



800.633.6339

[www.lapptannehill.com](http://www.lapptannehill.com)

Customer Specification

PART NO. V16110

Construction

|                       |             |  | Diameters (In)        |      |                |
|-----------------------|-------------|--|-----------------------|------|----------------|
| 1) Component 1        |             | 4 X 1 COND   |                       |      |                |
| a) Conductor          |             | 10 (105/30) AWG Tinned Copper  |                       |      | 0.120          |
| b) Insulation         |             | 0.047" Wall, Nom. XLPE   |                       |      | 0.217          |
| (1) Separator         |             | Paper Tape, 10% Overlap, Min.  |                       |      |                |
| (2) Color(s)          |             |  |                       |      |                |
| Cond                  | Color       | Cond   | Color                 | Cond | Color          |
| 1                     | BLACK#1     | 3  | BLACK#3               |      |                |
| 2                     | BLACK#2     | 4  | GREEN OR GREEN/YELLOW |      |                |
| 2) Component 2        |             | 1 X 1 PAIR   |                       |      |                |
| a) Conductor          |             | 14 (41/30) AWG Tinned Copper   |                       |      | 0.075          |
| b) Insulation         |             | 0.032" Wall, Nom. XLPE   |                       |      | 0.142          |
| (1) Separator         |             | Paper Tape, 10% Overlap, Min.  |                       |      |                |
| (2) Color(s)          |             |  |                       |      |                |
| Pair                  | Color       | Pair   | Color                 | Pair | Color          |
| 1                     | BLACK-WHITE |  |                       |      |                |
| c) Pair               |             | 2/Cond Cabled Together   |                       |      |                |
| (1) Twists:           |             | 2.8 Twists/foot (min)  |                       |      |                |
| Individually Applied: |             |  |                       |      |                |
| d) Shield:            |             | Alum/Mylar Tape, 25% Overlap, Min.   |                       |      |                |
| (1) Foil Direction    |             | Foil Facing In   |                       |      |                |
| (2) Drain Wire        |             | 14 (41/30) AWG Tinned Copper   |                       |      |                |
| 3) Cable Assembly     |             | 5 Components Cabled  |                       |      |                |
| a) Twists:            |             | 1.4 Twists/foot (min)  |                       |      |                |
| b) Orientation:       |             | Components to be arranged from INSIDE LAYER to OUTSIDE LAYER   |                       |      |                |
| 4) Shield:            |             | A/P/A Tape, 25% Overlap, Min.  |                       |      |                |
| a) Drain Wire         |             | 10 (105/30) AWG Tinned Copper  |                       |      |                |
| b) Braid              |             | Tinned Copper, 85% Coverage, Min.  |                       |      |                |
| 5) Jacket             |             | 0.085" Wall, Nom., PVC   |                       |      | 0.875+/- 0.028 |
| a) Color(s)           |             | BLACK  |                       |      |                |
| b) Jacket Separator   |             | Tissue Tape, 25% Overlap, Min.   |                       |      |                |
| c) Print              |             | ALPHA WIRE-* P/N V16110 4C 10 AWG 1PR 14 AWG<br>SHIELDED (UL) 1000V FLEXIBLE MOTOR<br>SUPPLY CABLE OR WTTC 90C WET/DRY OR 600V TC-ER<br>XHHW-2 CDRS XLPE/PVC 90C WET/DRY<br>OR 10 AWG C(UL) 600V CIC TC 90C WET/DRY FT4 (-25C)<br>--- P-07-KA080006-MSHA --- LLXXXXXX CSA AWM I/II<br>A/B 1000V 90C FT4 CE ROHS (SEQ FOOTAGE)<br>* = Factory Code<br>[Note: Product may have c(UL) or CSA markings depending upon plant of manufacture.] |                       |      |                |

