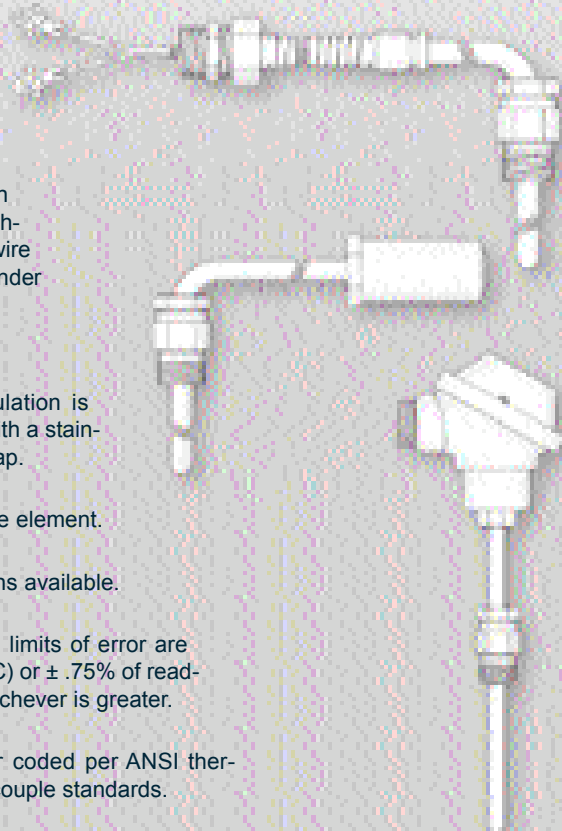


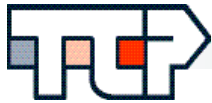
# Engine Thermocouples

TCP engine exhaust and compressor thermocouples are available in a variety of configurations to satisfy many different requirements. The standard calibrations are Iron/Constantan (Type J) and Chromel/Alumel (Type K); other calibrations are available upon request. Thermocouple wires are in a ceramic material that withstands high temperature, provides high conductivity, prevents wire vibration, and minimizes oxidation. This assures long life under severe conditions.

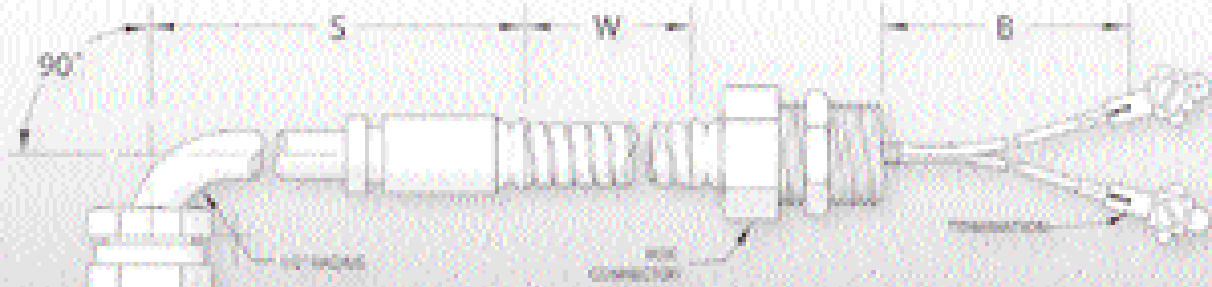
## Features

- Available in a wide variety of configurations.
- Standard wire insulation is glass over glass with a stainless steel overwrap.
- 310 stainless steel protection tubes in a variety of diameters: 1/2" O.D., 1/4" O.D., 3/16" O.D., 1/8" O.D.
- Dual and single element.
- MgO versions available.
- Tubes available in alloy 600 and 316 stainless steel.
- Standard limits of error are  $\pm 4^{\circ}\text{F}$  ( $2^{\circ}\text{C}$ ) or  $\pm .75\%$  of reading, whichever is greater.
- Fittings are standard process connection (1/2" NPT) or as specified.
- Color coded per ANSI thermocouple standards.
- Custom fittings are available.
- All thermocouple wire meets Standard Tolerances of ANSI Circular MC96.1-1982.
- Protective conduit is either flexible stainless steel or waterproof flexible galvanized steel with a high temperature rubber outer jacket.





Thermo-Couple Products Co.



**U Dimension**  
The length of the thermocouple containing the sensing element that is inserted into the exhaust manifold, water jacket, or any other chamber requiring temperature monitoring. This sensor reaches the center of the chamber.

