

STRUCTURAL MONITORING APPLICATIONS WITH THE NEW LEICA NIVEL200 DUAL AXIS INCLINATION SENSOR

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Abstract: Measurements of inclination and changes in inclination give fundamental information on buildings stability that moves due to construction activities such as excavation, tunneling and drainage that affect the ground supporting the structure.

Changes in tilt may also result from various loading of a structure, such as the water variation in a dam, wind, sun and crane loading of a core wall in construction or loading of a bridge deck due to heavy traffic.

For both the purposes of testing and monitoring, such an inclination measuring system based on the new Leica NIVEL200 is currently intensively deployed for numerous structural monitoring projects.

The Leica NIVEL200 sensor is a measuring sensor with which the degree and direction of inclinations and the temperature at the sensor can be determined simultaneously. It's compact construction and opto-electronic sensor unit ensure highly accurate measurements (4cc) and long-term stability. In contrast to conventional inductive or capacitive sensors, the NIVEL200 employs no mechanically driven moving parts. This results in a reliable, maintenance-free sensor perfect for long term monitoring.

The NIVEL200 delivers real-time data on a continuous basis enabling online detection of movement. Depending on the type of sensor, the measurements are output in digital RS232 or RS485 format.

The Leica GeoMoS solution software supports different networks of NIVEL200 as a well as a complementary sensor to GPS and TPS.

This presentation will underline the support of a NIVEL200 monitoring system in several projects and its potential while collocated with GPS Reference Station.