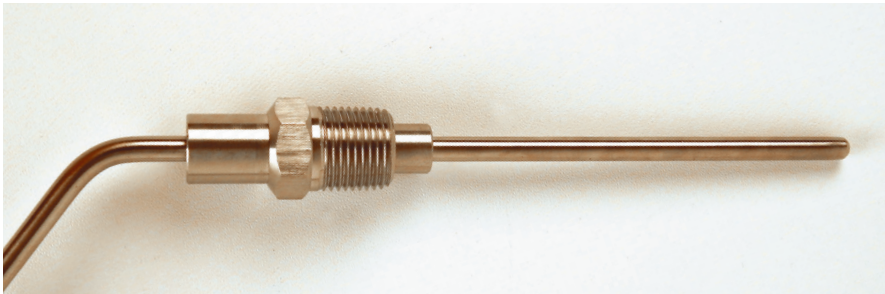


## Case Study | Chemical plant in South Louisiana



*Run times exceeding  
5 months before steam  
air decokes.*

### **Problem:**

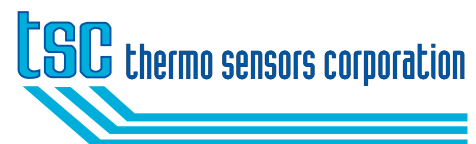
Thermocouples in the effluent stream of ethylene cracking furnaces were failing frequently and drifting as much as 80° F, resulting in production slow-downs and outages. During these outages, a steam air decoke process occurred, so thermocouples and thermowells had to be inspected and failed assemblies replaced.

### **Solution:**

Thermo Sensors installed their new proprietary type K thermocouples. These are more accurate than even “special limits” thermocouples. Once installed, these thermocouples increased the run time of the furnaces. In addition, the customer experienced high reliability and accuracy for their temperature readings. The thermocouples installed are lasting five years without drift or failures. Included with the new thermocouples was a thermowell redesign using different materials and construction. This redesign added to the longer runtime and increased reliability of the furnace.

### **Result:**

With the increased reliability and accuracy from the modified installation, the customer is now experiencing optimized individual pass balancing. In addition, the customer was able to modify their control scheme because of the increased accuracy of the outlet temperature measurements. The customer was experiencing individual feed pass plugging (feed transmitters plugging at orifice plates). They reconfigured the control scheme, which now utilizes the outlet temperatures to control the individual feed pass control valves. The customer now experiences run times that exceed 5 months before steam air decokes.



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