

**SERVO LK SMS FX8PLUS servo motor
cable with signal**
**DB0027790EN
valid from: 06.09.2010**
Application

LAPP servo motor cables according to Siemens®* (see footnote) Standard **FX8008 PLUS** are part of a new generation of very highly flexible screened Servo motor- cables (P/Ns **0027790** to **0027798**), with PUR outer sheath and UL/CSA approvals. They are suitable in **very high dynamically operating power chain applications** under accelerations up to **50m/s²** as well as for static use. Lapp FX8PLUS Servo motor cables are made in accordance to Siemens Motion Connect* typically used for interconnection in between servo motors and servo drive controllers of Siemens SINAMICS* drive systems. Typical kind of application: In power chains of **modern high speed/high efficient machine tools**, production plants, car body presses, transfer lines...

USA: According NFPA 79 Ed. 2007 AWM is accepted only, when part of a listed assembly. Cables can be used in dry and damp areas and also outdoor provided the recommended temperatures of use are respected. Usage of these cables in moving cable carriers, respectively on motor drum guidance or under a strain of more than 20 N/mm² is not allowed. LK SMS-FX8PLUS cables are increased oil-resistant, halogen-free and free of lacquer destructive substances ("free of silicones").

Technical Data
Power – element

Conductor	Stranded copper wires acc. IEC 60228 Cl. 6 /VDE 0295 Cl. 6
Insulation	PP Polypropylene
Conductor ID- Code	Black with white Alphanumeric marking: Conductor sizes 1.5 -2.5mm ² : V/L2 U/L1/C/L+ W/L3/D/L- Greenyellow Conductor sizes: 4 – 50mm ² : U/L1/C/L+ V/L2 W/L3/D/L- Greenyellow

Signal pair element

Conductor	Stranded copper wires acc. IEC 60228 Cl. 6 /VDE 0295 Cl. 6
Insulation	PP Polypropylene
Conductor ID- Code	Black, white
Pair shield	Tinned copper braid, coverage ≥ 80 %
Cable make-up	3 + PE power conductors & 1 signal pair, associated by fillers, twisted together to form a round cable
Overall shield	Tinned copper braid, coverage ≥ 80 %
Jacket	TMPU Polyurethane DIN EN 50363-10-2 Orange (~RAL 2003)
Nominal Voltage	IEC/VDE Power 0.6/1kV, Signal pair: 24 V

