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# Customer Specification

## PART NO. 80159

### Construction

				Diameters (In)	
1) Component 1		4 X 1 COND			
a) Conductor		12 (168(7x24)/34) AWG Tinned Copper		0.104	
b) Insulation		0.015" Wall, Nom. MPPE		0.134	
(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) Cable Assembly		4 Components Cabled			
a) Twists:		3.2 Twists/foot (min)			
b) 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)		0.421+/- 0.013	
a) Color(s)		SLATE			
b) Jacket Separator		Tissue Tape, 25% Overlap, Min.			
c) Print		ALPHA WIRE-* P/N 80159 4C 12 AWG RU AWM STYLE 21959 90C 600V SUN RES 60C OIL OR CRU AWM I/II A/B 90C 600V FT2 --- IEC EN 60332-1/2 CE ROHS (SEQ FOOTAGE) * = 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) CE:	EU Low Voltage Directive 2006/95/EC	

## Environmental

1) CE: EU Directive 2011/65/EU(RoHS2):	
	This product complies with European Directive 2011/65/EU (RoHS Directive) of the European Parliament and of the Council of 8 June 2011. 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	-50 to 90°C(static), -40 to 80°C (dynamic)
2) Bend Radius	4X Cable Diameter(static), 6X Cable Diameter(dynamic)
3) Pull Tension	218 Lbs, Maximum
4) Sunlight Resistance	Yes
Electrical Properties	
(For Engineering purposes only)	
1) Voltage Rating	600 V <sub>RMS</sub>
2) Capacitance	35 pf/ft @1 kHz, Nominal Conductor to Conductor
3) Ground Capacitance	63 pf/ft @1 kHz, Nominal
4) Inductance	0.15 µH/ft, Nominal
5) Conductor DCR	1.76 Ω/1000ft @20°C, Nominal
6) OA Shield DCR	2.5 Ω/1000ft @20°C, Nominal

## Other

<b>Packaging</b>	Flange x Traverse x Barrel (inches)
a) 100 FT	12 x 10 x 5 Continuous length
b) Bulk(Made-to-order)	
	[Spool dimensions may vary slightly]

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## EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: 80159

80159 , RoHS-Compliant Commencing With 5/18/2015 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)

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:

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

Dave Watson, Director of Engineering & QA

2/9/2017

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