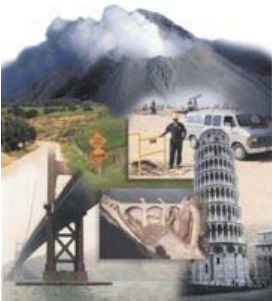


Geotechnical – Soil Subsidence



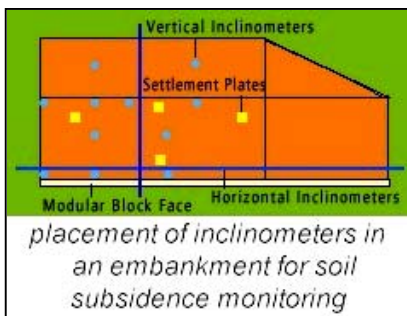
The use of tilt sensors and electronic inclinometers within the geotechnical-monitoring world has existed for many years. These applications range from bridge structural monitoring, to measuring dam deformation, to building monitoring during adjacent construction. Many other specific applications also exist, all centered around structural, foundation and/or ground stability monitoring.

One application, which utilizes electronic inclinometers extensively, is known as *soil subsidence*. This involves monitoring slopes and landslides to detect zones of movement, and to provide settlement profiles. This will require the inclinometers to be mounted in both the vertical and horizontal planes respectively. This is how it works.

Once the area to be monitored is identified, an inclinometer casing is installed. This is a special purpose, grooved pipe used to properly locate the inclinometer to obtain subsurface measurements.



It is typically installed in boreholes, but can also be embedded in fills, cast into concrete, or attached to



structures. These casings provide not only access, but also accurate reference surfaces for probe type (portable) and for in-place (permanent) inclinometers.

Once the casing is installed, an initial survey is taken, which establishes the profile of the casing.

Subsequent surveys reveal changes in the profile of the casing if movement has occurred. These movements, which are typically minute, require highly accurate and repeatable measurements.



Most companies involved in the geotechnical monitoring market prefer to construct their own electronic inclinometers, as the physical shape, packaging, and cost are of prime importance. However they still require tilt sensors to make them work. Spectron has proudly served this market successfully for many years with the SH50056 and SH50058 Series Ceramic Electrolytic Tilt Sensors. These tilt sensors provide the accuracy, resolution and long-term stability required for this demanding application, while costing considerably less than competing technologies such as vibrating wire and force balance based devices. In addition, the compact size and hermetically sealed construction are a big plus, and will be key selling points when speaking with the customer.