



Is your temperature measurement instrumentation frozen in time?

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Features	Temperature Acquisition Cables "TAC's" (using digital temperature sensors)	Analog Thermistor Strings (using thermistors)
Rugged Construction	Semiconductor-based board mounted digital sensors are compact, rugged, and reliable.	Leads from thermistor string beads are typically only 0.008 in. (0.2 mm) in diameter and are easily damaged or broken by twisting and flexing motions from normal cable handling.
Smart Sensors	As many as 100 individual digital temperature sensors can share a single cable connection with a logging device that offers new options for bringing data back from the field.	Each analog thermistor requires a dedicated circuit. The total number of sensors in a cable is limited by the number of conductors available in the cable.
Less Equipment	Analog to digital temperature conversion happens in the sensor so the output is direct temperature readings and no external converter is required. External multiplexers are also eliminated since digital communications can be handled on one "channel".	Sensor output is an analog measurement of resistance, not temperature. An analog to digital converter and multiplexer are usually required to translate the data from thermistor strings into a useful form.
Faster Temperature Collection	Digital temperature sensors are read and the data logged directly into a rugged handheld computer, or remotely over a wide area network (the internet) using low cost, rapidly deployed hardware and software options. Extensive instrument training is not required.	Manual data collection methods such as paper and pencil are required for recording data in the field. External data acquisition devices, A-D converters, multiplexers, and network interface devices are typically required for permanent installations; much of which requires special instrumentation knowledge to configure.
Better Connectors	Heavy duty outdoor rated connectors featuring gold plated contacts, all metal construction, with IP65 specification dust and water protection provide reliable long life connections and excellent performance. Standard RJ45 Ethernet connectors can also be used in indoor applications.	Specialized military connectors are required to accommodate large numbers of contacts. These connectors are rated for fewer mate/unmate lifecycles and replacement parts are frequently unavailable locally and are difficult to repair.
Tougher Cable	A much thicker outer insulation jacket resists dust, chemicals, abrasion, splitting and kinking. The cable is also 40% lighter than a comparable analog cable.	Since each sensor requires its own conductor, the same diameter analog thermistor wire has a thinner jacket and offers less protection, less flexibility, increased weight, and higher susceptibility of cracking at low temperatures.