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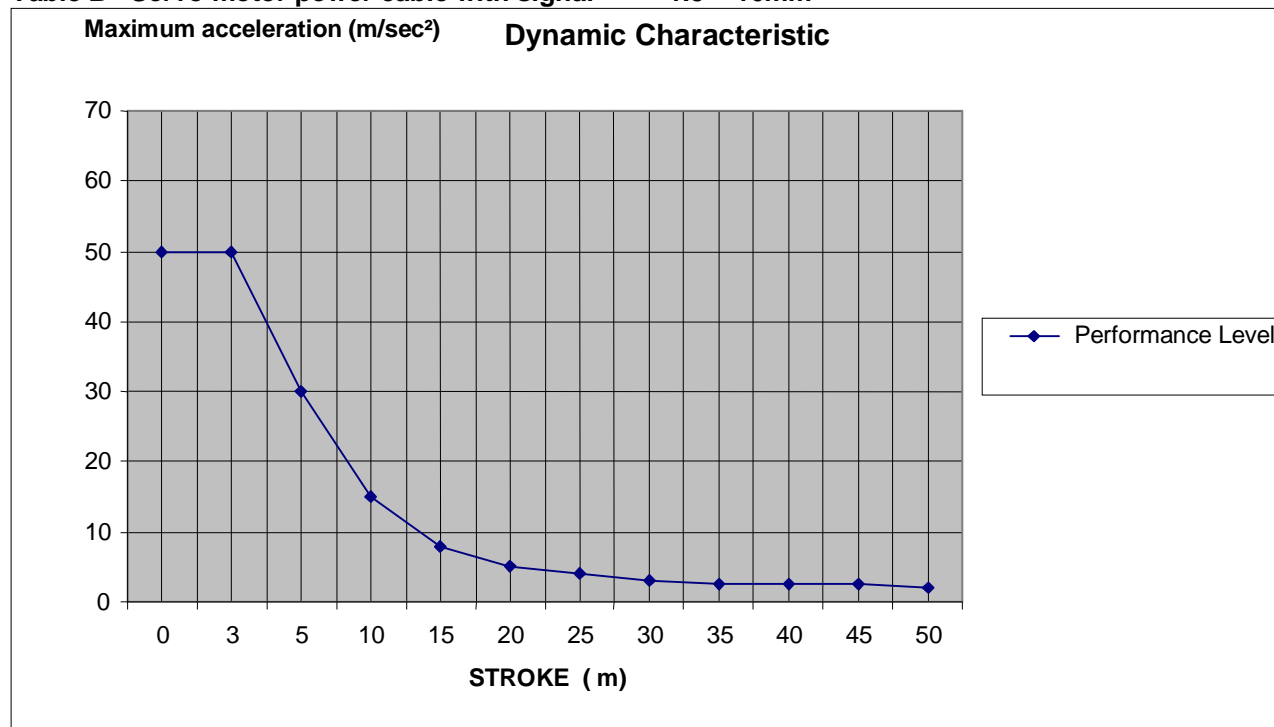
Operating voltage	UL & CSA, power & signal 1000V
Test voltage	Power: 4kVrms x 5min between all Conductors as well as all shields.
Insulation resistance	≥ 2500 MOhm x km, resp. 10MOhm x km at 80°C
Capacitance (800-1200Hz)	1.5 - 6mm ² : max. 150 pF/m 10 - 50mm ² : max. 300pF/m
Shield transfer impedance	Size 1.5 to 4mm ² with signals: 0.01 MHz to 2 MHz: ≤ 20 mOhm/m 4 MHz: ≤ 40 mOhm/m 10 MHz: ≤ 100 mOhm/m 30 MHz: ≤ 300 mOhm/m Size 6 to 16mm ² with signals: 0.01 MHz to 1 MHz: ≤ 10 mOhm/m 2 MHz ≤ 20 mOhm/m 4 MHz ≤ 40 mOhm/m 10 MHz ≤ 100 mOhm/m 30 MHz ≤ 300 mOhm/m Size 25 to 50mm ² with signals: 0.01 MHz to 0.5MHz: ≤ 5 mOhm/m 1 MHz ≤ 10 mOhm/m 2 MHz ≤ 20 mOhm/m 4 MHz ≤ 40 mOhm/m 10 MHz ≤ 100 mOhm/m 30 MHz ≤ 300 mOhm/m
Temperature range:	Operating: - 20°C up to +60°C Static/storage. - 50°C up to +80°C Max. allowable on conductors: +80°C
<u>Dynamic performance:</u>	
Pulling force (Dynamic)	≤ 20 N/mm ²
Pulling force (Static)	≤ 50 N/mm ²
Max. Acceleration:	1.5mm ² - 16mm ² see Table B 25mm ² - 50mm ² see Table C
Max. Speed	5m/s respectively 300m/min
Max. Length horizontal of signal cables	1,5mm ² - 16mm ² see Table B 25mm ² – 50mm ² see Table C
Min. bending radii	Dynamic applications: Size 1,5mm ² - 16mm ² : 7.5 x cables outer diameter Size 25mm ² - 50mm ² : 10 x cables outer diameter Static applications: 4 x cables outer diameter
Max torsion load	+/- 30° /m

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Bends	10.000.000
Oil resistance	DIN EN 50363-10-2
Halogen free	VDE0472-815
Flame resistance	IEC/ EN 60332-1-2 IEC/EN 60332-1-3; FT1, VW-1
Approvals:	USA: UL AWM rec. Style 21223, 80°C, 1000V, VW-1 Canada: CSA AWM I/II A/B, 80°C, 1000V, FT1 Europe: VDE registrated. VDE Reg. Nb: see outer sheath imprint
Conformities:	DESINA, RoHS, CE

