



**1.0 CONDUCTOR**

Material: Tin Plated Copper  
 Construction: 22 AWG 7/30  
 Diameter: 0.030" nom

**2.0 INSULATION**

Material: Halogen Free Crosslinked Polyethylene  
 Wall thickness: 0.017" nom  
 Diameter: 0.064" nom  
 Color: White  
 Marking: XX

XX – The number of the primary, i.e. 01, 02

**3.0 CABLE**

# of Items: Fifty (50) Primaries  
 Lay Length  
 Core: 3.50" L.H.L.  
 Layer 1: 3.50" L.H.L.  
 Layer 2: 5.25" R.H.L.  
 Layer 3: 7.00" L.H.L.  
 Diameter: 0.518" nom

**4.0 BINDER**

Material: 0.0015" Clear Polyester  
 Coverage: 100% (25% overlap, min)  
 Diameter: 0.522" nom

**5.0 JACKET**

Material: Halogen Free Crosslinked Polyethylene  
 Wall Thickness: 0.040" nom  
 Diameter: 0.602"  
 Color: Gray  
 Marking: 50 COND #22 LOW SMOKE ZERO  
 HALOGEN XLPE 105C 300V JUDD  
 #M10428

**6.0 PHYSICAL CHARACTERISTICS**

Temperature rating: -40°C to 105°C  
 Voltage rating: 300 V  
 Weight: 264 lbs per 1000', nom

**7.0 PERFORMANCE PROPERTIES**

Mechanical

Tensile – UL 1581  
 Unaged 1500 psi, min  
 Aged (168 hrs @ 136°C) 70% retention, min  
 Elongation – UL 1581  
 Unaged 150%, min  
 Aged (168 hrs @ 136°C) 45% retention, min  
 Deformation – UL 758  
 1 hr @ 121°C 250 g, 50% thickness decrease, max  
 Crush Resistance – UL 758 600 lb, min  
 Slow Compression – CSA C22.2 No. 210.2-M90  
 1 hr @ 23°C 293 lbs

Thermal

Cold Bend – CSA C22.2 No. 210.2-M90  
 4 hrs @ -40°C No Cracks, Pass Dielectric Strength  
 Heat Shock – CSA C22.2 No. 210.2-M90  
 1 hr @ 136°C No Cracks, Pass Dielectric Strength  
 Flame  
 VW-1 (UL 758) 60 sec burn, max  
 FT-1 (CSA C22.2 No. 210.2-M90) 60 sec burn, max



**JUDD WIRE INC.**  
 124 Turnpike Road  
 Turners Falls, MA 01376  
 (413) 863-4357

Date	Rev	By	Appr'd	ECN
01/18/11	G	ARJP	RTB	11-913
02/01/11	H	ARJP	EJK	11-938
02/28/11	I	KP	ARJP	11-952
Customer Approval:				

Description: <b>50C 22 AWG, XLHFPE, XLHFPE, 300V, 105°C</b>	
Specification Number: <b>M10428</b>	Page: 1 of 2

**PERFORMANCE PROPERTIES (con't)**

## Electrical

Dielectric Withstand I – UL 758	
Unaged	60 sec, 60 Hz, 2000 V
Aged (168 hrs @ 136°C)	Greater than 50% of average unaged breakdown voltage
Dielectric Withstand II – UL 758	
Unaged	60 sec, 60 Hz, 2000 V
Aged (168 hrs @ 136°C)	60 sec, 60 Hz, 2000 V
Dielectric Withstand III – UL 758	
Conditioned 24 hrs in water	60 sec, 60 Hz, 2000 V
Dielectric Strength – CSA C22.2 No. 210.2-M90	
Post Cold Bend (Conditioned 1 hr in water)	60 sec, 60 Hz, 1000 V
Post Heat Shock (Conditioned 1 hr in water)	60 sec, 60 Hz, 1000 V
Spark Test	3000 V <sub>ac</sub>
Conductor DCR	16.7 Ω/kft, max

## Environmental

Directive 2002/95/EC(RoHS)	Complies
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**Cable**

## Mechanical

Tensile – UL 1581	
Unaged	1500 psi, min
Aged (168 hrs @ 136°C)	70% retention, min
Elongation – CSA C22.2 No. 210.2-M90	
Unaged	150%, min
Aged (168 hrs @ 136°C)	50% retention, min
Min Bend Radius	3.62"

## Thermal

Cold Bend – CSA C22.2 No. 210.2-M90	
4 hrs @ -40°C	No Cracks, Pass Dielectric Strength

## Flame Test

- UL 1685 Vertical Tray Fire – Propagation and Smoke Release Test: Tested in accordance to UL 1685 (FT4/IEEE 1202) with Limited Smoke Option
- IEC 60332-3 – Tests on Electric Cables under Fire Conditions Part 3: Tested in accordance to IEC 60332-3, category C
- IEC 61034 – Measurement of Smoke Density of Cables Burning Under Defined Conditions
- IEEE 383 210k BTU – Vertical Tray Flame Test
- VW-1 – Vertical Flame Test

**PERFORMANCE PROPERTIES (con't)**

## Chemical

IEC 60754-1	Pass
IEC 60754-2	Pass

## Electrical

Dielectric Strength – CSA C22.2 No. 210.2-M90	
Post Cold Bend (Conditioned 1 hr in water)	1000 V <sub>ac</sub>
Dielectric Withstand – UL 758	
60 sec, 60 Hz, 2000 V	
Inductance	0.28 μH/ft, nom
Capacitance (Cond-Cond)	22.3 pF/ft, nom
Spark	3000 V
Ampacity at 25°C	3.55 Amps, max

## Environmental

Directive 2002/95/EC(RoHS)	Complies
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**8.0 REFERENCE SPECIFICATION**

- UL Standard 758, AWM Style 3385
- UL Standard 758
- UL Standard 1581
- CSA C22.2 No. 210.2-M90
- UL Subject 13
- CSA C22.2 No. 210.2-M90 AWM I A/B
- IEC 60754
- IEC 61034
- IEC 60332-3
- UL 1685
- IEEE 383
- The European Parliament and the Council of the European Union Directive 2002/95/EC



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**50C 22 AWG, XLHFPE,  
XLHFPE, 300V, 105°C**

Specification Number:

**M10428**

Rev:

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