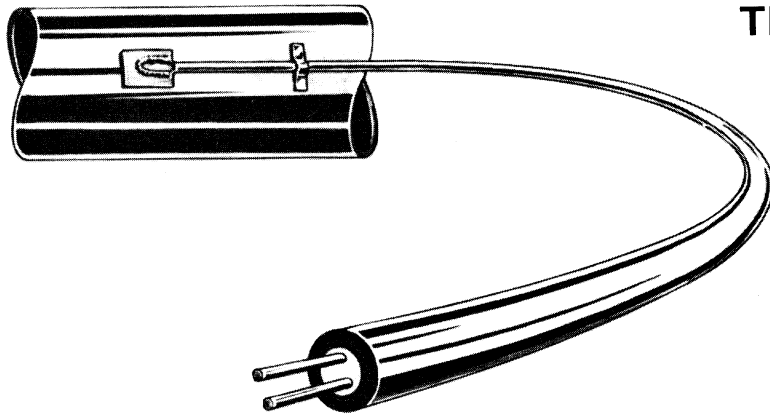


U. S. PATENT NO. 3,143,439

THERMOCOUPLES



SENSES TUBE SURFACE TEMPERATURE TO BETTER THAN $\pm 2\%$ ACCURACY

**AEROPAD, A PAD TYPE THERMOCOUPLE ESPECIALLY
DESIGNED FOR HIGHLY ACCURATE AND TROUBLE FREE
MEASUREMENT OF TUBE SKIN TEMPERATURE**

AerOpad Thermocouples are designed for welding direct to boiler or process tubes. They sense tube surface temperatures to 1100°C (2012°F) with a corrected accuracy of at least $\pm 2\%$. Normally furnished with a Type 310 stainless steel sheath over the compacted magnesium oxide insulation, with Chromel-Alumel wires. The thermocouples can be provided with a sheath of Hastelloy X Alloy for superior resistance to the most corrosive atmospheres. AerOpad Thermocouples are easy to install, yet rugged enough to withstand the roughest handling. They have a usable range of -240 to 1100°C (-400 to 2012°F.)

- FEATURES:**
- Cut Start-up Time
 - Minimize Fuel Waste
 - Increase Tube Life
 - Lower Maintenance Cost
 - Allow Complete Control of Flow and Fuel
 - Operating Safety
 - Increase Tube Reliability
 - Avoid Forced Boiler Shutdown
 - Prevent "Steam Starvation" of Superheater Tubes

ARI is a Registered US Trademark

ARI Industries Inc

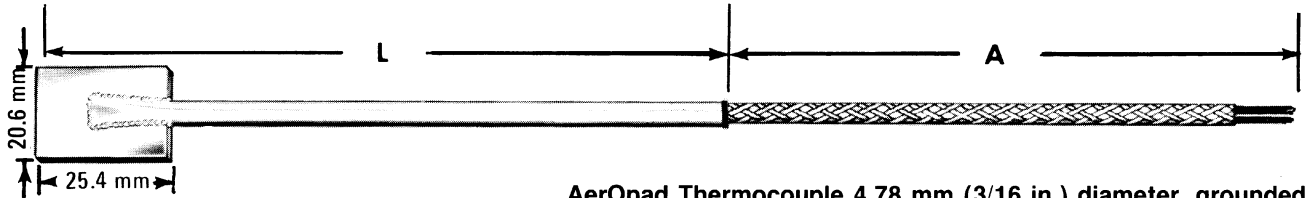
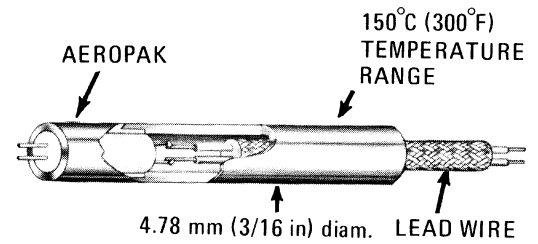
BULLETIN 3.0
August 1997

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AerOpad[®]

Thermocouples

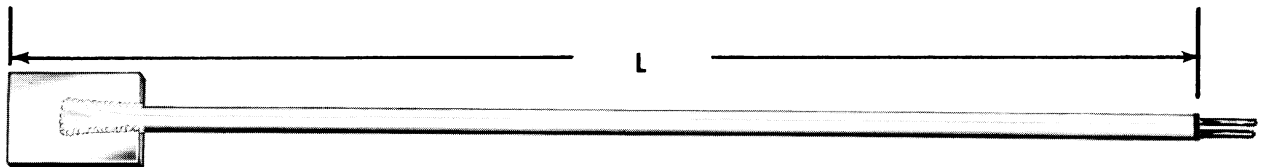
Stainless Steel Sheath Hastelloy X⁽¹⁾ Sheath



