NOBLE METAL THERMOCOUPLE WITH SECONDARY PROTECTION TUBE & MOUNTING FLANGE

How to build a part number:

To order an Applied Sensor Technologies temperature sensor, select the requirements for the categories listed below and fill in the corresponding boxes with your selection. Don't see exactly what you need? Give us a call!

SENSOR TYPE	STYLE	PROTECTION TUBE CONFIGURATION	CALIBRATION	WIRE GAUGE	BEAD MATERIAL	OUTER PROTECTION TUBE LENGTH	OPTIONS

SENSOR TYPE
BTC – Beaded construction

STYLE
81F – **Noble metal element with primary and secondary protection tubes**; mounting flange process attachment; NEMA 4 aluminum terminal head and ceramic terminal block; 3/4" NPT conduit connection; gasketed screw cover with stainless steel chain

PROTECTION TUBE CONFIGURATION
(e.g., **9C5A** = 1.75" O.D. silicon carbide protection tube with 4-7/8" mounting flange and alumina inner protection tube)

Outer protection tube diameter
9 - 1-3/4" O.D.

Outer protection tube material
C - Silicon carbide, oxide bonded*
***** Other grades of silicon carbide available upon request. Consult AST.

Flange size
5 - 4-7/8" O.D.

Inner protection tube material
A – Alumina (98.8% aluminum oxide)
M – Mullite (not recommended over 1200°C)

CALIBRATION

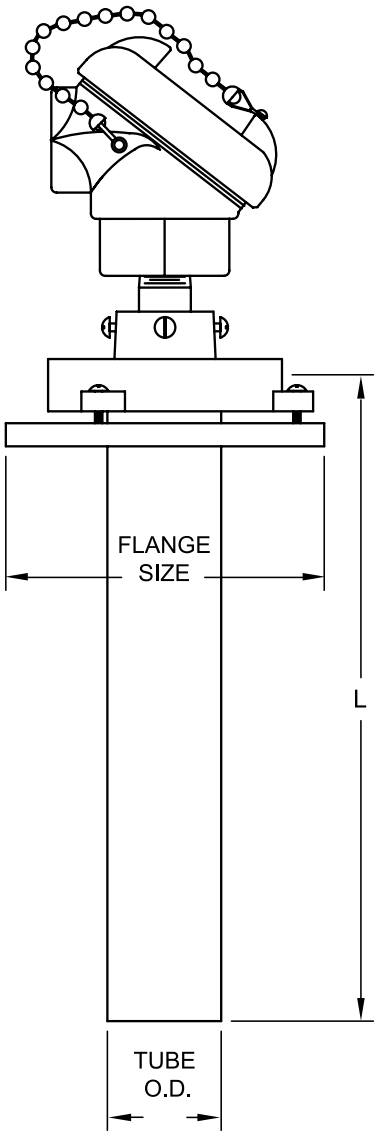
Single junction	Dual junctions
R – Platinum and Platinum/13% Rhodium	**RR**
S – Platinum and Platinum/10% Rhodium	**SS**
B – Platinum/6% Rhodium and Platinum/30% Rhodium	**BB**

WIRE GAUGE
24 – 24 AWG

BEAD MATERIAL
A – Alumina beads (0.125" OD for single junction, 0.188" for dual)

OUTER PROTECTION TUBE LENGTH
L# – (e.g., L12 = 12" outer protection tube length)

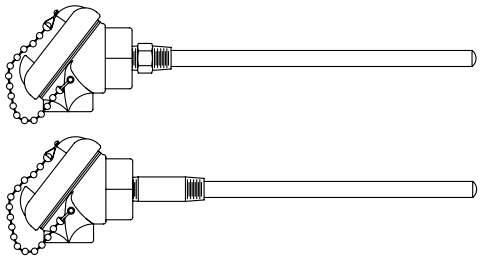
OPTIONS – see back page



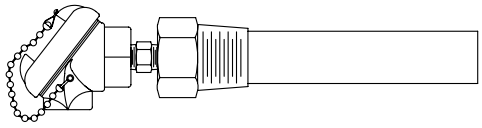
ASSEMBLY OPTIONS	
Option Code	Description
TAG1	Stainless steel tag and wire
CAL1	NIST traceable calibration [specify point(s)]
CRT1	Certificate of conformance
RB10	Replace terminal block with customer supplied part
RB11	Supply assembly with no terminal block inside head
WC20	Wiring cable gland for 0.187 - 0.312 diameter cables, for terminal heads with 1/2" NPT conduit connections
WC21	Wiring cable gland for 0.125 - 0.187 diameter cables, for terminal heads with 1/2" NPT conduit connections

For additional Noble Metal Thermocouple styles, see:

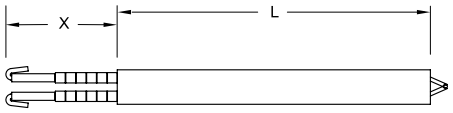
Style 81N – Single, primary protection tube only



Style 81B – Secondary tube with mounting bushing



Style 51 – Replacement Sensor



TERMINAL HEAD OPTIONS

NEMA 4 OR 4X TERMINAL HEAD OPTIONS			
Head without ground screw	Head with internal ground screw	Process Connection	Conduit Connection
Cast aluminum, screw cover with chain, NEMA 4			
HD10*	HD11*	1/2"	1/2"
Std.*	HD13*	1/2"	3/4"
Epoxy-coated aluminum, screw cover with chain, NEMA 4X			
HD50*	HD51*	1/2"	1/2"
HD52*	HD53*	1/2"	3/4"
Cast iron, screw cover with chain, NEMA 4			
HD20*	HD21*	1/2"	1/2"
HD22*	HD23*	1/2"	3/4"
316 stainless steel, screw cover with chain, NEMA 4X			
HD40*	HD41*	1/2"	3/4"
White polypropylene, screw cover with chain, NEMA 4			
HD30	N/A	1/2"	3/4"
Black polypropylene, screw cover with chain, NEMA 4			
HD31	N/A	1/2"	3/4"
Nylon, screw cover			
HD32	N/A	1/2"	1/2"
*can be used with transmitters			

TRANSMITTERS – For complete specs, see Transmitters section	
TR11	4-20 mA, 2-wire transmitter, single input, isolated output; specify range, units of measure (e.g., 0-200°C) and optional terminal head with *.
TR12	4-20 mA, 2-wire transmitter, single input, non-isolated output; specify range and units of measure (e.g., 0-200°C) and terminal head with *.
TR13	HART®/ 4-20 mA, 2-wire transmitter, single input, isolated output; specify range and units of measure (e.g., 0-200°C) and terminal head with *.

Notes:

1. Applied Sensor Technologies recommends alumina protection tubes when using platinum thermocouples. Mullite, although less expensive when compared to alumina, can contaminate the platinum, causing drift.
2. In many cases platinum thermocouples can be recycled, thereby reducing the long-term overall cost. Please contact Applied Sensor Technologies for further information.
3. Applied Sensor Technologies offers many other temperatures sensor designs and technologies, including base metal thermocouples, RTDs, thermistors and Integrated Circuit chips, along with a full line of accessory items such as thermowells, transmitters, etc. Please visit our website or contact us for further information.