Technical specifications (continued)

Signal cables	MOTION-CONNECT 500 6FX500.-.....-....	MOTION-CONNECT 800PLUS 6FX800.-.....-....
Approvals, according to		
• cURus or UR/CSA	UL758-CSA-C22.2-N.210.2-M90	UL758-CSA-C22.2-N.210.2-M90
• UR-CSA File No.[1]	Yes	Yes
• RoHS conformity	Yes	Yes
Rated voltage according to EN 50395	30 V	30 V
Test voltage, rms	500 V	500 V
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	60 mm (2.36 in)	4 × D_{max}
• Flexible installation	100 mm (3.94 in)	70 mm (2.75 in)
Torsional stress	Absolute 30°/m	Absolute 30°/m
Bending	2 million	10 million
Traversing velocity	180 m/min (591 ft/min)	Up to 300 m/min (984 ft/min)
Acceleration	5 m/s^2 (16.41 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 green RAL 6018	PUR, HD22.10 S2 (VDE 0282, Part 10) DESINA color green RAL 6018
Flame-retardant	EN 60332-1-1 to 1-3	EN 60332-1-1 to 1-3

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

[1] The File No. is printed on the cable jacket.

Selection and ordering data

Pre-assembled signal cables for motors with full-thread connector

Encoder system	Motor type SIMOTICS	Connection via	Length, max. m (ft)	D_{max} mm (in)	Degree of protection Connector	Basic cable Order No.	Extension Order No.
Incremental encoder sin/cos 1 V_{pp} 2048 S/R with C and D tracks	M-1PH8/T-1FW3	SMC20	100 (328)	9.8 (0.39)	IP20/IP67	**6FX■002-2CA31-....**	**6FX■002-2CA34-....**
Incremental encoder sin/cos 1 V_{pp} 256 and 512 S/R without C and D tracks	M-1PH8	SMC20	50 (164)	9.2 (0.36)	IP20/IP67	**6FX8002-2CA80-....**	**6FX■002-2CA34-....**
HTL incremental encoder	M-1PH8	SMC30	300 (984)[1]	9.3 (0.37)	IP20/IP67	**6FX■002-2AH00-....**	**6FX■002-2AH04-....**
HTL incremental encoder	M-1PH8	CU310-2/ D410-2	100 (328)	9.3 (0.37)	IP20/IP67	**6FX■002-2AH11-....**	–
Incremental encoder sin/cos 1 V_{pp} without C and D tracks 6FX2001-3		SMC20	50 (164)	9.3 (0.37)	IP20/IP67	**6FX■002-2CG00-....**	**6FX■002-2CB54-....**
HTL incremental encoder 24 V DC 6FX2001-4		SMC30	100 (328)	9.3 (0.37)	–/IP67	**6FX5002-2CA12-....**	–
TTL incremental encoder RS 422 6FX2001-2							
• 5 V DC		SMC30	100 (328)	9.3 (0.37)	IP20/IP67	**6FX■002-2CR00-....**	**6FX■002-2CB54-....**
• 24 V DC		SMC30	100 (328)	9.3 (0.37)	IP20/IP67	**6FX■002-2CD24-....**	**6FX■002-2CB54-....**
Incremental encoder sin/cos 1 V_{pp} 5 V DC without C and D tracks		SME20	3 (9.84)[2]	9.3 (0.37)	IP67/IP67	**6FX■002-2CB54-....**	–
Direct incremental encoder sin/cos 1 V_{pp}	L-1FN3/-1FN6/ T-1FW6	SME120	3 (9.84)[2]	9.3 (0.37)	IP67/IP67	**6FX8002-2CB54-....**	–
MOTION-CONNECT 500						**5**	**5**
MOTION-CONNECT 800PLUS						**8**	**8**
Length code						**....**	**....**

Encoder system	Motor type SIMOTICS	Connection via	Length, max. m (ft)	D_{max} mm (in)	Degree of protection Connector	Basic cable[3] Order No.	Adapter cable[3] Order No.
Temperature sensor	L-1FN3100/ -1FN3150[4]	SME120/ SME125	10 (32.8)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL10-....**	**6FX7002-2SL01-....**
Temperature sensor	L-1FN3300 ... L-1FN3900[4]	SME120/ SME125	10 (32.8)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL10-....**	**6FX7002-2SL02-....**
Temperature sensor	L-1FN6/T-1FW6	SME120/ SME125	10 (32.8)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL10-....**	–
Temperature sensor	L-1FN3100/ -1FN3150[4]	TM120	100 (328)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL20-....**	**6FX7002-2SL01-....**
Temperature sensor	L-1FN3300 ... L-1FN3900[4]	TM120	100 (328)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL20-....**	**6FX7002-2SL02-....**
Temperature sensor	L-1FN6/T-1FW6	TM120	100 (328)	11.9 (0.47)	IP67/IP67	**6FX7002-2SL20-....**	–
Length code						**....**	**....**

The combinations of signal cable extensions shown are only provided by way of example.

The maximum specified cable length (basic cable and extensions) must not be exceeded. The total maximum length is reduced by 2 m (6.56 ft) for each interruption point.

[1] With evaluation of difference signals A*, A, B*, B, otherwise ≤ 100 m (328 ft).
[2] Up to 10 m (32.8 ft) possible, depending on the current consumption of the encoder.
[3] The smallest permissible bending radius (in motion) for signal cables 6FX7002-2SL.. is 85 mm (3.35 in).
[4] Continuous load version.

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**	**.**	**.**	**.**	**–**	**.**	**.**	**.**	**.**

Power cable without brake cores, sold by the meter	**B**
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

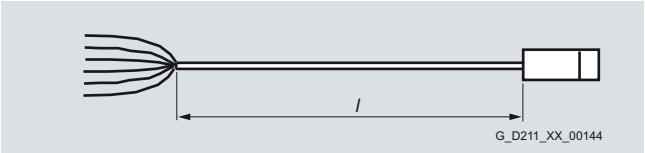
Overview

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

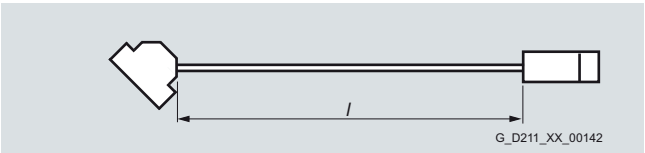
Description	Order No. supplement				
Length code for power and signal cables, sold by the meter[1)]					
	6FX.008-.....-	■	■	**A**	**0**
50 m (164 ft)	**1**	**F**		
100 m (328 ft)	**2**	**A**		
200 m (656 ft)	**3**	**A**		
500 m (1640 ft)	**6**	**A**		

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): ± 2 %
- Cable lengths of 10 m (32.8 ft) and longer: ± 1 %

[1)] Note type of delivery.