



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) 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		ALPHA WIRE-* P/N SF61221CY 4C14 THHN 2PR18 TFFN E324185 (UL) WTTC 90C 1000 VOLT OR (UL) TC-ER 90C 600V OIL RES I/II SUN RES OR C(UL) CIC CONTROL/TC 90C PVC/NYLON INS FT4 4C14 2PR18 --- LLXXXXXX CSA AWM I/II A/B 90C 600V FT4 CE ROHS (DATE CODE) (SEQ FOOTAGE) * = Factory Code [Note: Product may have c(UL) or CSA markings depending upon plant of manufacture.]			

## 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) CE:	EU Low Voltage Directive 2006/95/EC	

## Environmental

1) EU Directive 2011/65/EU(RoHS2):	
	All materials used in the manufacture of this part are in compliance with European Directive 2011/65/EU regarding the restriction of use of certain hazardous substances in electrical and electronic equipment. 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.
3) California Proposition 65:	
	The outer surface materials used in the manufacture of this part meet the requirements of California Proposition 65.

## Properties

Physical & Mechanical Properties	
1) Temperature Range	-25 to 90°C(static), -5 to 90°C (dynamic)
2) Bend Radius	10X Cable Diameter
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	6.3 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

Packaging	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>
Notes:	
a) Suitable for use in Industrial Machinery per the requirements of NFPA-79	

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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:

Dave Watson, Director of Engineering & QA

10/31/2016

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