Catalog No. T-118N-(L)EK4(*) (A)

*D for 310 ST/ST Sheath
*V for Hastelloy X Sheath

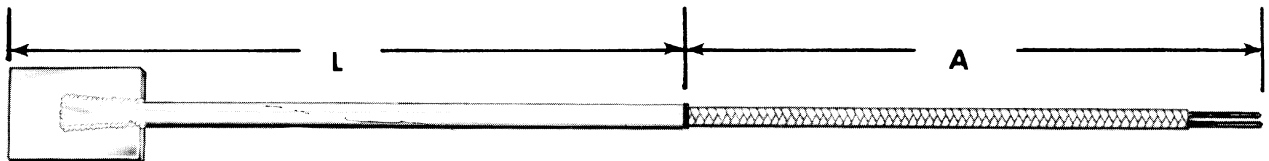
AerOpad Thermocouple 4.78 mm (3/16 in.) diameter, grounded Hot Junction AerOpad. Thermocouple wire — 20 ga AWG. Solid 20 gage lead wire fiberglass O/E, fiberglass O/A insulation. Lead wire (A) standard length 38.1 cm (16 in.)



Catalog No. T-119N-(L)EK4(*)

*D for 310 ST/ST Sheath
*V for Hastelloy X Sheath

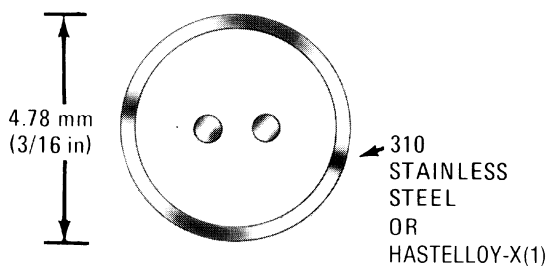
AerOpad Thermocouple 4.78 mm (3/16 in.) diameter, grounded Hot Junction AerOpad. Thermocouple wire — 20 ga AWG. Thermocouple lead wires bared at cold end for 7.62 cm (3 in.)



Catalog No. T-120N-(L)EK4(*) (A)

*D for 310 ST/ST Sheath
*V for Hastelloy X Sheath

AerOpad Thermocouple 4.78 mm (3/16 in.) diameter, grounded Hot Junction AerOpad. Thermocouple wire — 20 ga AWG. Stainless steel braid over solid 20 gage lead wire, insulation fiberglass O/E and fiberglass O/A. Lead wire (A) standard length 38.1 cm (16 in.)



20 gage AWG ANSI MC 96.1 Standard limits of error. Calibration Type:

K— Chromel-Alumel(2) with 310 Stainless Steel or Hastelloy x sheath.

J— Iron-Constantan with 310 Stainless Steel sheath only.

E— Chromel(2)-Constantan with 310 Stainless Steel Sheath only.

Compacted Ceramic (MgO)

310 Stainless Steel with type J, K & E wires or Hastelloy x sheath (for extra corrosion resistance) with type K wires only. Sheath diameter 4.78 mm (.188 in.).

Grounded Hot Junction Type 4

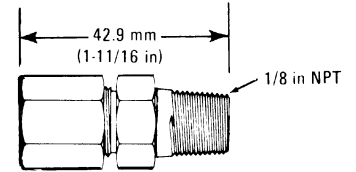
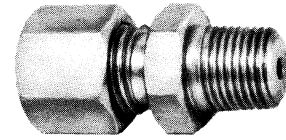
20.6 x 25.4 x 3.18 mm (1 x 3/4 x 1/8 in.). Supplied flat or curved to the following required radii: 12.7, 25.4, 50.80, 76.2, 101.60 mm (1/2, 1, 2, 3 or 4 in.).

(1) TM Cabot Corp.

(2) TM Hoskins Mfg. Co.

