



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

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# Customer Specification

## PART NO. SF61221CY

### Construction

|                                  |              |                                                              |             |                     |       |
|----------------------------------|--------------|--------------------------------------------------------------|-------------|---------------------|-------|
|                                  |              |                                                              |             | Diameters (In)      |       |
| 1) Component 1                   |              | 4 X 1 COND                                                   |             |                     |       |
| a) Conductor                     |              | 14 (41/30) AWG Tinned Copper                                 |             | 0.070               |       |
| b) Insulation                    |              | 0.016" Wall, Nom. PVC/ 0.005" Wall NYLON                     |             | 0.112               |       |
| (1) Print                        |              | ALPHANUMERIC NUMBERS - 1-ONE ALTERNATING AND INVERTED        |             |                     |       |
| (2) Color Code                   |              | Alpha Wire Color Code KX                                     |             |                     |       |
| Cond                             | Color        | Cond                                                         | Color       | Cond                | Color |
| 1                                | GREEN/YELLOW | 3                                                            | BLACK#2     |                     |       |
| 2                                | BLACK#1      | 4                                                            | BLACK#3     |                     |       |
| 2) Component 2                   |              | 2 X 1 PAIR                                                   |             |                     |       |
| a) Conductor                     |              | 18 (19/30) AWG Tinned Copper                                 |             | 0.050               |       |
| b) Insulation                    |              | 0.016" Wall, Nom. PVC/ 0.005" Wall NYLON                     |             | 0.092               |       |
| (1) Color Code                   |              | Alpha Wire Color Code A                                      |             |                     |       |
| Pair                             | Color        | Pair                                                         | Color       | Pair                | Color |
| 1                                | BLACK-RED    | 2                                                            | BLACK-WHITE |                     |       |
| c) Pair                          |              | 2/Cond Cabled Together                                       |             |                     |       |
| (1) Twists:                      |              | 6.0 Twists/foot (min)                                        |             |                     |       |
| Individually Applied:            |              |                                                              |             |                     |       |
| d) Shield:                       |              | Flex Alum/Mylar Tape, 25% Overlap, Min.                      |             |                     |       |
| (1) Foil Direction               |              | Foil Facing Out                                              |             |                     |       |
| (2) Drain Wire                   |              | 22 (7/30) AWG Tinned Copper                                  |             |                     |       |
| (3) Braid                        |              | Tinned Copper,85% Coverage, Min.                             |             |                     |       |
| e) Jacket                        |              | 0.016" Wall, Nom.,TPE                                        |             | 0.242 (0.253 Max.)  |       |
| (1) Color(s)                     |              | NATURAL                                                      |             |                     |       |
| (2) Print                        |              | ALPHANUMERIC NUMBERS - 1-ONE ALTERNATING AND INVERTED        |             |                     |       |
| 3) Cable Assembly                |              | 6 Components Cabled                                          |             |                     |       |
| a) Twists:                       |              | 2.7 Twists/foot (min)                                        |             |                     |       |
| b) Orientation:                  |              | Components to be arranged from INSIDE LAYER to OUTSIDE LAYER |             | c) Core Wrap        |       |
| REMA Y Tape, 25% Overlap, Min.   |              |                                                              |             | 4) Shield:          |       |
| A/P/A Tape, 25% Overlap, Min.    |              |                                                              |             | a) Drain Wire       |       |
| 22 (7/30) AWG Tinned Copper      |              |                                                              |             | b) Braid            |       |
| Tinned Copper,85% Coverage, Min. |              |                                                              |             | 5) Jacket           |       |
| 0.065" Wall, Nom.,TPE            |              | 0.655+/- 0.032                                               |             | a) Color(s)         |       |
| ORANGE                           |              |                                                              |             | b) Jacket Separator |       |
| Tissue Tape, 25% Overlap, Min.   |              |                                                              |             | c) Print            |       |

