

**ALPHA WIRE
CUSTOMER PRODUCT SPECIFICATION**

Part Number: 16-1540
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Issue: 2
Issue Date: 8/30/2016
Effective Date: 8/31/2016

A. Construction

Diameters (In)

- 1) Component 1 1 X 1 CABLE 518560
 (1) Component 1 X 4 PAIR
 a) Conductor 24 (7/32) AWG Copper Alloy 0.024
 b) Insulation 0.011" Wall, Nom. Polyolefin (PO) 0.046
 (1) Color(s)
- | Pair | Color | Pair | Color | Pair | Color |
|------|-----------------------|------|---------------------|------|-------|
| 1 | BLUE - WHITE/BLUE | 3 | GREEN - WHITE/GREEN | | |
| 2 | ORANGE - WHITE/ORANGE | 4 | BROWN - WHITE/BROWN | | |
- c) Pair 2/Cond Cabled Together, Non-bonded
 (1) Twists: 13.7 Twists/foot (approx.)
 d) Cabling 4 PAIR Cabled
 (1) Twists: 3.0 Twists/foot (min)
 e) Jacket 0.025" Wall, Nom., TPE 0.254 (0.268 Max.)
 (1) Color(s) WHITE
 (2) Shield: Alum/Mylar Tape, 25% Overlap, Min.
 a) Foil Direction Foil Facing Out
 b) Drain Wire 26 (7/34) AWG Tinned Copper
 c) Braid TC, 85% Coverage, Min.
 (3) Jacket 0.030" Wall, Nom., TPE 0.342 (0.364 Max.)
 a) Color(s) BLACK
 b) Ripcord 1300 1/E NATURAL POLYESTER
 c) Print ALPHA WIRE-* P/N 518560 4PR 24 AWG
 RU AWM STYLE 20626 80C 300V ANSI/TIA-568-C.2 CAT5E
 PATCH CE ROHS (SEQ FOOTAGE)
 * = Factory Code
[Note: Product may have c(UL) or CSA markings depending upon plant of manufacture.]
- 2) Component 2 1 X 1 COND
 a) Conductor 22 (19/34) AWG Tinned Copper 0.032
 b) Insulation 0.016" Wall, Nom. TPE 0.064
 (1) Color(s)

Cond	Color	Cond	Color	Cond	Color
1	PURPLE				

- 3) Component 3 4 X 1 COND
 a) Conductor 16 (65/34) AWG Tinned Copper 0.059
 b) Insulation 0.016" Wall, Nom. TPE 0.091
 (1) Color(s)

Cond	Color	Cond	Color	Cond	Color
1	WHITE	3	BROWN		
2	BLACK	4	GREY		

- 4) Cable Assembly 6 Components Cabled
 a) Twists: 1.5 Twists/foot (min)
 b) Orientation: Components to be arranged from INSIDE LAYER to OUTSIDE LAYER
 c) Core Wrap Clear Mylar Tape, 25% Overlap, Min.
 5) Shield Tinned Copper BRAID Shield, 90% Coverage, Min.
 a) Drain Wire 22 (7/30) AWG Tinned Copper
 6) Jacket 0.055" Wall, Nom., TPE-C 0.678+/- 0.022
 a) Color(s) BLACK

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- b) Jacket Separator Tissue Tape, 25% Overlap, Min.
- c) Print MILLER ELECTRIC MFG. CO., - APPLETON, WI USA -
AUTOMATION - 2

B. Applicable Specifications
C. Environmental Compliance

- 1) CE: EU Directive 2011/65/EU(RoHS2):
This product complies with European Directive 2011/65/EU (RoHS Directive) of the European Parliament and of the Council of 8 June 2011. No Exemptions are required for RoHS Compliance on this item. Consult Alpha Wire's web site for [RoHS C of C](#).
- 2) REACH Regulation (EC 1907/2006):
This product does not contain Substances of Very High Concern (SVHC) listed on the European Union's REACH candidate list in excess of 0.1% mass of the item. For up-to-date information, please see [Alpha's REACH SVHC Declaration](#).

D. Physical & Mechanical Properties

- 1) Temperature Range -50 to 80°C
- 2) Bend Radius 10X Cable Diameter(static), 10X Cable Diameter(dynamic)
- 3) Pull Tension 118 Lbs, Maximum
- 4) Sunlight Resistance Yes
- 5) Flex Life 10 Million Cycles

E. Electrical Properties
(For Engineering purposes only)

- 1) Voltage Rating 300 V_{RMS}
- 2) Component 1
 - a) Voltage Rating 300 V_{RMS}
 - b) Characteristic Impedance 100 Ω +/- 15
 - c) Mutual Capacitance 15 pF/ft
 - d) Velocity of Propagation 69 % Nom.
 - e) Conductor DCR 11 Ω/100m Max
 - f) Skew 45 ns/100m Max
 - g) Pair to Ground Unbalance 330 pF/100m Max
 - h) DC Unbalance of a Pair 5% Max
 - i) Insertion Loss
 - 2.5 (Max dB/100m) @ 1 MHz
 - 4.9 (Max dB/100m) @ 4 MHz
 - 6.9 (Max dB/100m) @ 8 MHz
 - 7.8 (Max dB/100m) @ 10 MHz
 - 9.9 (Max dB/100m) @ 16 MHz
 - 11.1 (Max dB/100m) @ 20 MHz
 - 12.5 (Max dB/100m) @ 25 MHz
 - 14.1 (Max dB/100m) @ 31.25 MHz
 - 20.4 (Max dB/100m) @ 62.5 MHz
 - 26.4 (Max dB/100m) @ 100 MHz
- 3) Component 2
 - a) Ground Capacitance 54 pf/ft @1 kHz, Nominal
 - b) Inductance 0.06 μH/ft, Nominal
 - c) Conductor DCR 15.4 Ω/1000ft @20°C, Nominal
- 4) Component 3
 - a) Capacitance 30 pf/ft @1 kHz, Nominal Conductor to Conductor
 - b) Ground Capacitance 54 pf/ft @1 kHz, Nominal
 - c) Inductance 0.17 μH/ft, Nominal
 - d) Conductor DCR 4.5 Ω/1000ft @20°C, Nominal
- 5) OA Shield DCR 0.85 Ω/1000ft @20°C, Nominal

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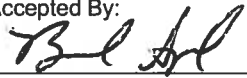
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F. Other

- 1) Packaging Flange x Traverse x Barrel (inches)
 - a) Bulk(Made-to-order)
- 2) Notes:
 - a) Component1 verified to TIA-568-C.2 Cat5e but not guaranteed after this composite cable completed.
 - b) Jacket printing: 1/4" or wider white stripe interrupted with "MILLER ELECTRIC MFG. CO., - APPLETON, WI USA – AUTOMATION-2". Print is every 12".
 - c) Component2 and Component3 insulation are same as 518235 insulation - 039160.
 - d) Flexing cycles designed: 10 million for Component1. Estimated 10 million cycles for this composite cable, but it has not been tested.

This Design is custom, Made-To-Order & once accepted, the order is NON-CANCELLABLE & NON-RETURNABLE.

Accepted By: 	Date: 8/31/16
Company: Miller Electric	Title: Eng. Manager

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