**S Dimension**  
The length of the thermocouple extending out from the engine or manifold. Typically, this length is determined by the amount of clearance around the thermocouple. Standard length is 2".

**W Dimension**  
The length of the thermocouple conduit needed to reach the extension wire connection box. This is usually a standard electrical box mounted to the engine or on a nearby solid object, such as a strut.

**B Dimension**  
The length of wire extending from the box connector into the electrical box. Standard length is 3-3/4".

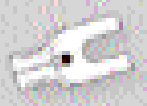
**Receptacle**  
Standard receptacle is a 1/2" NPT with a 1/2" hex for tightening into the engine mount. TCP can supply several different types of receptacles and hex lengths depending on the application requirements.

**Box Connector**  
Standard box connector is 1/2". Other sizes are available.

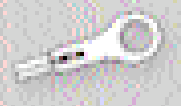
**Terminations**  
A large selection of terminations are available. The following selections have been standardized because of their popularity. Custom terminations are available.



A TCP terminal made from high quality 304 stainless steel with a 6-32 screw and lock washer. The positive terminal is clearly marked for easy extension wire hook-up. The terminal is resistance-welded, then crimped to the thermocouple wire to ensure a rugged connection that is reliable and secure in the harshest environments.



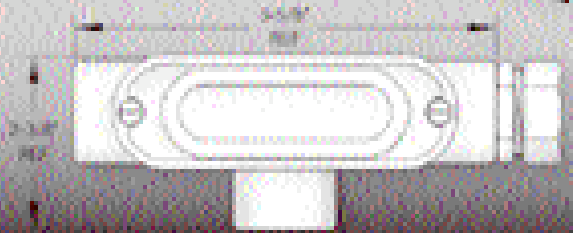
A No. 5 copper spade terminal lug with tin plating. The terminal is crimped and soldered to the thermocouple wire. This is used when the thermocouple is connected to a buss-bar terminal with limited access.



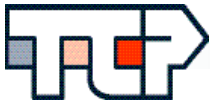
A No. 10 copper ring terminal lug with tin plating. The terminal is crimped and soldered to the thermocouple wire. This is used when the thermocouple is connected to a buss-bar terminal with easy access.



No termination, 1/2" of insulation is removed to expose the thermocouple wire, giving you a choice of terminations.



A die-cast electrical box is supplied with a standard 1/2" conduit connector that can be used on either side of the box. The top of the electrical box has a removable cover and gasket for easy access to wire connections. It is used where electrical boxes are not supplied, or as a replacement for original equipment.

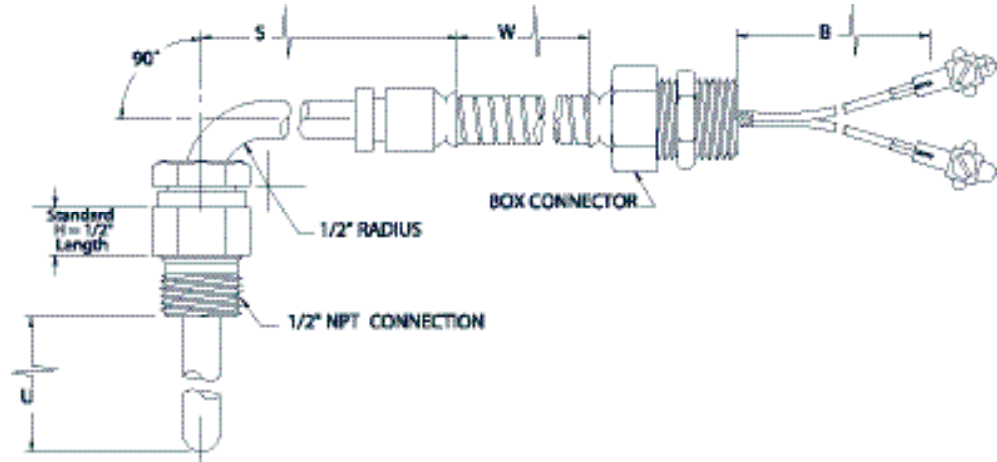


Thermo-Couple Products Co.

# ENGINE THERMOCOUPLE

## Model 1118 Heavy-Duty

- High Temperature Glass Braid Insulation
- Braided Stainless Steel Overwrap
- 3/8 in. O.D. 310 Stainless Steel Protection Tube
- 1/2 in. O.D. Flexible 304 Stainless Steel Protection Conduit



### Typical Part Numbers:

Single Element

**662-017-000-XXX**

Dual Element

**662-018-000-XXX**

Enter a description for each item, please fax your inquiry to TCP.

