

## Customer Specification

# PART NO. 80109

## Construction

|                     |             |      |         |      |         |                                                                                                                                                                                       |  |                |
|---------------------|-------------|------|---------|------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------|
|                     |             |      |         |      |         | Diameters (In)                                                                                                                                                                        |  |                |
| 1) Component 1      |             |      |         |      |         | 3 X 1 COND                                                                                                                                                                            |  |                |
| a) Conductor        |             |      |         |      |         | 24 (19/36) AWG Tinned Copper                                                                                                                                                          |  | 0.025          |
| b) Insulation       |             |      |         |      |         | 0.010" Wall, Nom. MPPE                                                                                                                                                                |  | 0.045          |
| (1) Print           |             |      |         |      |         | ALPHANUMERIC NUMBERS - VERTICAL & HORIZONTAL<br>ALTERNATELY INVERTED                                                                                                                  |  |                |
| (2) Color Code      |             |      |         |      |         | Alpha Wire Color Code KX                                                                                                                                                              |  |                |
| Cond                | Color       | Cond | Color   | Cond | Color   |                                                                                                                                                                                       |  |                |
| 1                   | GREEN/YELLO | 2    | BLACK#1 | 3    | BLACK#2 |                                                                                                                                                                                       |  |                |
| 2) Cable Assembly   |             |      |         |      |         | 3 Components Cabled                                                                                                                                                                   |  |                |
| a) Twists:          |             |      |         |      |         | 12.0 Twists/foot (min)                                                                                                                                                                |  |                |
| b) Orientation:     |             |      |         |      |         | Components to be arranged from INSIDE LAYER to<br>OUTSIDE LAYER                                                                                                                       |  |                |
| c) Core Wrap        |             |      |         |      |         | Nonwoven Polyester Tape, 25% Overlap, Min.                                                                                                                                            |  |                |
| 3) Shield           |             |      |         |      |         | Tinned Copper BRAID Shield,85% Coverage, Min.                                                                                                                                         |  |                |
| 4) Jacket           |             |      |         |      |         | 0.032" Wall, Nom.,Polyurethane, Zero Halogen (ZH)                                                                                                                                     |  | 0.193+/- 0.010 |
| a) Color(s)         |             |      |         |      |         | SLATE                                                                                                                                                                                 |  |                |
| b) Jacket Separator |             |      |         |      |         | Tissue Tape, 25% Overlap, Min.                                                                                                                                                        |  |                |
| c) Print            |             |      |         |      |         | ALPHA WIRE-* P/N 80109 3C 24 AWG<br>RU AWM STYLE 21959 90C 600V SUN RES 60C OIL OR<br>CRU AWM I/II A/B 90C 600V FT2 --- IEC EN 60332-1/2<br>CE ROHS (SEQ FOOTAGE)<br>* = Factory Code |  |                |
|                     |             |      |         |      |         |                                                                                                                                                                                       |  |                |

## Applicable Specifications

|                      |                                     |                              |
|----------------------|-------------------------------------|------------------------------|
| 1) UL                |                                     |                              |
| a) Component 1       | AWM/STYLE 11231                     | 105°C / 600 V <sub>RMS</sub> |
| b) Overall           | AWM/STYLE 21959                     | 90°C / 600 V <sub>RMS</sub>  |
|                      | 60C OIL                             |                              |
|                      | SUN RES                             |                              |
| 2) CSA International | C(RU) AWM I/II A/B                  | 90°C / 600 V <sub>RMS</sub>  |
|                      | FT2                                 |                              |
| 3) IEC               |                                     |                              |
| a) Component 1       | EN 60228 Conductors, Class 6        |                              |
| b) Overall           | EN 60754-1 Acid Gas Generation      |                              |
|                      | EN 60754-2 Acid Gas Generation      |                              |
|                      | EN 60332-1 Flame Behavior           |                              |
|                      | EN 60332-2 Flame Behavior           |                              |
| 4) Other             | NFPA 79 - 2015 Compliant            |                              |
| 5) CE:               | EU Low Voltage Directive 2014/35/EU |                              |
|                      |                                     |                              |

