

Slope Stability Monitoring

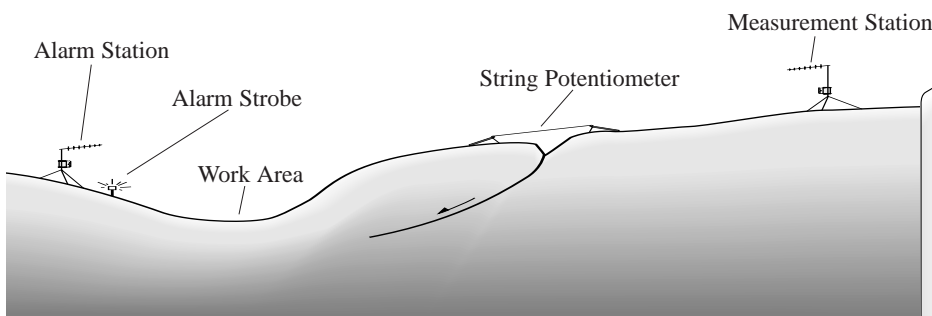
using Campbell Scientific's CR10 Measurement and Control System

The Problem: Our customer required a data acquisition and control system to monitor a slowly moving slope, detect any significant movement, and trigger alarms to alert personnel working at the base of the slope. The system needed to withstand environmental extremes, operate from a self-contained power supply, and transmit data via radio to both an alarm control station and a computer base station. In the slope's history, catastrophic failures were precursed by gradually rising rates of slippage, so the system had to detect, record, and respond to both short- and long-term (cumulative) movements.



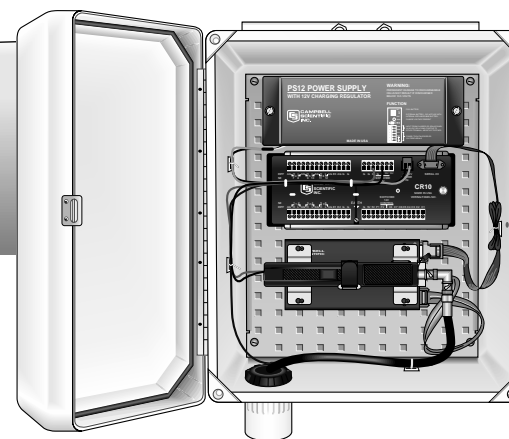
View upslope across fissure system (foreground) to measurement station.

The Solution: A CR10 Measurement and Control System. Four string potentiometers were installed at positions straddling the main fissure system. Every minute the CR10 measured each potentiometer and compared the results against values recorded 12 hours earlier. If displacement exceeded programmed tolerances, the CR10 alerted personnel to evacuate the area. Displacement values were then transmitted to the base station computer to determine a course of action.



Schematic representation of application. Data and control signals from measurement station are automatically transmitted to alarm station which activates alarm if necessary.

This is but one example of the power and flexibility of our instrumentation. Please call us today concerning your geotechnical, hydrological, environmental, or industrial measurement needs.



Instrumentation enclosure on tripod houses power supply (top), CR10, radio modem, and transceiver. Sensor leads not shown.



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