

## APPLICATION SUMMARY

Electrical Heat Tracing is used throughout most process plants, power plants and waste water treatment facilities to keep piping and vessels from freezing during cold weather. It is also used where processes require materials to be kept at an elevated temperature. It consists of flexible cables or pads, attached to the piping or vessel, with insulated cladding over it. It can be controlled by an electro-mechanical thermostat, an electronic control system, or in the case of "self-regulating" cable, the material itself maintains a temperature above freezing.

### Problem: Replacing a Sensor

Heat tracing systems are prone to failure from a number of causes, including burn-out of the cable itself, physical damage from impact, leakage of moisture into the insulation, and even failure of the control sensor. In the case of a failed RTD, the typical repair process is: electrically disconnect the element, detach the conduit, remove the pipe insulation, unstrap the RTD assembly from the pipe and then strap the new RTD assembly onto the pipe. The process is then reversed to finish the repair. In many plants, it can take up to three maintenance trades to complete a repair. That's significant cost and down-time. In addition, the failure is usually noticed when it's cold and the pressure on Maintenance builds, as they try to get back on-line before freezing occurs. And, in our experience, one of the biggest causes of system failure occurs when the insulation is not replaced properly after a repair, leading to loss of heat, moisture intrusion and eventual failure.



### AST SENSOR SOLUTION

Applied Sensor Technologies has designed a wide range of Heat Trace RTD assemblies with replaceable element subassemblies. The designs use a flexible "pod" that slides down into the slightly larger housing. The RTD assembly is installed similar to other fixed-element RTDs. However, if replacement is required, the process is much simpler. Just open the cover, detach the three wires, pull the subassembly out of the housing and install a new one. This usually requires only a few minutes by an I&E technician alone, rather than the 2-3 trades required for a fixed element assembly. Because it also does not disturb the insulation cladding at all, there is no chance for moisture to get in after the repair. Finally, the cost of the replacement subassembly is much less than a complete unit, so the material cost of the repair is kept to a minimum.