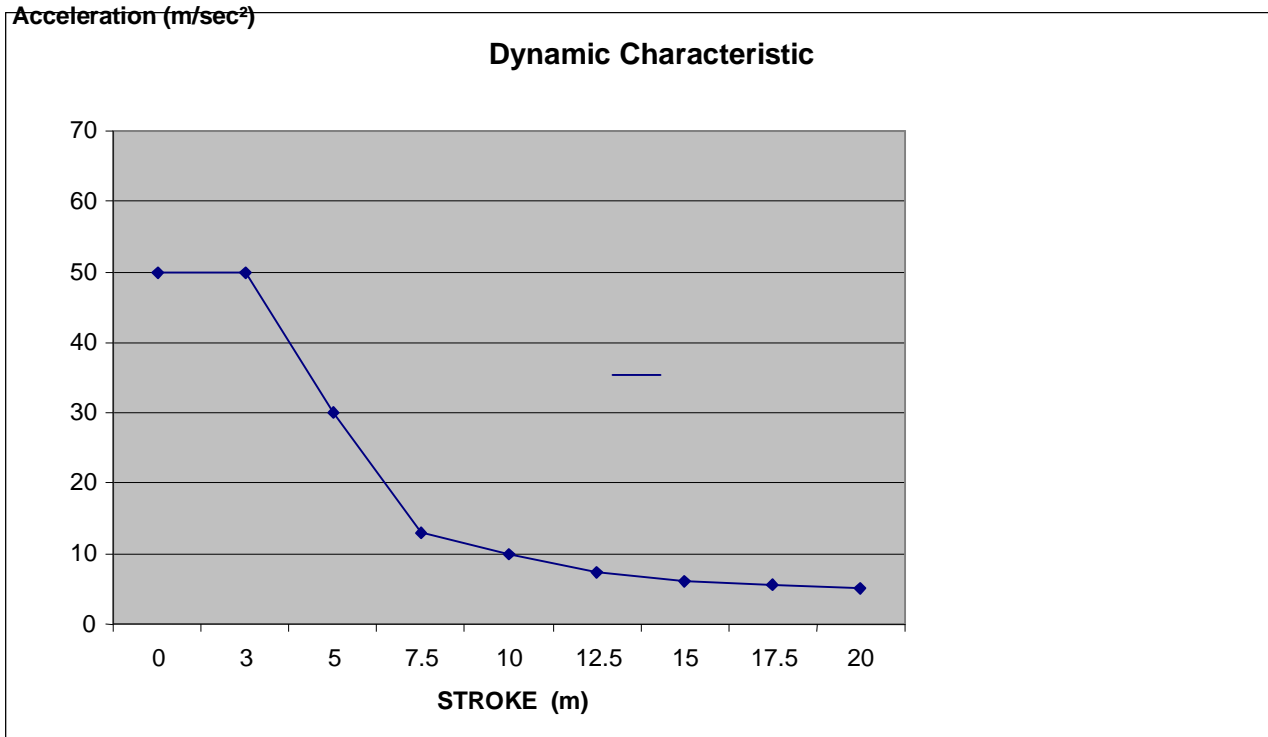
Table A

Part Number	Product name	Nominal diameter in mm		
		above insulated conductor approx.	above overall shield approx.	above outer jacket approx.
0027790	SERVO LK SMS FX8PLUS-1BA11/4G1.5+2x1.5	2.1/2.1	9.4	11.6 +/- 0.4
0027791	SERVO LK SMS FX8PLUS-1BA21/4G2.5+2x1.5	2.4/2.1	10.9	13.4 +/- 0.4
0027792	SERVO LK SMS FX8PLUS-1BA31/4G4+2x1.5	3.0/2.1	12.3	14.8 +/- 0.4
0027793	SERVO LK SMS FX8PLUS-1BA41/4G6+2x1.5	3.6/2.1	14.1	16.8 +/- 0.5
0027794	SERVO LK SMS FX8PLUS-1BA51/10+2x1.5	4.4/2.1	16.5	19.4 +/- 0.7
0027795	SERVO LK SMS FX8PLUS-1BA61/4G16+2x1.5	5.6/2.1	19.7	23.1 +/- 0.7
0027796	SERVO LK SMS FX8PLUS-1BA25/4G25+2x1.5	7.1/2.1	23.2	26.6 +/- 1.0
0027797	SERVO LK SMS FX8PLUS-1BA35/4G35+2x1.5	8.6/2.1	26.8	30.9 +/- 1.0
0027798	SERVO LK SMS FX8PLUS-1BA50/4G50+2x1.5	9.6/2.1	29.9	34.0 +/- 1.0

Table B Servo motor power cable with signal 1.5 – 16mm²**Table C Servo motor & power cable with signal 25 – 50mm²**

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—◆— Performance level

* SIEMENS, SINAMICS, MOTION CONNECT, DRIVE CLIQ and Siemens part designations (i.e. 6FX5002/5008, 6FX7002/7008, 6FX8002/8008, 6FX8002/8008-Plus) are registered trademarks of Siemens AG and for comparing purpose only.