SPARKY'S SHOCKERS  
RTD Temperature Detectors

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RTD’s (resistance temperature detectors) are a common type of sensor used for detecting the temperature of bearings, motors, gear boxes, and processes. They are accurate, easy to use, and simple to understand. However, many people using and specifying RTD’s do not realize that 2-wire RTDs can be used in place of 4-wire RTDs with very little difference in accuracy. Normally a 2-wire RTD will lose accuracy due to the resistance in the cable, which can be thousands of feet long. The 4-wire RTD uses the additional 2 wires to compensate for the wire resistance. However, by “pulling” 4 wires to a 2-wire RTD you can achieve the same thing.

2 Wire RTD

4 Wire RTD

2 Wire RTD used as a 4 Wire RTD

Negligible ERROR

All but the 2-wire RTD leads are compensated for, resulting in very little error from cable

Long cable lengths compensated for eliminating error from cable resistance

Long cable lengths increase error

Negligible ERROR