Example: 1118 - J - SE - U6.5 - S6.5 - 024 - B - B - B

1118 -  -  -  -  -  -  -  -

#### CALIBRATION:

J  
K

#### ELEMENT CONSTRUCTION

SE = Single Element  
DE = Dual Element

#### INSERTION LENGTH (U)

Minimum = 1-3/8"  
Maximum = 15" Insertion Length  
**Enter U and Insertion Length**  
Example: U6.5 = 6.5" insertion length

#### EXTENSION LENGTH (S)

Standard = 2" @ 90°, 1-3/4" @ 180°  
Maximum = 12"  
**Enter S and Extension Length**  
Example: S6.5 = 6.5" extension length

#### CONDUIT LENGTH (W)

Minimum 008 = 8"  
**Enter 3 digits**  
Example: 024 = 24"

#### TUBE BEND

B = 90°  
S = 180°

#### TERMINATION (B)

Standard Length is 3-3/4"  
A = No Termination, 1/2" bare wire  
B = Screw Lug  
C = Spade Lug No. 5  
D = Ring Lug No. 10  
E = Box/Screw Lug  
F = Box/Spade Lug No. 5

#### RECEPTACLE HEX LENGTH

Standard Length is 1/2"  
A = 1/2"  
B = 3/4"  
C = 1-3/16"  
D = 1-1/2"  
E = 1-3/4"  
F = 3-1/4"

Engine Thermocouples

#### Metric Orders Welcome

Place an **mm** in the appropriate selection box:

Also available in RTD

Please contact the factory for more information.

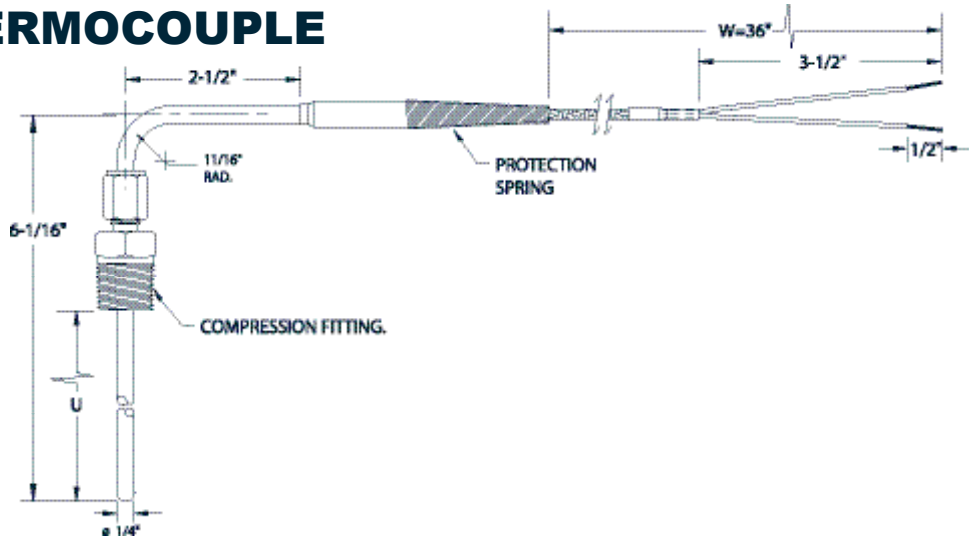
# ENGINE THERMOCOUPLE

## Model 1112 Heavy-Duty

- 1/4 in. O.D. 316 Stainless Steel Protection Tube
- High Temperature Glass Braid or Teflon Insulation.
- Braided Stainless Steel Overwrap
- Available with Different Size Compression Fittings
- Different (U) and (W) Dimensions Available Upon Request. Maximum (U) dimension = 8-1/4"

### Typical Part Numbers:

Single Element  
**662-300-000-XXX**



Enter a description for each item, please fax your inquiry to TCP.

1112 -  -  -  -

1112 -  -  -  -

**CALIBRATION:**  
**J**  
**K**

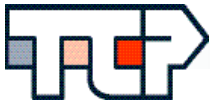
**ELEMENT CONSTRUCTION**  
**U = Ungrounded**  
**G = Grounded**

**WIRE TYPE AND INSULATION**  
**A =** Solid wire with glass braid over glass braid and stainless steel overwrap.  
**B =** Solid wire with teflon over teflon and stainless steel overwrap.  
**C =** Stranded wire with glass braid over glass braid and stainless steel overwrap.  
**D =** Stranded wire with teflon over teflon and stainless steel overwrap.