## Applicable Specifications

|                      |                                     |                              |
|----------------------|-------------------------------------|------------------------------|
| 1) UL                |                                     |                              |
| a) Component 1       | THHN                                | 90°C / 600 V <sub>RMS</sub>  |
| b) Component 2       | TFFN                                | 90°C / 600 V <sub>RMS</sub>  |
| c) Overall           | TC                                  | 90°C / 600 V <sub>RMS</sub>  |
|                      | EXPOSED RUN                         |                              |
|                      | OIL RES I/II                        |                              |
|                      | SUN RES                             |                              |
|                      | WTTC                                | 90°C / 1000 V <sub>RMS</sub> |
| 2) CSA International | AWM I/II A/B                        | 90°C / 600 V <sub>RMS</sub>  |
|                      | FT4                                 |                              |
|                      | C(UL) CIC CONTROL                   | 90°C / 600 V <sub>RMS</sub>  |
|                      | C(UL) TC                            | 90°C / 600 V <sub>RMS</sub>  |
| 3) Other             | Conductors NEMA Class K             |                              |
| 4) CE:               | EU Low Voltage Directive 2014/35/EC |                              |

## 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. 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.                                                                        |

## Properties

|                                  |                                                         |
|----------------------------------|---------------------------------------------------------|
| Physical & Mechanical Properties |                                                         |
| 1) Temperature Range             | -30 to 90°C(static), -5 to 90°C (dynamic)               |
| 2) Bend Radius                   | 10X Cable Diameter(static), 10X Cable Diameter(dynamic) |
| 3) Pull Tension                  | 226 Lbs, Maximum                                        |
| 4) Sunlight Resistance           | Yes                                                     |
| Electrical Properties            |                                                         |
| (For Engineering purposes only)  |                                                         |
| 1) Voltage Rating                | 600 V <sub>RMS</sub>                                    |
| 2) Component 1                   |                                                         |
| a) Capacitance                   | 52 pF/ft @1 kHz, Nominal Conductor to Conductor         |
| b) Ground Capacitance            | 94 pF/ft @1 kHz, Nominal                                |
| c) Inductance                    | 0.17 µH/ft, Nominal                                     |
| d) Conductor DCR                 | 2.9 Ω/1000ft @20°C, Nominal                             |
| 3) Component 2                   |                                                         |
| a) Mutual Capacitance            | 48 pF/ft @1 kHz, Nominal                                |
| b) Ground Capacitance            | 86 pF/ft @1 kHz, Nominal                                |
| c) Characteristic Impedance      | 46 Ω                                                    |
| d) Inductance                    | 0.19 µH/ft, Nominal                                     |
| e) Conductor DCR                 | 6.1 Ω/1000ft @20°C, Nominal                             |
| f) Component Shield DCR          | 2.9 Ω/1000ft @20°C, Nominal                             |
| 4) OA Shield DCR                 | 1.23 Ω/1000ft @20°C, Nominal                            |

## Other

|                                                                                                          |                                             |
|----------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Packaging</b>                                                                                         | Flange x Traverse x Barrel (inches)         |
| a) 1000 FT                                                                                               | 30 x 14 x 12 Continuous length              |
| b) 500 FT                                                                                                | 24 x 14 x 12 Continuous length              |
| c) 100 FT                                                                                                | 16 x 11 x 8 Continuous length               |
|                                                                                                          | <i>[Spool dimensions may vary slightly]</i> |
| <b>Notes:</b>                                                                                            |                                             |
| a) Suitable for use in Industrial Machinery per the requirements of NFPA-79                              |                                             |
| b) Suitable for intermittent or light duty flexing where cycle count will be less than 1,000,000 cycles. |                                             |

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## EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: SF61221CY

SF61221CY , RoHS-Compliant Commencing With 2/9/2009 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:

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

Dave Watson, Director of Engineering & QA

2/18/2020

Alpha Wire

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