-....	25.0 (0.98)	23.8 (0.94)	1.12 (0.75)	1.03 (0.69)	450 (17.72)	180 (7.09)
	4 × 25+2 × 1.5	3	6FX002-5DG33-....	6FX008-1BA25-....	29.4 (1.16)	27.6 (1.09)	1.62 (1.09)	1.47 (0.99)	530 (20.87)	280 (11.02)
	4 × 35+2 × 1.5	3	6FX002-5DG43-....	6FX008-1BA35-....	32.6 (1.28)	31.9 (1.26)	2.06 (1.38)	1.92 (1.29)	590 (23.23)	320 (12.60)
	4 × 50+2 × 1.5	3	6FX002-5DG53-....	6FX008-1BA50-....	38.0 (1.50)	35.0 (1.38)	3.04 (2.04)	2.56 (1.72)	685 (26.97)	350 (13.78)
MOTION-CONNECT 500			5	5						
MOTION-CONNECT 800PLUS			8	8						
Length code										

¹⁾ Note type of delivery.

²⁾ Valid for installation in a cable carrier.

MOTION-CONNECT connection systems

Order number code

Length code

Overview

Data position of the Order No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
MOTION-CONNECT 500	6	F	X	5	0	0	8	-	1	B	.	.	.	-	.	.	.
MOTION-CONNECT 800PLUS	6	F	X	8	0	0	8	-	1	B	.	.	.	-	.	.	.
											B						
Power cable without brake cores, sold by the meter																	
Power cable with brake cores, sold by the meter											A						
No. of cores and cross-sections																	
Length code																	
Units of 10 cm (3.94 in) or 1 meter (3.28 ft) or in fixed lengths																	

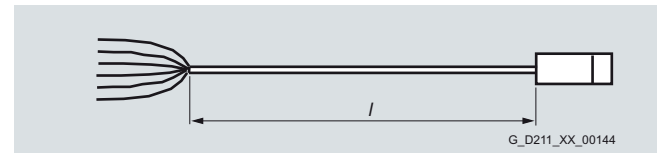
Overview

Description	Order No. supplement
Length code for pre-assembled cables	6FX.0.2-.....- ■ ■ ■ ■
0 m	1
100 m (328 ft)	2
200 m (656 ft)	3
0 m	A
10 m (32.8 ft)	B
20 m (65.6 ft)	C
30 m (98.4 ft)	D
40 m (131 ft)	E
50 m (164 ft)	F
60 m (197 ft)	G
70 m (230 ft)	H
80 m (262 ft)	J
90 m (295 ft)	K
0 m	A
1 m (3.28 ft)	B
2 m (6.56 ft)	C
3 m (9.84 ft)	D
4 m (13.1 ft)	E
5 m (16.4 ft)	F
6 m (19.7 ft)	G
7 m (22.9 ft)	H
8 m (26.3 ft)	J
9 m (29.5 ft)	K
0 m	0
0.1 m (3.94 in)	1
0.2 m (7.87 in)	2
0.3 m (11.81 in)	3
0.4 m (15.75 in)	4
0.5 m (19.96 in)	5
0.6 m (23.62 in)	6
0.7 m (27.56 in)	7
0.8 m (31.5 in)	8
Examples:	1.0 m (3.28 ft): 1 A B 0
	2.2 m (7.22 ft): 1 A C 2
	8.0 m (26.3 ft): 1 A J 0
	299.0 m (981 ft): 3 K K 0

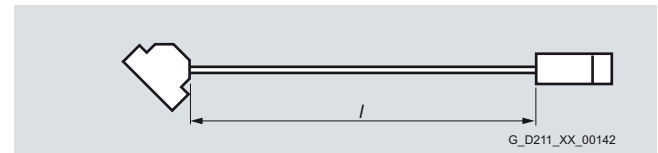
Description	Order No. supplement
Length code for power and signal cables, sold by the meter¹⁾	6FX.008-.....- ■ ■ A 0
50 m (164 ft)	1 F
100 m (328 ft)	2 A
200 m (656 ft)	3 A
500 m (1640 ft)	6 A

More information

Definition of lengths for pre-assembled cables



Cable with exposed core ends and pre-assembled connector



Cable with pre-assembled connectors at both ends

Tolerances:

- Cable lengths up to 10 m (32.8 ft): $\pm 2\%$
- Cable lengths of 10 m (32.8 ft) and longer: $\pm 1\%$

¹⁾ Note type of delivery.