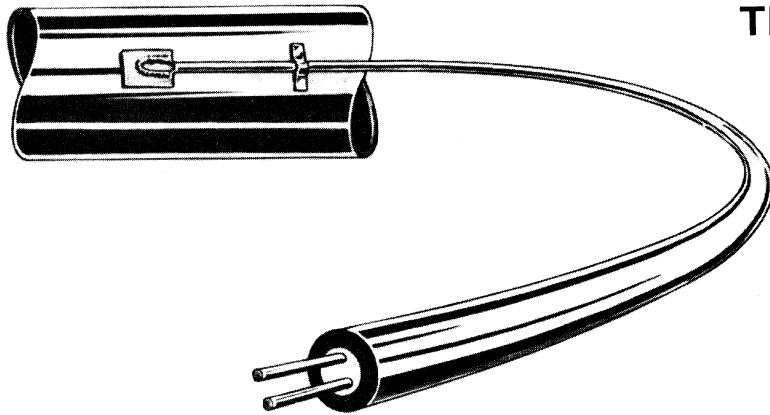


U.S. PATENT NO. 3,143,439

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

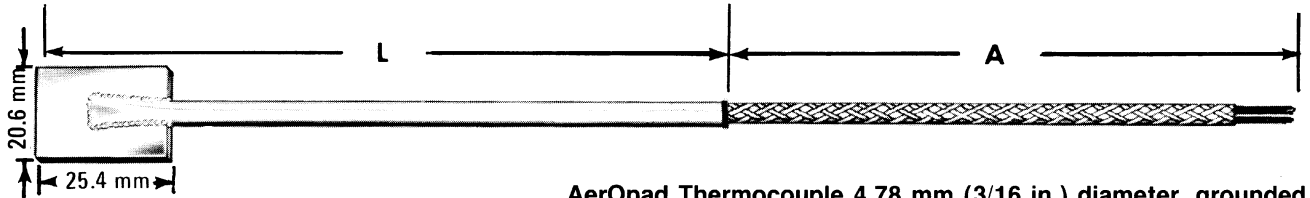
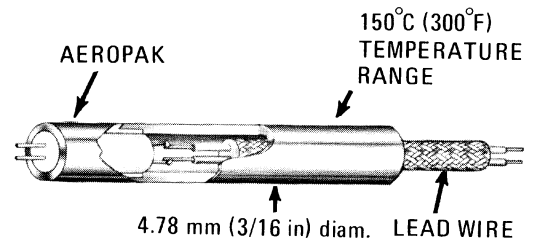
ARI Industries Inc

BULLETIN 3.0
August 1997

AerOpad[®]

Thermocouples

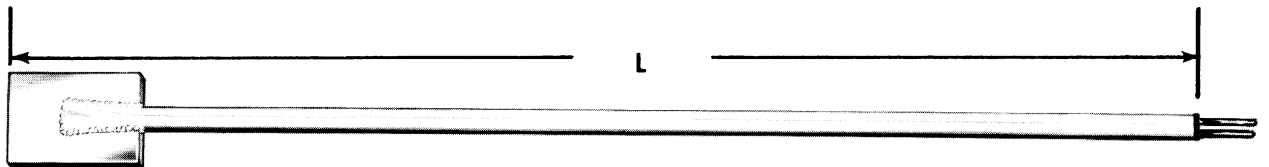
Stainless Steel Sheath Hastelloy X⁽¹⁾ Sheath



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

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

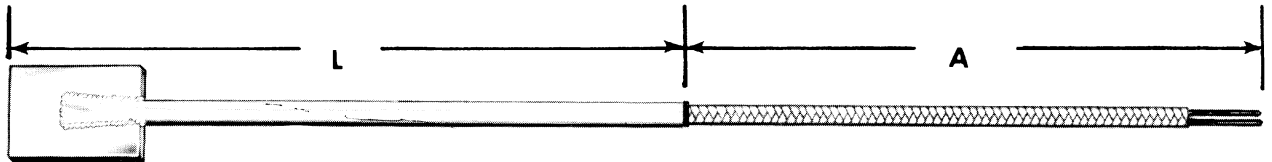
AerOpad Thermocouple 4.78 mm (3/16 in.) diameter, grounded Hot Junction AerOpad. Thermocouple wire — 20 ga AWG. Solid 20 gage lead wire fiberglass O/E, fiberglass O/A insulation. Lead wire (A) standard length 38.1 cm (16 in.)



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

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

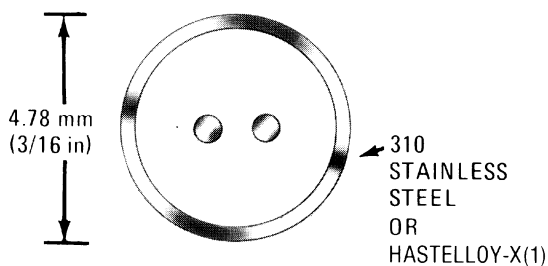
AerOpad Thermocouple 4.78 mm (3/16 in.) diameter, grounded Hot Junction AerOpad. Thermocouple wire — 20 ga AWG. Thermocouple lead wires bared at cold end for 7.62 cm (3 in.)



