"Should Have's"
For Today's Data Logging Systems

√ **Should Have -** Capability to collect data, status, calibrations and alarms from a variety of manufacturers over their serial ports, in their native language

√ **Should Have -** Flexible serial port capability - Should handle multiple protocols and multiple baud rates on a common serial cable

√ **Should Have -** Multiple, independent serial ports for instruments that broadcast A multiplexed serial port cannot handle instruments that broadcast

√ **Should Have -** Analog to Digital capability. All analog inputs isolated from each other.

√ **Should Have -** Selectable analog ranges with minimal adjustments

√ **Should Have -** Floating point Mathematics only - no integer math
Todays instrumentation gives us numbers. There is no good reason to generate conversion errors by using fixed point binary mathematics.

√ **Should Have -** Capability to support industry standard data collection protocols such as Modbus, not just an "in house" proprietary protocol.
This allows your existing DAS software to communicate with the data logger

√ **Should Have -** Operator interaction with instrumentation in an ***on line*** mode

√ **Should Have -** Ability to store or export collected data in industry standard database.
Allows the data to be readily used by a multitude of off the shelf programs.

√√ **Should *Not* Be -** A "me too" trying to extend the life of an existing product.
Embellishing older technology with a *touch* of new trying to made them *appear* newer, instead of providing a new, state of the art product designed to meet and complement today's emerging monitoring capabilities and requirements, results in a poor compromise.

Over the past decade, the instrument manufacturers have been steadily improving the state of the art of their products. All instruments now have embedded microprocessors and provide outputs that are compensated for internal and external operating conditions. Connecting this new level of instrumentation to a data logger that is based on thirty year old technology circumvents the benefits inherent in the newer instrumentation and does not provide a state of the art collection platform to match that capability being offered by the instrumentation. Presented above are some suggested guidelines for selecting a data logger to complement the features offered by today's instrumentation.