**COMPRESSION FITTING**  
**STAINLESS STEEL**  
**A =** 1/2" - 14 NPT  
**B =** 1/4" - 18 NPT  
**C =** 1/8" - 27 NPT

Also available in RTD  
 Please contact the  
 factory for more  
 information.

**Metric Orders Welcome**  
 Place an **mm** in the  
 appropriate selection  
 box:



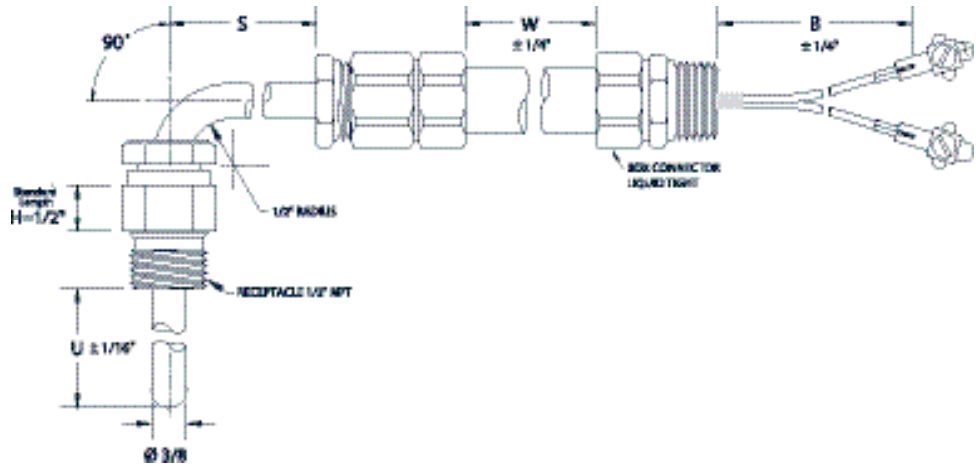
Thermo-Couple Products Co.

# ENGINE THERMOCOUPLE

## Model 3660 Waterproof

- High Temperature Thermoplastic Rubber Extruded Cover Protects Sensor from Liquid Contamination.
- Glass Braid Insulation with Stainless Steel Overwrap
- 3/8 in. O.D. 316 Stainless Steel Protection Tube
- Galvanized Steel Core Protection Conduit

Typical Part Numbers:  
Single & Dual Element  
**662-015-000-XXX**



Enter a description for each item, please fax your inquiry to TCP.

Example: 3660 - J - SE - U6.5 - S6.5 - 09 - B - S - B - A

3660 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

### CALIBRATION:

J  
K

### ELEMENT CONSTRUCTION

SE = Single Element  
DE = Dual Element

### INSERTION LENGTH (U)

Minimum = 1-3/8"  
Maximum = 15" Insertion Length  
**Enter U and Insertion Length**  
Example: U6.5 = 6.5" insertion length

### EXTENSION LENGTH (S)

Standard = 2" @ 90°, 1-3/4" @ 180°  
Maximum = 12"  
**Enter S and Extension Length**  
Example: S6.5 = 6.5" extension length

### CONDUIT LENGTH (W)

Minimum 08 = 8"  
**Enter 2 digits**  
Example: 09 = 9"

### RECEPTACLE HEX LENGTH

Standard Length is 1/2"  
A = 1/2"  
B = 3/4"  
C = 1-3/16"  
D = 1-1/2"  
E = 1-3/4"  
F = 3-1/4"

### TERMINATION (B)

Standard Length is 3-3/4"  
A = No Termination, 1/2" bare wire  
B = Screw Lug  
C = Spade Lug No. 5  
D = Ring Lug No. 10  
E = Box/Screw Lug  
F = Box/Spade Lug No. 5

### BOX CONNECTOR

B = 90°  
S = 180°

### TUBE BEND

B = 90°  
S = 180°

Engine Thermocouples

### Metric Orders Welcome

Place an **mm** in the appropriate selection box:

100 mm

Also available in RTD

Please contact the factory for more information.

