CABLE SERIES 155321
Servo Motor - UL AWM recognized - WSOR jacket ("Weld-Slag and Oil-Resistant")
c UL us Style 21939 (80°C / 1000V)

1. CONSTRUCTION DATA

1.1 CONDUCTOR:

Bare copper strand; according to EN 13602 - ETP1; stranding according to DIN VDE 0295, EN60228 Class 6
Stranded lay compliant with UL 758.

1.2 WIRE STRUCTURE:

Signal				
Nominal Section (mm²)	**AWG**	**Stranding (nbr of wires x wire diameter in mm)**	**Diameter of stranded core (mm)**	**Max Resistance Ref. std. IEC 60344 (Ω/km)**
0.75	19	42x0.15	1.20	27.7
1.00	18	52x0.15	1.32	22.4
1.50	16	81x0.15	1.50	14.4
Power				
Nominal Section (mm²)	**AWG**	**Stranding (nbr of wires x wire diameter in mm)**	**Diameter of stranded core (mm)**	**Max Resistance Ref. std. IEC 60344 (Ω/km)**
1.50	16	81x0.15	1.50	14.4
2.50	14	133x0.15	2.10	8.7
4.00	12	78x0.254	2.60	5.2
6.00	10	117x0.254	3.15	3.5

1.3 INSULATION:

Thermoplastic Elastomer compound; Max Insulation resistance >600 GΩxkm (IEC60189-1&IEC60885-1 or EN50289-1-4); nominal hardness 50 Shore D; according to UL758

1.4 INSULATION DIAMETER

Signal		
Nominal section (mm²)	**Nominal Ø (mm)**	**Nominal thickness (mm)**
0.75	1.80	0.30
1.00	2.00	0.34
1.50	2.15	0.32
Power		
Nominal section (mm²)	**Nominal Ø (mm)**	**Nominal thickness (mm)**
1.50	2.35	0.42
2.50	3.00	0.45
4.00	3.60	0.50
6.00	4.50	0.68

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1.5 ASSEMBLY:

1.5.1 Signal Pair

Cores stranded in pairs (one or two).
Each pair is shielded with Tin copper wire (Braid type - nominal optical coverage 85%) and wrapped with tape

1.5.2 Total Assembly

Power Cores and Signal Pair (if present) stranded together, fillers may be used for a better roundness.

1.6 TAPE:

Wrap over assembly

1.7 BRAID SHIELD:

Tin copper wire, nominal optical coverage 85%.

1.8 TAPE:

Wrap over shield

1.9 JACKET:

Special compound Polyurethane based, nominal hardness 78 Shore A; Silicone, Pb,Cd,Hg & FCKW free; according to UL758.
For overall diameter, jacket and cores colors refer to Annex #1

2. TECHNICAL DATA

2.1 ELECTRICAL:

Voltage rating	1000 Vrms (for electronic use)
Voltage test on core (Power)	3000 Vrms x 1 min. (IEC60885-1)
Voltage test on core (Brake)	3000 Vrms x 1 min. (IEC60885-1)

2.2 TEMPERATURE:

Temperature range (fixed)	-40 °C to +90°C (3˙000h ISO6722 pending)
Temperature range (flex)	-25°C to +80°C (free motion without periodic recurrence and forced guidance)
Temperature range (drag chain)	-5°C to +60°C

2.3 CHEMICAL:

Oil resistance	UL758/UL2556 (4 days @ 100°C - IRM902 oil)
Free of FCKW, Silicone and Pb	yes
Halogen free	no

2.4 PHYSICAL:

UV resistant	yes (UL1581/2556– 300h)
Max installation pulling force	100N
Bending radius (fixed)	>5xOD
Bending radius (flex)	>10xOD
Bending radius (drag chain)	>12xOD (up to 5Mio @ 20°C in freely suspended chain)*
Torsion @ 20°C	optimal recommended ±30°/m *

*Default criterium of the norm-bendings is electrical failure due to conductor breakage or conductor short-circuit. Extreme sheath adhesion is not a default criterium since it cannot be influenced by the cable manufacturer (e.g. through big abrasion between cable and chain, non-suitable chain construction or wrong installation of cable in the chain).

