

CABLE SERIES 155321-9xxx
Servo Motor - Feedback Cables - UL AWM recognized
WSOR jacket ("Weld-Slag and Oil-Resistant")
UL US Style 21215 (80°C / 600V)

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 (mm ²)	AWG	Stranding (nbr of wires x wire diameter in mm)	Diameter of stranded core (mm)	Max Resistance Ref. std. IEC 60344 (Ω/km)
0.14	26	19x0.10	0.50	145.8
0.25	24	32x0.10	0.62	85.8
0.38	22	19x0.16	0.80	54.8
Power				
Nominal section (mm ²)	AWG	Stranding (nbr of wires x wire diameter in mm)	Diameter of stranded core (mm)	Max Resistance Ref. std. IEC 60344 (Ω/km)
0.50	21	28x0.15	0.93	42.3
1.00	18	56x0.15	1.30	20.8

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 (mm ²)	Nominal Ø (mm)	Nominal thickness (mm)
0.14	0.90	0.20
0.25	1.10	0.24
0.38	1.20	0.20
Power		
Nominal section (mm ²)	Nominal Ø (mm)	Nominal thickness (mm)
0.50	1.45	0.26
1.00	1.85	0.28

1.5 ASSEMBLY (see Annex #1, #2, #3, #4)

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2 TECHNICAL DATA

2.1 ELECTRICAL:

Voltage rating 600 Vrms
Voltage test on core 2000 Vrms x 1min. (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 50N
Bending radius (fixed) >7,5xOD
Bending radius (flex) >12xOD
Bending radius (drag chain) >15xOD (up to 2Mio @ 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).

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

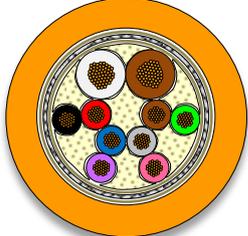
4 PRINTING & PACKAGE

Printing text Ink-jet type; conform to UL758
Package available in different packaging sizes (refer to Annex #1, #2, #3, #4)

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ANNEX 1

(4x2x0.25 + 2x1.00)C

mm ²	AWG	N° of cond	O.D. (mm)	Jkt color	Pack. size	Packaging composition	Standard order n°	Sketch*
(4x2x0,25+2x1,00)C	(4x2xAWG24+2xAWG18)C	10 (8+2)	8,80	Orange	S	1x200m	1553219001	
				Orange	M	1x500m	1553219002	
				Orange	L	1x1000m	1553219003	

*Colour and Sequence
 Colour: **Power**=White-Brown
Signal=(Red-Black)- (Gray-Pink)-(Green-Brown)-(Violet-Blue)
 Sequence: for packaging size L: colors clockwise exit drum (as in sketch)
 for packaging size S and M; colors counterclockwise

Signal pair

Cores stranded in four pairs.

Total assembly

Power Cores and Signal Pairs stranded together, fillers may be used for a better roundness.

Tape

Wrap over assembly.

Braid Shield

Tin copper wire, nominal optical coverage 85%.

Tape

Wrap over shield.

Jacket

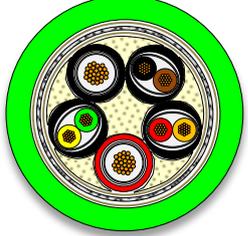
Special compound Polyurethane based, nominal hardness 78 Shore A; Silicone, Pb,Cd,Hg & FCKW free; according to UL758.

For overall diameter, jacket and cores colors refer to table above.

