


REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
A	K. HUNTER RDA 9687 (1) ADDED EMF TESTING REQUIREMENTS	12/18/02	J. Nowak

PROPRIETARY

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UNLESS OTHERWISE SPECIFIED USE APPLIED PRACTICES 2H2300	DECIMAL TOLERANCES 2 PLACE .25 INCH OR LESS $\pm .01$ 2 PLACE OVER .25 INCH $\pm .02$ 3 PLACE $\pm .005$ ANGLES $\pm 1^\circ$	RELEASED FOR ENGINEERING DEVELOPMENT	PROJECT ENGR	—	—	
STD G. McClellan	11/26/02	ISSUED FOR PRE-	PROJECT ENGR	—	—	
MFG J. Schmitz	11/27/02	ISSUED FOR PRODUCTION	MFG ENGR	—	—	
R&QA J. Leighton	11/27/02					
ADD. CONTRACT #	ADDITIONAL APPROVALS	DATE	CONFIGURATION LEVEL	APPROVAL	REV DATE	
SEE SEPARATE PARTS LIST (FOR ASSEMBLY DWGS)		DIST TO				
FOR AMETEK USE	CONTRACT NO.		 AEROSPACE WILMINGTON, MA 01887			
ABBR WIRE						
F.M.F HOSKINS	APPROVALS	DATE	TITLE WIRE: THERMOCOUPLE, TYPE K POS / TYPE K NEG SINGLES			
MODEL VARIOUS	DRAWN TYPING	11/25/02				
MATERIAL	CHECKE K. Hunter	12/18/02				
	ISSUED D. Caloggero	12/18/02				
	ENGR W. Glasheen	11/25/02	SIZE A	CAGE CODE 97424	DWG NO. 8950A39	REV A
MS-WORD 97 FILE	RDA/ECO 9687	SCALE NONE	WEIGHT	SHEET 1 OF 3		

8950A39P001

DESCRIPTION:

17 AWG (19/30) TYPE K POSITIVE THERMOCOUPLE SINGLES IN ACCORDANCE WITH ASTM E 230 FOR TYPE K THERMOELEMENTS, AND TO MEET STANDARD LIMITS OF ERROR.

CONDUCTOR:

1. TYPE K POSITIVE STRANDS, (19/30) CONCENTRIC OR SMOOTH BUNCH. $\frac{3}{4}$ " MAX LEFT HAND LAY. STRANDING TO BE ADJUSTED TO MEET RESISTANCE REQUIREMENTS.
2. WRAP: 0.375 WIDE X 0.005 THICK 150 MICA TAPE (U.S. SAMICA CORP), NO OVERLAP, $\frac{1}{2}$ LAP
3. BRAID: H.I THOMPSON REFRASIL YT-100
4. BRAID: OWENS CORNING #S-2 FIBERGLASS, 150 – $\frac{1}{2}$ - 1 END, 636 BINDER.
5. BRAID: OWENS CORNING #S-2 FIBERGLASS, 150 – $\frac{1}{2}$ - 1 END, 636 BINDER.
6. DIP AND CURE: DUPONT LIQUID "H" HEAVY, SATURATION.

WIRE DIAMETER:

0.112-0.124

RESISTANCE:

2.114 TO 2.336 OHMS/10 FT @ 70°F

INSPECTION:

1. CHECK O.D.
2. CONTINUITY
3. QUALITY
4. MEASURE RESISTANCE
5. MEASURE EMF
6. FRAYING MAX 1/32 INCH 12 HRS FOLLOWING STRIPPING OR CUTTING.

EMF TESTING REQUIREMENTS

Two samples per spool if spool length is less than 2000 feet or two samples per 2000 feet of assembled thermocouple product of insulated K-Positive and K-Negative wires shall be subjected to the following test(s).

- (a) Weld an exposed section of insulated K-Positive and K-Negative wire leads together to form an exposed thermocouple junction. Calibrate at four points between 38°C (100°F) and 204°C (400°F), with a minimum increment of 42°C (75°F). After the temperature has stabilized, readings of the output data shall be taken once per minute for five minutes. The average of the readings shall be the final data value. The electrical output shall be within that specified in ASTM E230. Limits of error shall be standard limits.
- (b) The calibration test data shall be shown in a table referencing:
 - (1) Test temperature
 - (2) Indicated temperature of the sample
 - (3) Delta value from nominal
 - (4) Allowed delta value from nominal per limits of error identified by ASTM E230
 - (5) Spool number and/or lot number
- (c) Calibration measurement uncertainty shall not exceed $\pm 0.5^\circ\text{C}$ (0.9°F) within the range of 0°C to 204°C (32°F to 400°F).

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- (d) Reference ASTM E220 to allow gradients of oven temperature values to be combined with the electronic error values to arrive at one final system number.

8950A39P002

SAME AS 8950A39P001 EXCEPT:

WIRE IS TYPE K NEGATIVE CONDUCTOR PER ASTM E 230, STANDARD LIMITS OF ERROR.

RESISTANCE = 0.871 TO 0.963 OHMS/10 FT @ 70°F

CONDUCTOR:

6. DIP AND CURE: DUPONT LIQUID "H" HEAVY, COLOR GREEN.

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