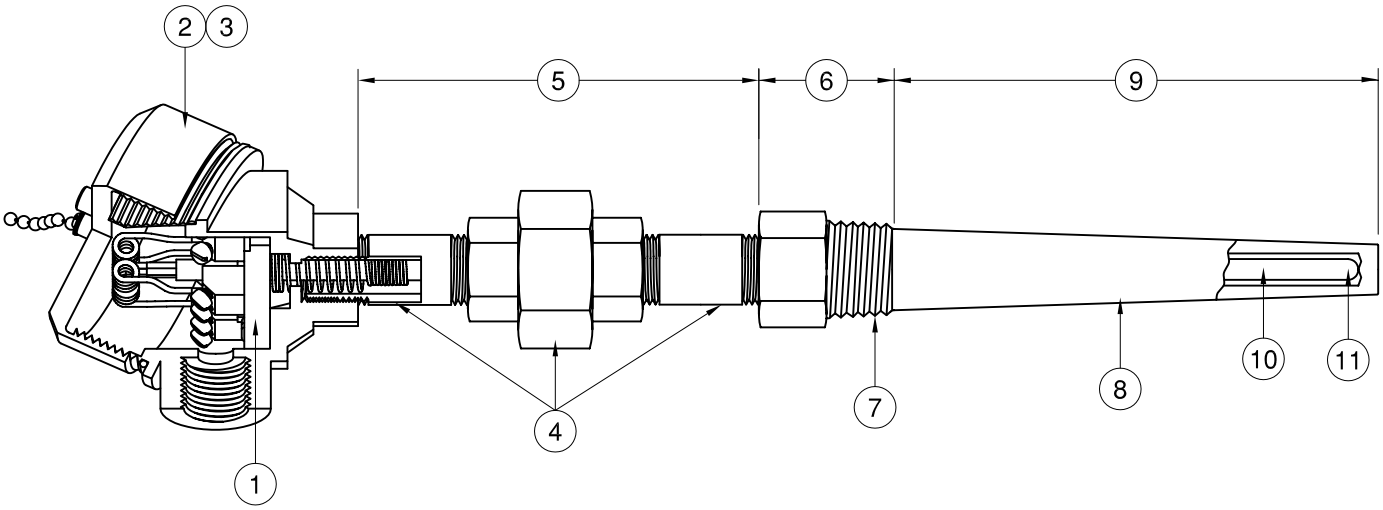
INTRODUCTION



(1) Terminals: Brass terminal posts are mounted on a polarity marked ceramic base to insure a positive, well insulated connections between the sensor and extension wires. Blocks are provided in standard 4 posts for single, duplex thermocouples, 3 and 4 wire single RTD's and 6 post for duplex 3 wire RTD's.

(2) Connection Head: This is the housing to protect the terminals from the harsh environments usually found in industrial applications. It is also is the termination point for the T/C wires. The threaded cover is fully gasketed for weatherproofing. The cover is chained to prevent loss.

(3) Head Type: Materials vary to suit your needs including lightweight polypropylene, aluminum, stainless steel, rugged cast iron or explosion proof certified to FM, CSA or ATEX. Conduit opening is usually 3/4"NPT or M20 x 1.5, dual conduits are available.

(4) Head To Well Connection: Four types of head to well extensions are illustrated as follows:

Type 1
Connection Head Only. Mounts directly into pipe wells or ceramic tubes with double ended fitting. The head opening can accommodate various sizes.

Type 2
Connection Head, Extension Nipple. Required for all standard bar stock wells which are internally threaded (usually 1/2" NPT). Nipples are available from close length. (A length) to provide minimum distance between head and well to over twenty feet long.

Type 3
Connection Head, Extension Nipple, Union. Increases the extension (A length) for pipe wells and ceramic tubes with double ended fitting. Union also provides the means to position the head for acceptance of rigid conduit tubing.

Type 4 Connection Head, Nipple, Union, Nipple. For internally threaded wells, the union provides the means to position the head for acceptance of rigid conduit tubing. Type 4 requires a minimum of 2" A length.

(5) "A" Length: Total length of the nipple extension. Available in many standard lengths or custom made to specified configuration and length.

(6) " F Length: F length is from start of the process connection to the top of the thermowell, usually 1.75" for standard threaded thermowells and 2.25" for flanged thermowells. Longer F lengths are desired to extend the thermowell beyond firebrick or other insulating materials.

(7) Process Connection: This is the installation end of the assembly. Process mounting configurations available include: screwed, flanged, Van Stone, socket and weld-in.

(8) Thermowell: The protective housing for the sensor, designed for immersion into the process. Generally turned down from a single piece of bar stock or made from pipe. Full description would include: Type of thermowell, material, process connection, diameter at tip, bore size, construction and length. Special hydrostatic tests, MURDOCK stress analysis and X - ray inspection can be performed when the thermowell is to be installed in critical service areas. Factors affecting the choice of material and type of thermowell would include the process temperature, corrosiveness of the medium being measured, velocity of the flow, pressure, style of connection, insertion length, and overall length.

(9) "U" Dimension: This is the length of the sensor to be inserted into the process. There are standard lengths in each of the different constructions that are readily available from stock. Any special design or length can be quickly fabricated once we are given all the needed dimensions.

(10) Sensing Element: This is most commonly a replaceable thermocouple or RTD. The element is the actual sensor used to measured temperature. Various measuring junctions, sheath materials or calibrations are available. The calibration should match your instrumentation and process requirements.

(11) Measuring Junction: This is the so called "hot junction" of the thermocouple sensor or "business end" of the RTD. Thermocouple junctions are available grounded to the sheath, ungrounded to prevent noise interference or exposed loop for a quicker response time. The RTD contains a wire wound bulb encapsulated in CERAMO or a thin film potted inside a stainless steel tube. Thermocouples and RTD's or available in both single and duplex construction.