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ANNEX 2

(3x(2x0.14)D + 2x(0.50)D)C

mm ²	AWG	N° of cond	O.D. (mm)	Jkt color	Pack. size	Packaging composition	Standard order n°	Sketch*
(3x(2x0.14)D + 2x(0.50)D)C	(3x(2xAWG26)D + 2x(AWG21)D)C	8 (6+2)	9,00	Green	S	1x200m	1553219004	
				Green	M	1x500m	1553219005	
				Green	L	1x1000m	1553219006	

*Colour and Sequence

Colour: **Power**= Black and Red;

Signal pairs= (Yellow-Green) jacketed in black numbered in white 1
(Black-Brown) jacketed in black numbered in white 2
(Red-Orange) jacketed in black numbered in white 3

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

Signal pair

Cores stranded in three pairs with tape over, shield spiral wrap type (tin copper wire) nominal optical coverage 95% .
Each pairs jacketed in TPE-E.

Power pair

Cores shield spiral wrap type (tin copper wire), nominal optical coverage 95%, Each cores jacketed in TPE-E.

Total assembly

Power pair and Signal pairs stranded together, fillers may be used for a better roundness.

Tape

Wrap over assembly.

Braid Shield

Tin copper wire, nominal optical coverage 85%.

Tape

Wrap over shield.

Jacket

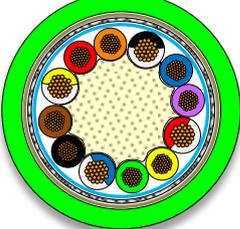
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ANNEX 3

(4x2x0.38+4x0.50)C

mm ²	AWG	N° of cond	O.D. (mm)	Jkt color	Pack. size	Packaging composition	Standard order n°	Sketch*
(4x2x0,38+4x0,50)C	(4x2xAWG22+4xAWG21)C	12 (8+4)	9,50	Green	S	1x200m	1553219007	
				Green	M	1x500m	1553219008	
				Green	L	1x1000m	1553219009	

*Colour and Sequence
 Colour: **Power**= White/Black-White/Red-White/Blue-White/Yellow
Signal= (Blue-Violet)-(Yellow-Green)-(Black-Brown)-(Red/Orange)
 Sequence: for packaging size L: colors clockwise exit drum (as in sketch)
 for packaging size S and M; colors counterclockwise

Signal pair
 Cores stranded in four pairs.

Total assembly
 Power Cores and Signal Pairs stranded together, fillers may be used for a better roundness.

Tape
 Wrap over assembly.

Braid Shield
 Tin copper wire, nominal optical coverage 85%.

Tape
 Wrap over shield.

Jacket
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ANNEX 4

(3x(2x0.14)D+2x0.50+4x0.14+4x0.25)C

mm ²	AWG	N° of cond	O.D. (mm)	Jkt color	Pack. size	Packaging composition	Standard order n°	Sketch*
(3x(2x0,14)D+2x0,50 + 4x0,14+4x0,25)C	(3x(2xAWG26)D+2xAWG21 + 4xAWG26+4xAWG24)C	16 (6+2+4+4)	10,00	Green	S	1x100m	1553219010	
				Green	M	1x500m	1553219011	
				Green	L	1x1000m	1553219012	

***Colour and Sequence**

Colours: Power (2x0.50)=Brown/Blue-Brown/Red
 Signal 3x(2x0.14)=(Brown-Black) jacketed in black numbered in white 1
 (Yellow-Green) jacketed in black numbered in white 2
 (Red-Orange) jacketed in black numbered in white 3
 Signal 4x0.14=(Gray-White/Black-White/Yellow-Blue)
 Signal 4x0.25=(Green/Red-Green/Black-Brown/Yellow-Brown/Gray)

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

Signal pair

Six cores 0.14mm² twisted in three pairs with tape over, shield spiral wrap type (tin copper wire) nominal optical coverage 95% . Each pairs jacketed in TPE-E
 Four cores 0.25mm² stranded in quad
 Four cores 0.14mm² stranded in quad

Power pair

Cores stranded in a pair

Total assembly

Power Core and Signal Pairs stranded together, fillers may be used for a better roundness.

Tape

Wrap over assembly

Braid Shield

Tin copper wire, nominal optical coverage 85%

Tape

Wrap over shield

Jacket

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