



Alpha Wire | 711 Lidgerwood Avenue, Elizabeth, NJ 07207  
Tel: 1-800-52 ALPHA (25742), Web: www.alphawire.com

# Customer Specification

## PART NO. 6461

### Construction

|                   |       |                                                                                                                                                                                                                   |        | Diameters (In) |       |
|-------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------|-------|
| 1) Component 1    |       | 2 X 1 COND                                                                                                                                                                                                        |        |                |       |
| a) Conductor      |       | 22 (7/30) AWG TC                                                                                                                                                                                                  |        | 0.029          |       |
| b) Insulation     |       | 0.046" Wall, Nom. Foam HDPE                                                                                                                                                                                       |        | 0.121          |       |
| (1) Color(s)      |       |                                                                                                                                                                                                                   |        |                |       |
| Cond              | Color | Cond                                                                                                                                                                                                              | Color  | Cond           | Color |
| 1                 | BLUE  | 2                                                                                                                                                                                                                 | ORANGE |                |       |
| 2) Cable Assembly |       | 2 Components Cabled                                                                                                                                                                                               |        |                |       |
| a) Twists:        |       | 3.0 Twists/foot (min)                                                                                                                                                                                             |        |                |       |
| 3) Shield:        |       | Alum/Mylar Tape, 25% Overlap, Min.                                                                                                                                                                                |        |                |       |
| a) Foil Direction |       | Foil Facing Out                                                                                                                                                                                                   |        |                |       |
| b) Drain Wire     |       | 20 (7/28) AWG TC                                                                                                                                                                                                  |        |                |       |
| 4) Jacket         |       | 0.050" Wall, Nom.,PVC                                                                                                                                                                                             |        | 0.351          |       |
| a) Color(s)       |       | ORANGE                                                                                                                                                                                                            |        |                |       |
| b) Ripcord        |       | 1310 Denier Nylon                                                                                                                                                                                                 |        |                |       |
| c) Print          |       | ALPHA WIRE-* P/N 6461<br>FIELDBUS 1PR22 SHIELDED (UL) CM 75C EXXXXX OR<br>PLTC SUN RES OR C(UL) CM 75C<br>* = Factory Code<br>[Note: Product may have c(UL) or CSA markings depending upon plant of manufacture.] |        |                |       |

### Applicable Specifications

|                      |              |      |
|----------------------|--------------|------|
| 1) UL                | PLTC         | 75°C |
|                      | CM           | 75°C |
|                      | SUN RES      |      |
| 2) CSA International | CM           | 75°C |
| 3) Other             | ISA/IEC SP50 |      |

### Environmental

|                                   |                                                                                                                                                                                                                                                                              |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) EU Directive 2002/95/EC(RoHS): |                                                                                                                                                                                                                                                                              |
|                                   | All materials used in the manufacture of this part are in compliance with EU Directive 2002/95/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. Consult Alpha Wire's web site for compliance Date of Manufacture. |

### Properties

|                                                       |                                       |
|-------------------------------------------------------|---------------------------------------|
| Physical & Mechanical Properties                      |                                       |
| 1) Temperature Range                                  | -40 to 75°C                           |
| 2) Bend Radius                                        | 10X Cable Diameter                    |
| 3) Pull Tension                                       | 19.7 Lbs, Maximum                     |
| Electrical Properties (For Engineering purposes only) |                                       |
| 1) Voltage Rating                                     | 300 V <sub>RMS</sub>                  |
| 2) Characteristic Impedance                           | 150 Ω +/- 15                          |
| 3) Inductance                                         | 0.3 μH/ft, Nominal                    |
| 4) Mutual Capacitance                                 | 9.2 pF/ft @1 kHz, Nominal             |
| 5) Ground Capacitance                                 | 16 pF/ft @1 kHz, Nominal              |
| 6) Velocity of Propagation                            | 78 %                                  |
| 7) Conductor DCR                                      | 17.1 Ω/1000ft @20°C, Nominal          |
| 8) OA Shield DCR                                      | 3.3 Ω/1000ft @20°C, Nominal           |
| 9) Current                                            | 2.5 amps per conductor @30°C, Maximum |
| 10) Attenuation, Max dB/100ft                         | 1.98 @ 250 kHz                        |
|                                                       | 3.05 @ 625 kHz                        |
|                                                       | 3.96 @ 1.25 MHz                       |
|                                                       | 6.1 @ 3.125 MHz                       |

## Other

|                              |  |
|------------------------------|--|
| 1) Packaging                 |  |
| a) 1000 FT                   |  |
| b) 500 FT                    |  |
| c) 100 FT                    |  |
| 2) Notes:                    |  |
| a) FOUNDATION Fieldbus Cable |  |

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

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## RoHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number:6461

6461 , RoHS-Compliant Commencing With7/1/2008Production

*This document certifies that the Alpha part numbers cited above are manufactured in accordance with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003, better known as the RoHS Directives, with regards to restrictions of the use of certain hazardous substances used in the manufacture of electrical and electronic equipment. The reader is referred to these Directives for the specific definitions and extents of these Directives. **No Exemptions are required for RoHS Compliance on this item.***

| 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) | 0.1% by weight (1000 ppm) |
| Including Deca-BDE                    | 0.1% by weight (1000 ppm) |

*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 Company:

A handwritten signature in black ink, appearing to read 'Dave Watson'.

Dave Watson, Director of Engineering &QA

9/30/2011