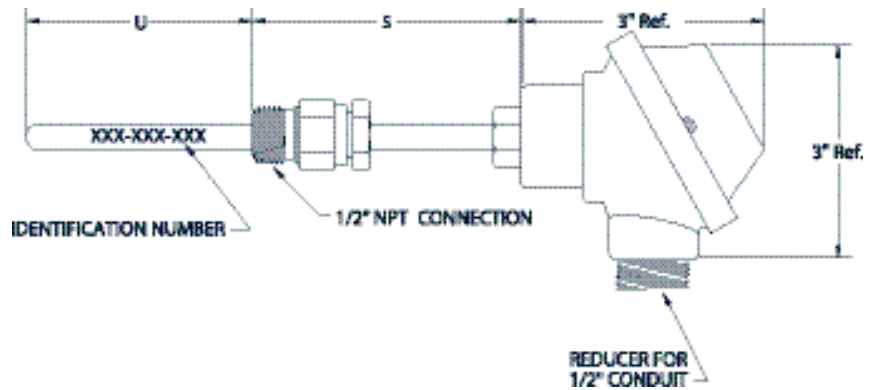
# ENGINE THERMOCOUPLE

## Model 780 Heavy-Duty

- 3/8 in. O.D. 316 Stainless Steel Protection Tube
- Terminal Block is Easily Accessible for Extension Wire Connection

### Typical Part Numbers:

Single Element  
**662-002-000-XXX**  
 Dual Element  
**662-003-000-XXX**



Enter a description for each item, please fax your inquiry to TCP.

Example: 780 -  -  -  -  -

780 -  -  -  -  -

#### CALIBRATION:

J  
K

#### ELEMENT CONSTRUCTION

SE = Single Element  
 DE = Dual Element

#### INSERTION LENGTH (U)

Minimum = 1-3/8"  
 Maximum = 15" Insertion Length  
**Enter U and Insertion Length**  
 Example: U6.5 = 6.5" insertion length

#### RECEPTACLE HEX LENGTH

Standard Length is 1/2"  
**A = 1/2"**  
**B = 3/4"**  
**C = 1-3/16"**  
**D = 1-1/2"**  
**E = 1-3/4"**  
**F = 3-1/4"**

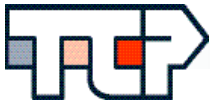
#### EXTENSION LENGTH (S)

Standard = 2-1/2"  
 Maximum = 12"  
**Enter S and Extension Length**  
 Example: S6.5 = 6.5" extension length

Also available in RTD  
 Please contact the  
 factory for more  
 information.

#### Metric Orders Welcome

Place an **mm** in the  
 appropriate selection  
 box:



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# ENGINE THERMOCOUPLE

## Model 1033 Heavy-Duty

- For Installations where a Conduit Connection is Undesirable
- Compact Unit with Snap-on Terminal Head
- 1/4 in. or 3/8 O.D. 310 Stainless Steel protection tube
- Compression Fitting Available Upon Request

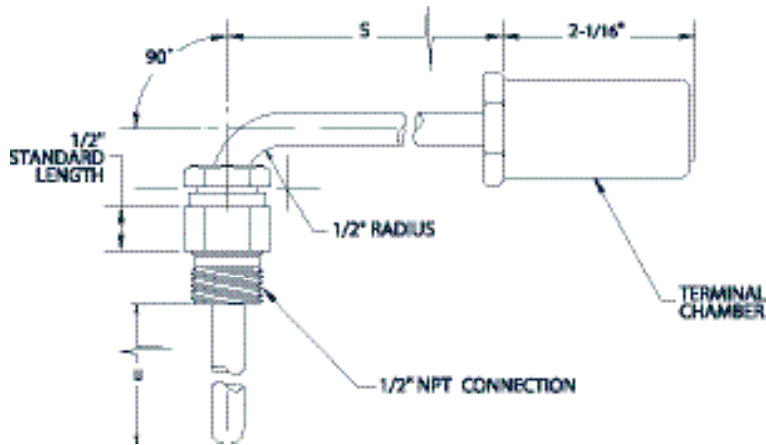
### Typical Part Numbers:

Single Element

**662-010-000-XXX**

Dual Element

**662-011-000-XXX**



Enter a description for each item, please fax your inquiry to TCP.

