



Servo Motor Cables



Standards: EN 50170-8-2, IEC 61784; IEC61158



Ambient installation T°
C range
-40 + 90 °C



Operating temp.
-30 + 80 °C



Storage temperature
range
-20 + 70 °C



Flame retardant
IEC 60332-1



Smoke density

Application

Servo motor cables are used to connect servo drives (VFD/inverters) to servo motors and their feedback devices(encoder/resolver). They are designed for high-dynamic motion systems and EMC-sensitive industrial environments. These cables are also used for: CNC machine tools, Robotics, Pick-and-place machines, Packaging machines, Assembly lines, Conveyors and intralogistics systems, in any machine with moving servo axes.

Main advantage over a standard power cable are: Servo drives generate high-frequency switching noise. A normal power cable can cause: EMI problems, Encoder signal errors, Motor bearing currents, Drive trips, Shorter motor life. Servo motor cables include : 360° shielding, Low capacitance design, Symetrical conductor geometry, High flex life for cable chains, Oil and chemical resistance.

They are especially suitable for increased requirements (Extended Line) in power chains and in permanently moved machine parts. They are suitable for linear, automated movements. The maximum tensile load is 15 N/mm² of conductor crosssection during installation and operation. Compulsory guidance is not

permitted. The screening braid protects against interference from electrical fields, the data pairs resp. triplet are additionally screened.

Benefits of these Servo motor cables are: Multi-standard certification reduces part varieties and saves costs, Allows much faster speed and accelerations which increases the economic efficiency of the machines, Increased durability under harsh conditions thanks to robust PUR outer sheath and Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media.

Temperature limit conditions:

• Ambient installation temperature, range:	from -40 °C to +90°C
• Operating temperature, range:	from -30 °C to +80°C

Mechanical properties:

Minimum internal bending radius: (D = cable outer diameter)	
fixed:	7.5 × outer diameter
fixed installation :	4 x outer diameter
• packaging: 500m on wooden reel	

Flame resistance:

• the cable is self-extinguishing according to IEC 60332-1
- halogen-free according to IEC 60754-1/2; EN 60754-1
- flame retardant acc. to IEC 60332-1-2 resp. EN 60332-1-2
- non-corrosive combustion gases according to IEC 60754-1/2
- minimal smoke emission according to IEC 61034-2

Cable construction

Conductor material:	Fine stranded bare copper class 6 (extra flexible)
Core Insulation:	TPE (Thermoplastic Elastomer) PP (Polypropylene)
Screen:	Control cores in pairs wrapped with tinned copper wire braid
Overall screening:	tinned copper wire braid Coverage approx. 85%
Outer sheath:	Polyurethane (PUR) Halogen free according to EN 60754-1 Flame retardant according to IEC 60332-1-2 UV resistant
Core identification	Power cores: Black cores with white alphanumeric labelling U/L1/C/L+; V/L2; W/L3/D/L-; GN/YE ground Conductor. Control cores: With 1 control pair: black, white With 2 control pairs: black cores with white numbers 5-8 acc. to EN 50334 control pairs with different conductor cross-section: 1 mm²: black cores with white numbers 5-6 1.5 mm²: black cores with white numbers 7-8 Orange (RAL 2003)
Sheath colour	Oil resistant according to EN 50363-10-2 UV-resistance: acc. to EN 50618 ; EN 50620 Uo/U = 300/500 V.
Voltage rating	3 Kv
Test voltage:	

Electrical characteristics at 20°C ± 5°C

Insulation resistance:

≥ 20 MΩ x km

Coupling resistance

max. 250 Ω x km

Nominal Voltage

U_o/U 600/1000 V

Test voltage at 50 Hz

4000 V AC

Transfer impedance at 30 MHz:

max. 250 MΩ x km

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Dimensions:

Cable type	Outer diameter mm	weight kg/km
4 x 1.5	8.6	130-132
4 x 2.5	9.8	181-188
4 x 0.75 + (2 x 0.5)	9.4	140-150
4 x 1 + (2 x 0.5)	10.1	152-160
4 x 1 + (2 x 0.75)	10.5	160-168
4 x 1 + (2 x 1.0)	10.8	170-172
4 x 1.5 + (2 x 0.5)	11.0	175-180
4 x 1,5 + (2 x 1.0)	11.3	192-198
4 x 1,5 + (3 x 1)	11.5	196-204
4 x 1.5 + (2 x 1.5)	11.2	245-250
4 x 1.5 + (4 x 0.5)	11.4	206-212
4 x 2.5 + (2 x 0.5)	11.8	226-234



The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.