⊕ SWISS PRECISION

DIMETIX
LASER DISTANCE SENSORS

MONITORING OF ROCKFORMATION ABOVE RAILWAYTRACK

Industry :   Geodesy & Construction
Application type :   Monitoring

Brief description

Pic 1: Dimetix sensors in use

Consultant Engineers have used Dimetix Laser Sensors to monitor a debris flow activity that is causing a mountain creek to dam up. This damming up can lead to the flooding of a rail track. Both lasers measure to a distance of around 25 m. As soon as a significantly shorter measuring distance is detected or a measuring error occurs, an alert is issued via a data logger with GSM cell phone. The lasers are part of a larger system that monitors landslide activity and a debris flow channel. Webcams, among other things, are also used. In recent years, 3 debris flow events have occurred which, thanks to the alert system and associated measures, were overcome without loss or damage. The system was installed in October 2010 and since then has operated without problem. The measuring interval of the lasers is 5 min. The entire system is powered by electricity but has a solar panel and a rechargeable battery to ensure that it does actually operate continuously.

The two new lasers (Pic 1) are used to monitor a massive block (approx. 750m^3, Pic 2) which is located at the edge of a thawing permafrost area and which is moving down the valley. It is threatening a settlement area. The lasers are used here in combination with a data logger and other measuring probes (distance sensors, angle measurement sensors, etc.). The system is to be installed in the next three weeks. A structural stabilization measure is being implemented in the meantime. The block is already being monitored by distance measurement sensors and a smaller logger with text message alert.
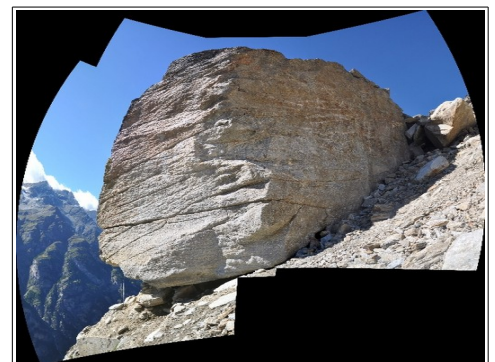
Pic 2: Monitoring of boulder

Customers advantages

- Measuring range 0.05 up to 500
- Accuracy +/- 1 mm
- Easy alignment thanks to the visible laser beam
- Maintenance free — no breakable moving parts

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