Example: 1033 - J - DE - U6.5 - S6.5 - B - B - A

1033 - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

### CALIBRATION:

J  
K

### ELEMENT CONSTRUCTION

SE = Single Element  
DE = Dual Element

### INSERTION LENGTH (U)

Minimum = 1-3/8"  
Maximum = 15" Insertion Length  
Enter U and Insertion Length  
Example: U6.5 = 6.5" insertion length

### RECEPTACLE HEX LENGTH

Standard Length is 1/2"

A = 1/2"  
B = 3/4"  
C = 1-3/16"  
D = 1-1/2"  
E = 1-3/4"  
F = 3-1/4"

### TUBE O. D.

A = 1/4" - SINGLE ELEMENT ONLY  
B = 3/8"

### TUBE BEND

B = 90°  
S = 180°

### EXTENSION LENGTH (S)

Standard = 2" @ 90°, 1-3/4" @ 180°  
Maximum = 12"

Enter S and Extension Length  
Example: S6.5 = 6.5" extension length

Engine Thermocouples

### Metric Orders Welcome

Place an mm in the appropriate selection box:

100 mm

Also available in RTD

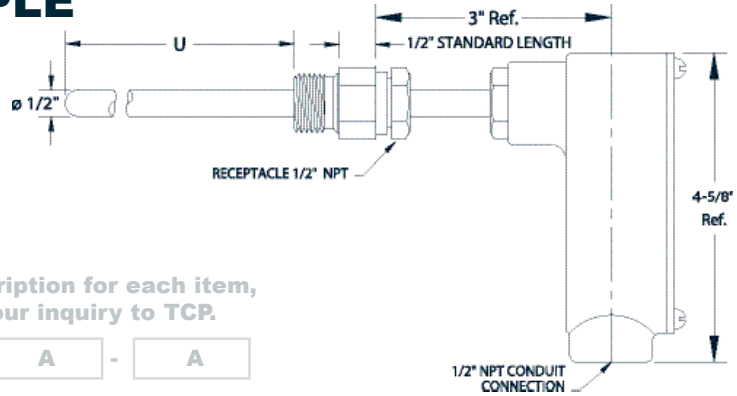
Please contact the factory for more information.

# ENGINE THERMOCOUPLE

## Model 767 Heavy-Duty

- Ideal for Environments with Extreme Vibration and Corrosion
- 1/2 in. O.D. 316 Stainless Steel Protection Tube
- Terminal Block is Easily Accessible for Extension Wire Connection
- Ungrounded Element

Typical Part Numbers:  
Single Element  
**662-001-000-XXX**



Enter a description for each item, please fax your inquiry to TCP.

Example: 767 -  -  -

767 -  -  -

**CALIBRATION:**

J  
K

**INSERTION LENGTH (U)**

A = 4-1/8"  
B = 5-1/8"

**RECEPTACLE HEX LENGTH**

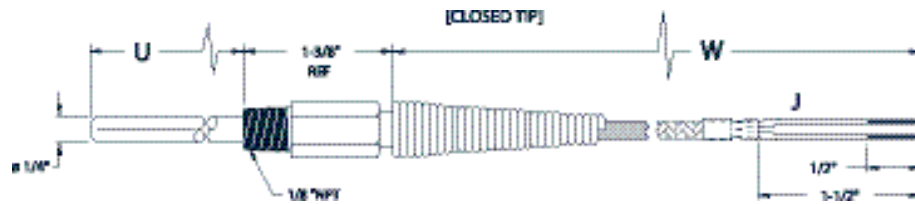
Standard Length is 1/2"

A = 1/2"  
B = 3/4"  
C = 1-3/16"  
D = 1-1/2"  
E = 1-3/4"  
F = 3-1/4"

## Model 3810 Bearing Thermocouple

- Ideal for Engine and Compressor Service
- Spring-loaded for Superior Bearing Contact
- Strain-Relieved Wire to Eliminate Thermocouple Breakage from Vibration
- High-Temperature Teflon with Braided Stainless Steel Overwrap
- 1/4 in. O.D. 304 Stainless Steel Protection Tube
- Identification: Model #, Sales Order #, or Customer #

Typical Part Numbers:  
J Element  
**662-041-000-XXX**  
K Element  
**662-041-050-XXX**



Enter a description for each item, please fax your inquiry to TCP.

Example: 3810 -  -  -

3810 -  -  -

**CALIBRATION:**

J  
K

**INSERTION LENGTH (U)**

Minimum = 1-3/8"  
Maximum = 15" Insertion Length  
A = 1-3/8" Grounded  
B = 2-3/4" Grounded  
C = 3-7/8" Grounded  
D = 6-1/4" Grounded  
E = 7" Grounded  
F = 3-15/16" Ungrounded  
G = 3-3/4" Grounded  
H = 3-3/4" Ungrounded

**WIRE LENGTH**

Minimum Wire Length 060 = 60" (5ft.)  
Enter 3 digits  
Example: 072 = 72" Wire Length

**Metric Orders Welcome**

Place an **mm** in the appropriate selection box:

**Also available in RTD**

Please contact the factory for more information.