



Customer Specification

PART NO. M4451

Construction

				Diameters (In)	
1) Component 1		1 X 2 COND			
a) Conductor		22 (7/30) AWG TC		0.030	
b) Insulation		0.008" Wall, Nom. Polypropylene(PP)		0.046	
(1) Color(s)					
Cond	Color	Cond	Color	Cond	Color
1	BLACK	2	RED		
c) Cabling		2 COND Cabled			
(1) Twists:		9.6 Twists/foot (min)			
d) Shield:		Alum/Mylar Tape, 25% Overlap, Min.			
(1) Foil Direction		Foil Facing Out			
(2) Drain Wire		22 (7/30) AWG TC			
2) Component 2		2 X 1 COND			
a) Conductor		22 (7/30) AWG TC		0.030	
b) Insulation		0.008" Wall, Nom. Polypropylene(PP)		0.046	
(1) Color(s)					
Cond	Color	Cond	Color	Cond	Color
1	GREEN	2	WHITE		
3) Cable Assembly		3 Components Cabled			
a) Twists:		6.9 Twists/foot (min)			
4) Jacket		0.019" Wall, Nom.,PVC		0.161 (0.171 Max.)	
a) Color(s)		SLATE			
b) Print		ALPHA WIRE-* P/N M4451 4C 22 AWG EXXXXXX 90C SHIELDED CM (UL) C(UL) CE ROHS * = Factory Code <i>[Note: Product may have c(UL) or CSA markings depending upon plant of manufacture.]</i>			

Applicable Specifications

1) UL	CM	90°C
2) CSA International	C(UL) TYPE CM	90°C
3) 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.
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	-20 to 90°C
2) Bend Radius	10X Cable Diameter
3) Pull Tension	27 Lbs, Maximum
Electrical Properties (For Engineering purposes only)	
1) Voltage Rating	300 V _{RMS}
2) Component 1	
a) Capacitance	28 pf/ft @1 kHz, Nominal Conductor to Conductor
b) Ground Capacitance	50.4 pf/ft @1 kHz, Nominal
c) Characteristic Impedance	54 Ω
d) Inductance	0.17 μH/ft, Nominal
e) Conductor DCR	16.4 Ω/1000ft @20°C, Nominal
f) Component Shield DCR	13.7 Ω/1000ft @20°C, Nominal
3) Component 2	
a) Capacitance	16 pf/ft @1 kHz, Nominal Conductor to Conductor
b) Characteristic Impedance	90 Ω
c) Inductance	0.17 μH/ft, Nominal
d) Conductor DCR	16.4 Ω/1000ft @20°C, Nominal

Other

Packaging	Flange x Traverse x Barrel (inches)
a) 1000 FT	12 x 4.5 x 3.5 Continuous length
b) 500 FT	12 x 4.5 x 3.5 Continuous length
c) 100 FT	6.5 x 2 x 1.9 Continuous length
	<i>[Spool dimensions may vary slightly]</i>

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EU/China ROHS CERTIFICATE OF COMPLIANCE

To Whom It May Concern:

Alpha Wire Part Number: M4451

M4451 , RoHS-Compliant Commencing With 11/1/2004 Production

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, 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 this Directive for the specific definitions and extents of this Directive. **No Exemptions are required for RoHS Compliance on this item.** It should be noted that this product does not fall within the scope of Directive 2011/65/EU, but this Certificate is offered for cases where this product will be used within EEE that does fit within the Directive's scope. 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 11364-2006.

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)

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Authorized Signatory for the Alpha Wire Company:

Dave Watson, Director of Engineering & QA

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