## Environmental

|                                                                          |                                                                                                                                                                                                                                                             |
|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) CE: EU Directive 2011/65/EU(RoHS2), EU Directive 2015/863/EU (RoHS3): |                                                                                                                                                                                                                                                             |
|                                                                          | This product complies with European Directive 2011/65/EU (RoHS Directive) of the European Parliament and of the Council of 8 June 2011 and the amending Directive 2015/863/EU of 4 June 2015 . No Exemptions are required for RoHS Compliance on this item. |
| 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.                                                                                                |
|                                                                          |                                                                                                                                                                                                                                                             |

## Properties

| Physical & Mechanical Properties |                                                       |
|----------------------------------|-------------------------------------------------------|
| 1) Temperature Range             | -50 to 90°C(static), -40 to 80°C (dynamic)            |
| 2) Bend Radius                   | 4X Cable Diameter(static), 6X Cable Diameter(dynamic) |
| 3) Pull Tension                  | 14.5 Lbs, Maximum                                     |
| 4) Sunlight Resistance           | Yes                                                   |
| Electrical Properties            | (For Engineering purposes only)                       |
| 1) Voltage Rating                | 600 V <sub>RMS</sub>                                  |
| 2) Capacitance                   | 27 pF/ft @1 kHz, Nominal Conductor to Conductor       |
| 3) Ground Capacitance            | 49 pF/ft @1 kHz, Nominal                              |
| 4) Inductance                    | 0.19 µH/ft, Nominal                                   |
| 5) Conductor DCR                 | 24.2 Ω/1000ft @20°C, Nominal                          |
| 6) OA Shield DCR                 | 6.1 Ω/1000ft @20°C, Nominal                           |
|                                  |                                                       |

# Other

| Packaging              | Flange x Traverse x Barrel (inches)         |
|------------------------|---------------------------------------------|
| a) 100 FT              | 6.5 x 4 x 2.5 Continuous length             |
| b) Bulk(Made-to-order) |                                             |
|                        | <i>[Spool dimensions may vary slightly]</i> |
|                        |                                             |

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# EU/UK/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: 80109

80109, RoHS-Compliant Commencing With 5/18/2015 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above, including all packaging materials, is manufactured in accordance with Directive 2011/65/EU of the European Parliament, better known as the RoHS Directive (commonly known as RoHS 2), with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. This certification extends to amending Directive 2015/863/EU which expanded the list of restricted substances to 10 items (commonly known as RoHS 3). This product also complies with UK - RoHS. The reader is referred to these Directives for the specific definitions and extents of the Directives. **No Exemptions are required for RoHS Compliance on this item.** Additionally, Alpha certifies that the listed part number is in compliance with China RoHS "Marking for Control of Pollution by Electronic Information Products" standard SJ/T 11364-2014. This product is also in compliance with China RoHS 2 per GB/T 26572-2011.

## Substance

Lead  
Mercury  
Cadmium  
Hexavalent Chromium  
Polybrominated Biphenyls (PBB)  
Polybrominated Diphenyl Ethers (PBDE) ,  
Including Deca-BDE  
Bis(2-ethylhexyl) phthalate (DEHP)  
Butyl benzyl phthalate (BBP)  
Dibutyl phthalate (DBP)  
Diisobutyl phthalate (DIBP)

## Maximum Control Value

0.1% by weight (1000 ppm)  
0.1% by weight (1000 ppm)  
0.01% by weight (100 ppm)  
0.1% by weight (1000 ppm )  
0.1% by weight (1000 ppm)  
0.1% by weight (1000 ppm)  
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The information provided in this document and disclosure is correct to the best of Alpha Wire's knowledge, information and belief at the date of its release. The information provided is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it will become part of. The intent of this document is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.

Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering 8/6/2024

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