Hardware & Accessories

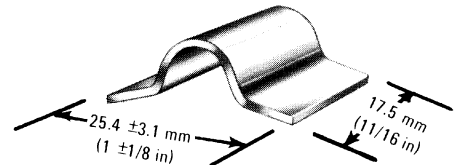
ADJUSTABLE ADAPTORS



Stainless Steel: Catalog No. PTM-E2-SS
Nickel Plated: Catalog No. PTM-E2APNI

SEE BULLETIN 6.0 FOR DETAILS

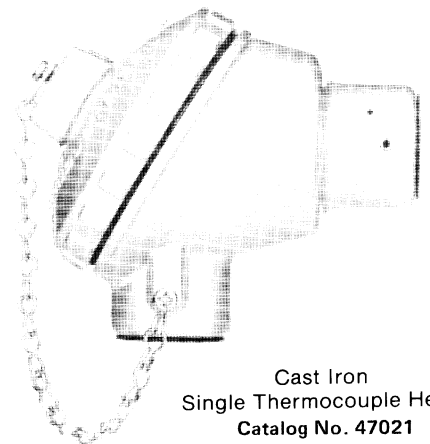
HASTELLOY X STRAPS



- For mounting AerOpad® Thermocouples to tubes.
- Order one for each meter (39 in) of tube attachment length.
- Allow for thermocouple expansion by welding strap to tube only.

Catalog No. 490108

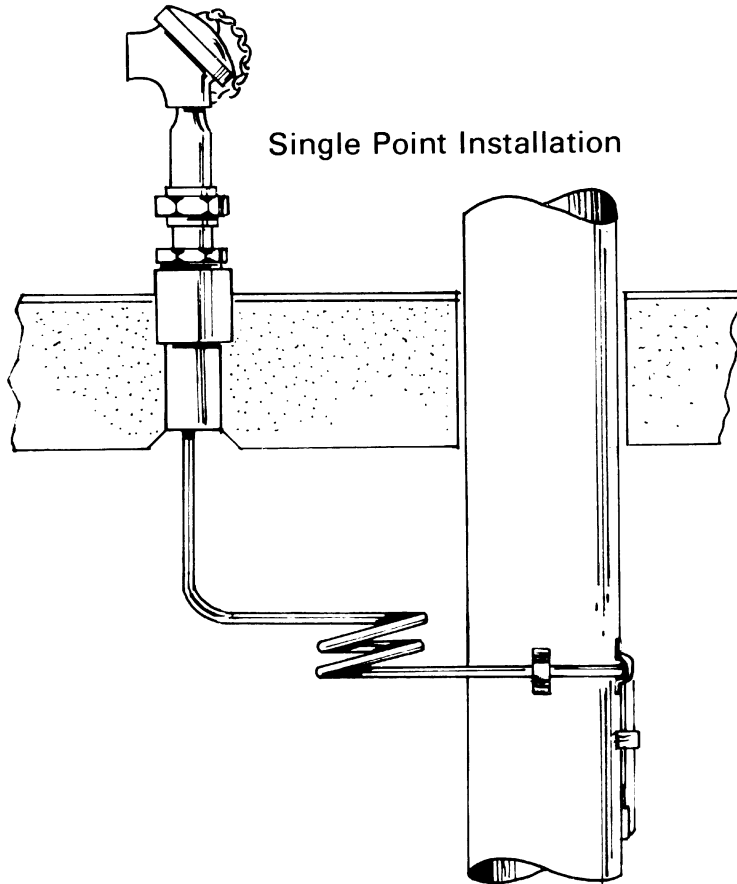
TYPE E THERMOCOUPLE HEAD



Cast Iron
Single Thermocouple Head
Catalog No. 47021

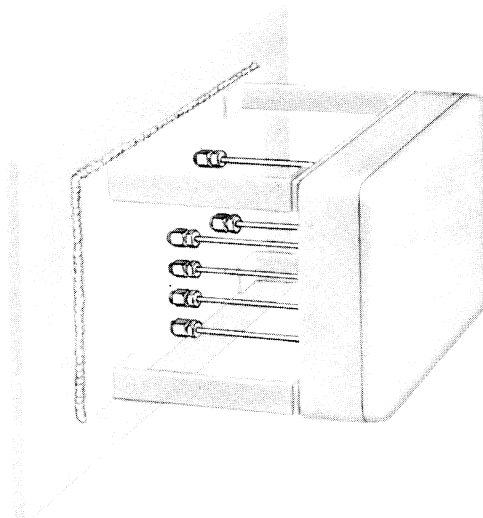
(3/4" NPT both sides to accommodate support nipple.)
SEE BULLETIN 6.0 FOR DETAILS

TYPICAL INSTALLATION APPLICATIONS:



Single Point Installation

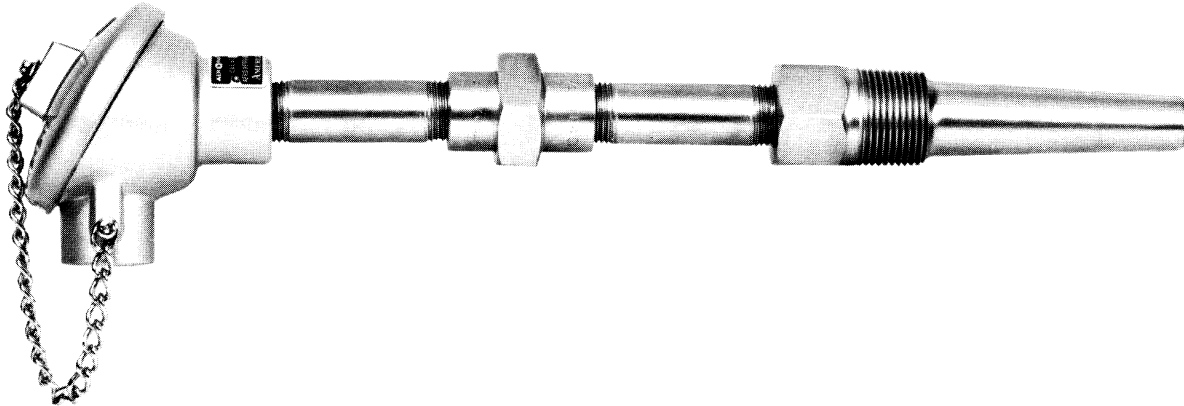
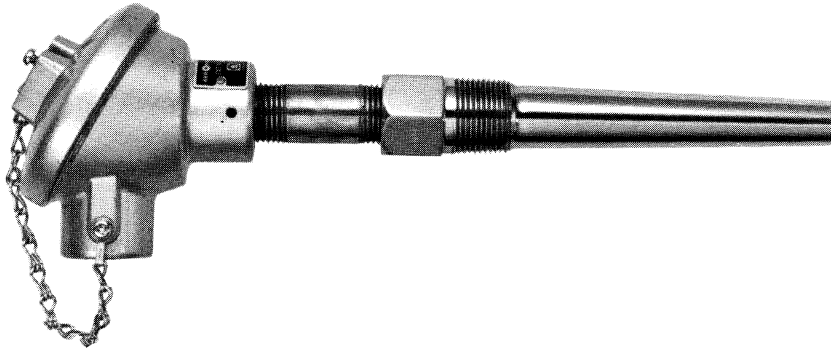
Multipoint Junction Box



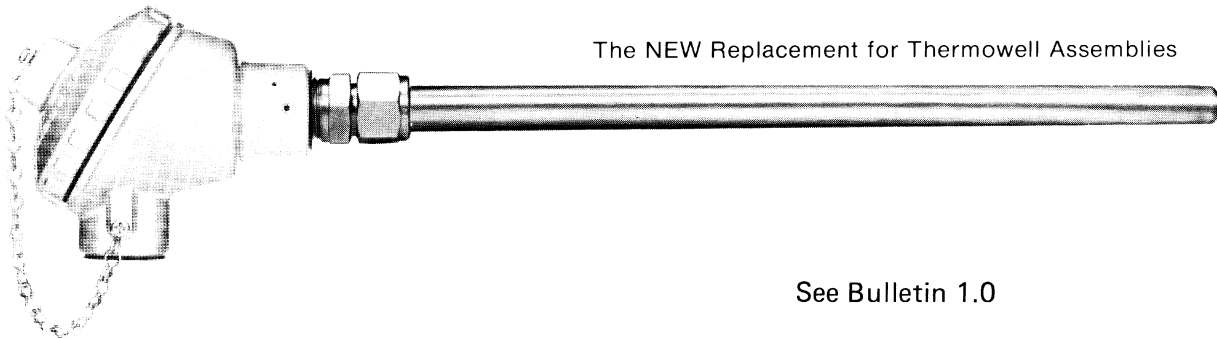
CONSULT OUR ENGINEERS FOR YOUR SPECIAL THERMOCOUPLE AND INSTALLATION REQUIREMENTS.

THERMOCOUPLE ASSEMBLIES:

WELL ASSEMBLIES



The NEW Replacement for Thermowell Assemblies



See Bulletin 1.0

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