## Applicable Specifications

|                      |                                     |  |
|----------------------|-------------------------------------|--|
| 1) UL                |                                     |  |
| a) Component 1       | RHW-2Wet/Dry                        | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
|                      | XHHW-2Wet/Dry                       | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
| b) Component 2       | XHHW-2Wet/Dry                       | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
| c) Overall           | TC                                  | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
|                      | EXPOSED RUN                         |  |
|                      | DIRECT BURIAL                       |  |
|                      | SUN RES                             |  |
|                      | 1000V Flexible Motor Supply Cable   |  |
|                      | WTTC                                | 90°C / 1000 V <sub>RMS</sub>               |
| 2) CSA International |                                     |  |
| a) Component 1       | AWM I A/B                           | 90°C / 1000 V <sub>RMS</sub>               |
| b) Component 2       | AWM I A/B                           | 90°C / 1000 V <sub>RMS</sub>               |
| c) Overall           | AWM I/II A/B                        | 90°C / 1000 V <sub>RMS</sub>               |
|                      | FT4                                 |  |
|                      | C(UL) TC                            | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
|                      | C(UL) CIC CONTROL                   | 90°C Dry / 90°C Wet / 600 V <sub>RMS</sub> |
|                      | C(UL) -25C                          |  |
| 3) Other             | PMSHA Specification                 |  |
| 4) 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             | -40 to 90°C                          |
| 2) Bend Radius                   | 10X Cable Diameter                   |
| 3) Pull Tension                  | 534 Lbs, Maximum                     |
| 4) Sunlight Resistance           | Yes                                  |
| 5) Direct Burial                 | Yes                                  |
| Electrical Properties            |                                      |
| (For Engineering purposes only)  |                                      |
| 1) Voltage Rating                | 1000 V <sub>RMS</sub>                |
| 2) Component 1                   |                                      |
| a) Characteristic Impedance      | 63 Ω                                 |
| b) Inductance                    | 0.19 μH/ft, Nominal                  |
| c) Mutual Capacitance            | 29 pF/ft @1 kHz, Nominal             |
| d) Ground Capacitance            | 53 pF/ft @1 kHz, Nominal             |
| e) Conductor DCR                 | 1.1 Ω/1000ft @20°C, Nominal          |
| f) OA Shield DCR                 | 0.49 Ω/1000ft @20°C, Nominal         |
| g) Current                       | 32 amps per conductor @30°C, Maximum |
| h) Insulation Resistance         | 300 MΩ/MFt (Est.)                    |
| 3) Component 2                   |                                      |
| a) Inductance                    | 0.19 μH/ft, Nominal                  |
| b) Mutual Capacitance            | 22 pF/ft @1 kHz, Nominal             |
| c) Ground Capacitance            | 40 pF/ft @1 kHz, Nominal             |
| d) Conductor DCR                 | 2.7 Ω/1000ft @20°C, Nominal          |
| e) Ind. Shield DC Resistance     | 2.5 Ω/1000ft @20°C, Nominal          |
| f) Current                       | 20 amps per conductor @30°C, Maximum |
| g) Insulation Resistance         | 300 MΩ/MFt (Est.)                    |

## Other

|                        |                                     |
|------------------------|-------------------------------------|
| <b>Packaging</b>       | Flange x Traverse x Barrel (inches) |
| a) Bulk(Made-to-order) |                                     |



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# EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: V16110

V16110 , RoHS-Compliant Commencing With 10/1/2005 Production

Note: all colors and put-ups

This document certifies that the Alpha part number cited above 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) 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.

| Substance                               | Maximum Control Value      |
|---|----------------------------|
| Lead                                    | 0.1% by weight (1000 ppm)  |
| Mercury                                 | 0.1% by weight (1000 ppm)  |
| Cadmium                                 | 0.01% by weight (100 ppm)  |
| Hexavalent Chromium                     | 0.1% by weight (1000 ppm ) |
| Polybrominated Biphenyls (PBB)          | 0.1% by weight (1000 ppm)  |
| Polybrominated Diphenyl Ethers (PBDE) , |                            |
| Including Deca-BDE                      | 0.1% by weight (1000 ppm)  |
| Bis(2-ethylhexyl) phthalate (DEHP)      | 0.1% by weight (1000 ppm)  |
| Butyl benzyl phthalate (BBP)            | 0.1% by weight (1000 ppm)  |
| Dibutyl phthalate (DBP)                 | 0.1% by weight (1000 ppm)  |
| Diisobutyl phthalate (DIBP)             | 0.1% by weight (1000 ppm)  |

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Authorized Signatory for the Alpha Wire:

Dave Watson, Director of Engineering & QA

4/27/2020

Alpha Wire

711 Lidgerwood Ave.

Elizabeth, NJ 07207

Tel: 1-908-925-8000