

## Flush Mount RTDs

▶ APPLICATION

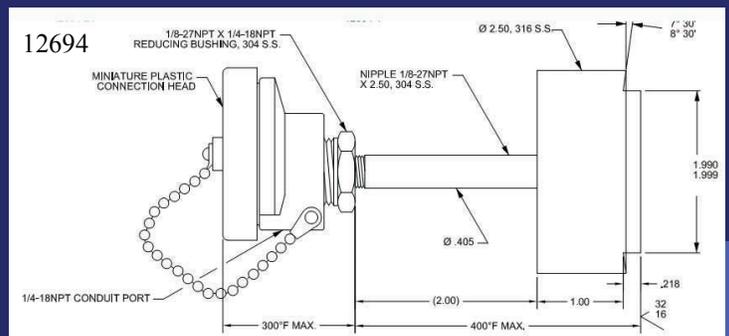
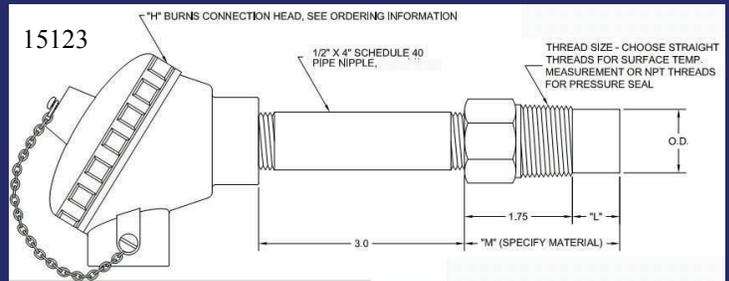
It's not always possible to immerse a temperature probe into a process and a surface mount sensor may not provide the needed accuracy. For those a flush mount sensor may be the best solution. Mixing tanks with blades that scrape the interior or a pipeline carrying a viscous fluid at high velocity are examples of processes that may benefit from a flush mount style sensor. Improved accuracy and a faster time constant are two features of this style sensor resulting from allowing intimate contact with the process fluid.

▶ CHALLENGE

Isolating the sensor from the vessel or pipe wall temperature conduction effects was a major design consideration. Other considerations are balancing the material strength (thickness for the most part) to maintain an adequate pressure rating for the process. Some applications require a speedy time constant and that requires the designer to minimize the material surrounding the sensing element. Durability of the sensing element is always an important consideration that factors into the design balancing act of mechanical strength, conduction, and time response.

Sensor mounting configuration varies from threaded to sanitary clamp style configurations. Installation typically requires cutting a hole in the vessel and welding an adaptor to accept either style sensor.

### 15123 and 12694



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▶ SOLUTION

For sanitary applications the 12694 assembly was developed which features a Teflon® gasket that acts as a thermal barrier between the sensor housing and vessel. This minimizes any thermal conduction between the two allowing the sensor to respond only to the fluid temperature. Sanitary applications exclude the use of threaded connections so a backing nut and adaptor arrangement was devised to attach the sensor to the vessel. The 15123 assembly was designed with the sensing element residing in a small counter-bore within the threaded housing that keeps it as close as possible to the process fluid while still retaining the required strength. In addition, the variable "L" length provides a longer conduction path between the process connection threads and sensing element thereby decreasing the effects of conduction. The result is a sensor that is more accurate than a surface mount and responds faster to temperature changes.

For more information or assistance with your application please contact Applications Engineering at 800-328-3871 ext. 13.