Servo cables

FMV610 Servo cables

- PVC outer jacket
- Shielded
- Oil-resistant
- Flame resistance

Dynamic Information

Min. bending radius	Moving in cable carriers	7.5 x d
	Fexible moving	6 x d
	Fixed installation	4 x d
Temperature	Moving in cable carriers	+5°C to +70°C
	Fexible moving	-5°C to +70°C
	Fixed installation	-15°C to +70°C
v max.	Unsupported	10 m/s
	Gliding	5 m/s
a max.	80 m/s^2	
Travel distance	Unsupported travels and up to 100 m for gliding applications	

Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
Conductor insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Conductor construction	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
Color code	Power conductors: Black with white numbers, one conductor green-yellow. 1: U / L1 / C / L+ 2: V / L2 3: W / L3 / D / L- 1 Control pair: Black with white numbers, 4/ 5 2 Control pairs: Black with white numbers, 5/6/7/8
Element shield	Bending-resistant braiding made of tinned copper wires.
Inner jacket	PVC mixture adapted to suit the requirements in cable carriers.
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Outer jacket	Low adhesion mixture on the basis of PVC, adapted to suit the requirements in cable carriers. Color: Green RAL 6005

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Electrical Information

Nominal voltage	U_0/U: 600/1000 V（following VDE0298-3）
Test voltage	4000 V（following EN50395）

Properties and approvals

UV-resistance	Medium
Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS)，bio-oil-resistant (following VDMA24568, tested by SGS)
Flame resistance	According to IEC 60332-1-2、VW-1、FT1
REACH	Accordding to the regulation (EC) No. 1907/2006 (REACH)
EAC	Certificate No. KG 417/043.CN.02.00249
Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
Cleanroom	Following ISO 14644-1
CE	Following 2014/35/EU
UL	Following UL2570，1000V，80℃

Guaranteed service life

Double strokes	5 million times	7.5 million times	10 million times
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

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Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
1 Control pair shielded				
FMV610.07.05.02.01	(4G0.75+(2x0.5)C)C	11	76	159
FMV610.15.15.02.01	(4G1.5+(2x1.5)C)C	13	145	256
FMV610.25.15.02.01	(4G2.5+(2x1.5)C)C	14.5	199	330
FMV610.40.15.02.01	(4G4.0+(2x1.5)C)C	16	256	406
FMV610.60.15.02.01	(4G6.0+(2x1.5)C)C	18	343	546
FMV610.100.15.02.01	(4G10+(2x1.5)C)C	21.5	536	828
2 Control pair shielded				
FMV610.07.03.02.02	(4G0.75+2x(2x0.34)C)C	12.5	103	208
FMV610.10.07.02.02	(4G1.0+2x(2x0.75)C)C	13.5	148	269
FMV610.15.07.02.02	(4G1.5+2x(2x0.75)C)C	14.5	167	309
FMV610.25.15.02.02	(4G2.5+2x(2x1.5)C)C	17	254	434
FMV610.40.15.02.02	(4G4.0+2x(2x1.5)C)C	18	308	515
FMV610.60.15.02.02	(4G6.0+2x(2x1.5)C)C	21	412	695
FMV610.100.15.02.02	(4G10+2x(2x1.5)C)C	23	592	925
FMV610.160.15.02.02	(4G16+2x(2x1.5)C)C	26.5	878	1287

Note: The outer diameters are reference values.
G: With green-yellow earth core
x: Without earth core

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FMV910 Servo cables

- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame resistance
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Dynamic Information

Min. bending radius	Moving in cable carriers	10 x d
	Fexible moving	8 x d
	Fixed installation	5 x d
Temperature	Moving in cable carriers	-25°C to +80°C
	Fexible moving	-40°C to +80°C
	Fixed installation	-50°C to +80°C
v max.	Unsupported	10 m/s
	Gliding	2 m/s
a max.	50 m/s^2	
Travel distance	Unsupported travels and up to 10 m for gliding applications	

Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
Conductor insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Conductor construction	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
Color code	Power conductors: Black with white numbers, one conductor green-yellow. 1: U / L1 / C / L+ 2: V / L2 3: W / L3 / D / L- 1 Control pair: Black with white numbers, 4/ 5 2 Control pairs: Black with white numbers, 5/6/7/8
Element shield	Bending-resistant braiding made of tinned copper wires.
Intermediate layer	Foil taping over the outer layer.
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
Outer jacket	Low-adhesion, highly abrasion resistant PUR mixture, adapted to suit the requirements in cable carriers. Color: Pink orange RAL 2003

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Servo cables

Electrical Information

Nominal voltage	U_0/U: 600/1000 V（following VDE0298-3）
Test voltage	4000 V（following EN50395）

Properties and approvals

UV-resistance	Medium
Hydrolysis-resistance	High
Cold-resistant	-50℃
Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS)，bio-oil-resistant (following VDMA24568, tested by SGS)
Flame resistance	According to IEC 60332-1-2、VW-1、FT1
Halogen-free	Following IEC60754
REACH	Accordding to the regulation (EC) No. 1907/2006 (REACH)
EAC	Certificate No. KG 417/043.CN.02.00249
Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
Cleanroom	Following ISO 14644-1
CE	Following 2014/35/EU
UL	Following UL20234，1000V，80℃

Guaranteed service life

Double strokes	5 million times	7.5 million times	10 million times
Temperature, from/to [℃]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	12.5	13.5	14.5
-15/+70	10	11	12
+70/+80	12.5	13.5	14.5

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Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
1 Control pair shielded				
FMV910.15.15.02.01	(4G1.5+(2x1.5)C)C	12.5	154	247
FMV910.25.15.02.01	(4G2.5+(2x1.5)C)C	14	210	301
FMV910.40.15.02.01	(4G4.0+(2x1.5C)C	15	255	392
FMV910.60.15.02.01	(4G6.0+(2x1.5)C)C	16.5	343	491
FMV910.100.15.02.01	(4G10+(2x1.5)C)C	21	526	788
FMV910.160.15.02.01	(4G16+(2x1.5)C)C	24	771	1126
2 Control pair shielded				
FMV910.07.03.02.02	(4G0.75+2x(2x0.34)C)C	12	105	192
FMV910.10.07.02.02	(4G1.0+2x(2x0.75)C)C	13	135	245
FMV910.15.07.02.02	(4G1.5+2x(2x0.75)C)C	13.5	161	280
FMV910.25.15.02.02	(4G2.5+2x(2x1.5)C)C	16	244	384
FMV910.40.15.02.02	(4G4.0+2x(2x1.5)C)C	17	309	477
FMV910.60.15.02.02	(4G6.0+2x(2x1.5)C)C	19	403	600
FMV910.100.15.02.02	(4G10+2x(2x1.5)C)C	22.5	576	887
FMV910.160.15.02.02	(4G16+2x(2x1.5)C)C	26	815	1206
FMV910.250.15.02.02	(4G25+2x(2x1.5)C)C	28.5	1223	1686
Without control pair				
FMV910.07.04	(4G0.75)C	8	45	95
FMV910.15.04	(4G1.5)C	10	86	140
FMV910.25.04	(4G2.5)C	115	146	210
FMV910.40.04	(4G4.0)C	13	195	296
FMV910.60.04	(4G6.0)C	15	289	416
FMV910.100.04	(4G10)C	18	449	644
FMV910.160.04	(4G16)C	22	698	997
FMV910.250.04	(4G25)C	25.5	1045	1384
FMV910.350.04	(4G35)C	33	1520	2111
Spindle cable/Single core				
FMV910.60.01	(1x6.0)C	7.5	72	95
FMV910.100.01	(1x10)C	8.5	114	145
FMV910.160.01	(1x16)C	9.5	178	209
FMV910.250.01	(1x25)C	11	269	304
FMV910.350.01	(1x35)C	13	374	419
FMV910.500.01	(1x50)C	15	525	579
FMV910.700.01	(1x70)C	17	751	804

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