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

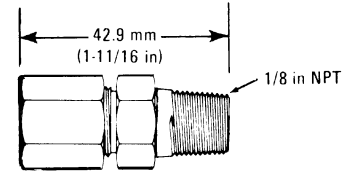
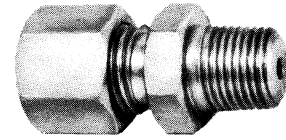
20.6 x 25.4 x 3.18 mm (1 x 3/4 x 1/8 in.). Supplied flat or curved to the following required radii: 12.7, 25.4, 50.80, 76.2, 101.60 mm (1/2, 1, 2, 3 or 4 in.).

(1) TM Cabot Corp.

(2) TM Hoskins Mfg. Co.

Hardware & Accessories

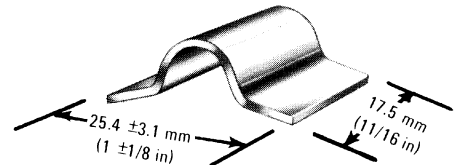
ADJUSTABLE ADAPTORS



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

SEE BULLETIN 6.0 FOR DETAILS

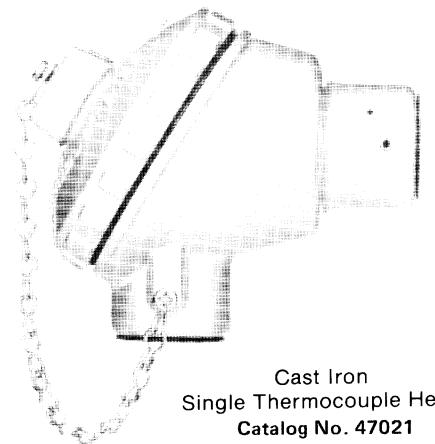
HASTELLOY X STRAPS



- 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

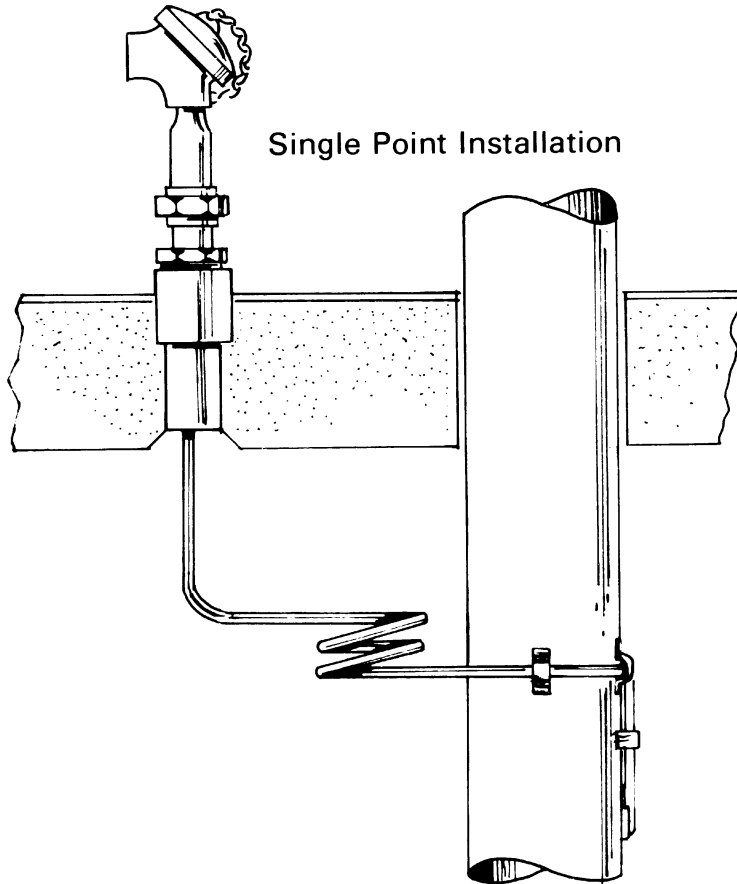
TYPE E THERMOCOUPLE HEAD



Cast Iron
Single Thermocouple Head
Catalog No. 47021

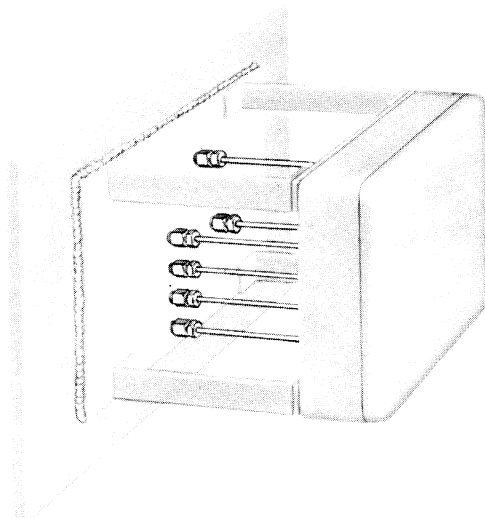
(3/4" NPT both sides to accommodate support nipple.)
SEE BULLETIN 6.0 FOR DETAILS