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2.5 FLAME:

UL Vertical Flame Test	pass
UL VW-1, CSA FT-1	pass
IEC 60332-1/2	pass

3. COMPLIANCE

Accordance to:

- 2006/95/CE; 2004/108/CE; 2011/65/CE (RoHS)
- Weld Slag Resistance: yes, S-300 Molex test
- UL/CSA (UL AWM Style 21939, use: external interconnect or internal wiring of electronic equipment)
- NFPA79-2012 circumstances mentioned in Chapter 12

4. PRINTING & PACKAGE

Printing text	Ink-jet type; conform to UL758
Package	available in different packaging sizes *(refer to Annex #1)*

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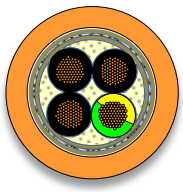
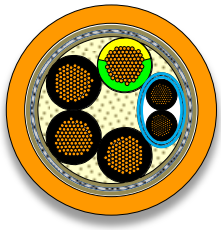
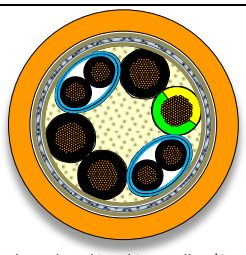
ANNEX 1

mm²	AWG	N° of cond	O.D. (mm)	Jkt color	Pack. size	Packaging composition	Standard order n°	Sketch*
(4G1,5)	(4G AWG16)	4	9,0	Orange	S	1x200m	1553210001	 Black numbered in White + Yellow/Green (see note*)
				Orange	M	1x500m	1553210002	
				Orange	L	1x1000m	1553210003	
(4G2,5)	(4G AWG14)	4	10,6	Orange	S	1x100m	1553210004	
				Orange	M	1x500m	1553210005	
				Orange	L	1x1000m	1553210006	
(4G4,0)	(4G AWG12)	4	12,2	Orange	S	1x100m	1553210007	
				Orange	M	1x500m	1553210008	
				Orange	L	1x1000m	1553210009	
(4G6,0)	(4G AWG10)	4	14,5	Orange	S	1x100m	1553210010	
				Orange	M	1x500m	1553210011	
				Orange	L	1x1000m	1553210012	
(4G1,5+(2x1,5))	(4G AWG16+(2xAWG16))	6 (4+2)	11,1	Orange	S	1x100m	1553211001	 Black numbered in White + Yellow/Green (see note*)
				Orange	M	1x500m	1553211002	
				Orange	L	1x1000m	1553211003	
(4G2,5+(2x1,5))	(4G AWG14+(2xAWG16))	6 (4+2)	12,6	Orange	S	1x100m	1553211004	
				Orange	M	1x500m	1553211005	
				Orange	L	1x1000m	1553211006	
(4G4,0+(2x1,5))	(4G AWG12+(2xAWG16))	6 (4+2)	14,00	Orange	S	1x100m	1553211007	
				Orange	M	1x500m	1553211008	
				Orange	L	1x1000m	1553211009	
(4G6,0+(2x1,5))	(4G AWG10+(2xAWG16))	6 (4+2)	16,20	Orange	S	1x100m	1553211010	
				Orange	M	1x250m	1553211011	
				Orange	L	1x500m	1553211012	
(4G1.5+2x(2x0.75))	(4G AWG16+2x(2xAWG19))	8 (4+2+2)	12,1	Orange	S	1x100m	1553212001	 Black numbered in White + Yellow/Green (see note*)
				Orange	M	1x500m	1553212002	
				Orange	L	1x1000m	1553212003	
(4G2.5+2x(2x1.0))	(4G AWG14+2x(2xAWG18))	8 (4+2+2)	14,1	Orange	S	1x100m	1553212004	
				Orange	M	1x500m	1553212005	
				Orange	L	1x1000m	1553212006	
(4G4+2x(2x1.5))	(4G AWG12+2x(2xAWG16))	8 (4+2+2)	15,8	Orange	S	1x100m	1553212007	
				Orange	M	1x250m	1553212008	
				Orange	L	1x500m	1553212009	
(4G6+2x(2x1.5))	(4G AWG10+2x(2xAWG16))	8 (4+2+2)	17,9	Orange	S	1x100m	1553212010	
				Orange	M	1x250m	1553212011	
				Orange	L	1x500m	1553212012	

*Colour Sequence
for packaging size L: colors clockwise exit drum (as in sketch)
for packaging size S and M; colors counterclockwise

Black Cores (printing is in white)
Power 1st Core: Black printing U/L1/C/L+
2nd Core: Black printing V/L2
3rd Core: Black printing W/L3/D/L-
Yellow/Green core

Signal One signal Pair: Black printing 4 + Black printing 5
Two signal Pairs: 1st Pair = Black printing 5 + Black printing 6
2nd Pair = Black printing 7 + Black printing 8

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