dataTaker

Application Note

Monitoring Weld Strength to Improve Quality

Customer Requirements

A metalworking company wants to establish the reason why some welds occasionally fail. They wish to do this by creating welding profiles of weld-points. This knowledge will enable the company to take measures to help prevent future failures, and take steps to increase their quality and service to customers. They require a logging system capable of real-time monitoring and alarms without having to be connected to a computer.

Tough welds: It is possible to establish the strength of a weld point by measuring specific parameters during the welding process and creating a 'weld profile'.

dataTaker DT80

1. A cost effective data logger expandable to 100 channels, 200 isolated or 300 single-ended analog inputs
2. Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
3. Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems
4. Smart serial sensor channels capable of interfacing to RS232, RS485, RS422 and SDI-12 sensors
5. Rugged design and construction provides reliable operation under extreme conditions
6. Includes USB memory stick support for easy data and program transfer

dataTaker Solution

Equipment

dataTaker DT80 data logger

Sensors

Shunt resistor for current measurement
Pressure Transducer
Thermocouples

Implementation Notes

By using the *dataTaker* DT80 data logging system to monitor temperature, weld pressure, weld current and voltage, the client can obtain a complete profile of each weld. These profiles can be compared to known good values which can be pre-programmed into the logger.
Variances from the pre-set levels are pinpointed and alarmed to enable operators to take preventative action before a weld problem occurs. This alarm can be in the form of a digital output (to drive a visual or audible warning system), an on-screen warning (on the DT80 LCD screen) or an attention light.

Weld profiles can be stored in the DT80's large internal memory for retrieval or to expand on this system these profiles could be sent to an ASCII printer connected directly to the logger's serial host-port, allowing the client to analyze and optimize performance and maintain quality.