TYPICAL INSTALLATION APPLICATIONS:



Single Point Installation

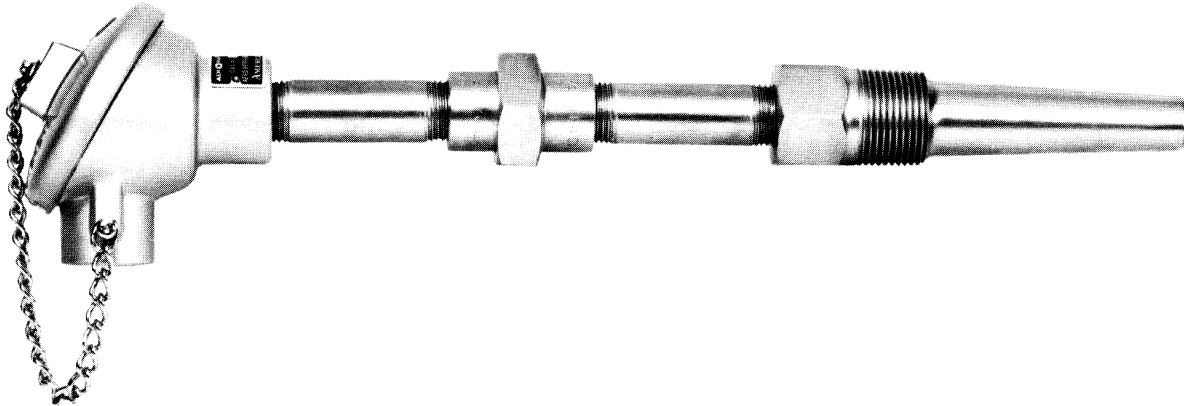
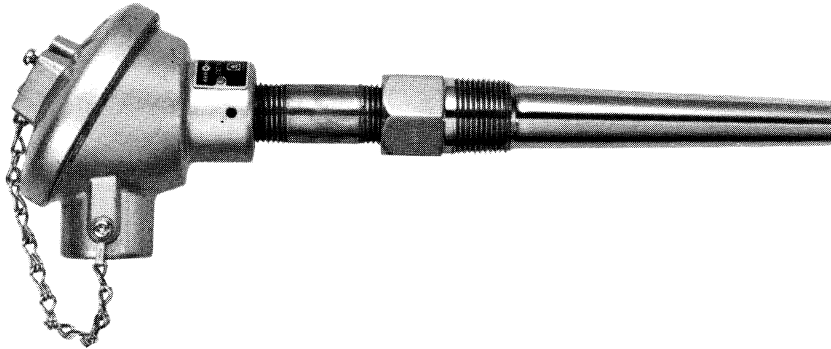
Multipoint Junction Box



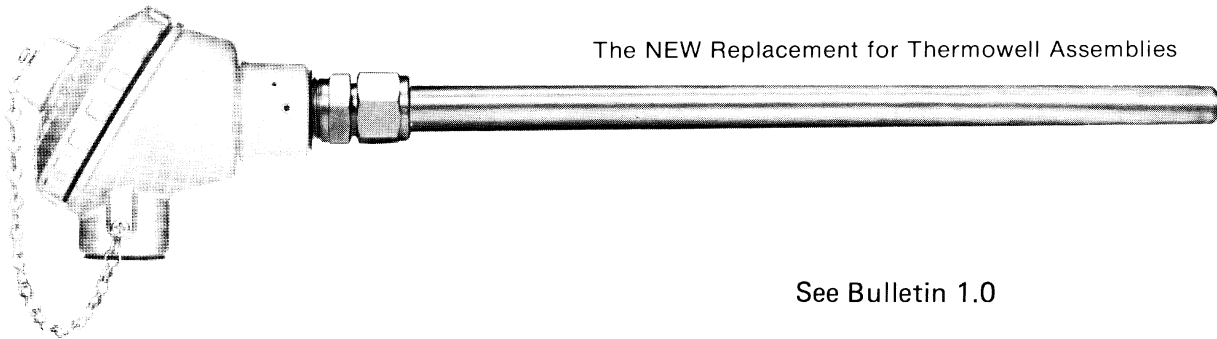
CONSULT OUR ENGINEERS FOR YOUR SPECIAL THERMOCOUPLE AND INSTALLATION REQUIREMENTS.

THERMOCOUPLE ASSEMBLIES:

WELL ASSEMBLIES



The NEW Replacement for Thermowell Assemblies



See Bulletin 1.0

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