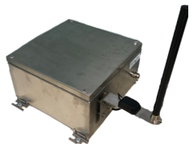
TILIA
SERIES
ACCELEROGRAPHS

Individual Components of Dam Monitoring System

Tilia T130 / T130F
State-of-the-art networked seismic strong motion accelerograph with 200Hz bandwidth and a dynamic range of 155dB (140dB @ 10Hz). The instrument is based on force balance accelerometers, and integrates sensors and digitizers in the same box. Instruments have double ethernet interface to allow daisy chaining and ultra precise 40ns time synchronization between instruments.

Tilia Dam Control Panel
Control panel for use with Tilia instruments in dam monitoring systems. The panel contains 10” industrial PC, power supplies for Tilia, UPS and optionally interface for acticating a siren or alarm light (requires alarm relay option). The Tilia Dam Control Panel includes software required for retrieval and analysis of seismic data.
SHM software must be purchased seperately.



Tilia Protective Enclosure
300 x 300 mm stainless steel enclosure.
Suitable for extra protection of Tilia instruments, and integration of optional parts like 4G modems and custom power circuits.

Siren
105dB Alarm siren suitable for integration with Tilia Dam Control Panel and Tilia’s optional alarm relay system.

Tilia Alarm Relays
Add-on for Tilia instruments. Adds two independent NO/NC relays to a Tilia instrument. Supplied with a 2m cable and screw terminals in an IP66 box. Only one relay option is required in a network of Tilia instruments, since all instruments in a daisy chain can activate the relays.

The relay option must be specified at time of order as the relays are installed during production.

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SEISODIN

WE MAKE STRONG MOTION ACCELEROGRAPHS

Strong Motion Dam Monitoring System

Tilia Dam Monitoring System

A reliable seismic and dynamic monitoring solution for dams

TILIA SERIES

Tilia Dam Monitoring System
The Seisodin Dam Monitoring solution is a **turnkey** solution for seismic strong motion monitoring of all types of dams. The system, which is built around the proven and seismically qualified Tilia Force Balance Accelerographs, are tailored for each individual dam, and adapted to any special requirements that may be for your project.

SPECIFICATIONS

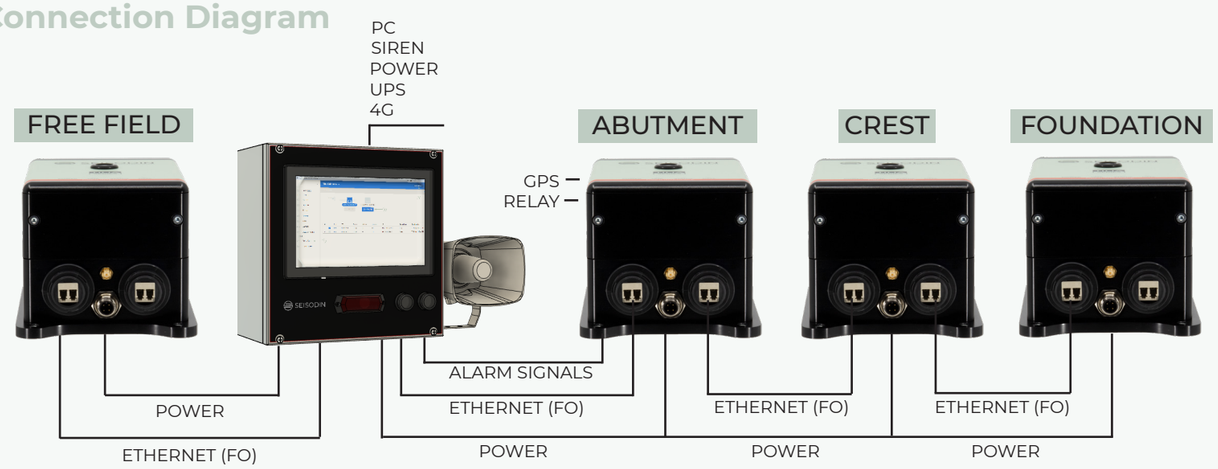
Tilia T130

The Tilia T130 is a state-of-the-art seismic accelerograph. The instrument integrates 3 orthogonal force-balance accelerometers and a high-resolution digitizer in the same small box. Multiple instruments can be daisy chained thanks to the integrated double ethernet interface, ensuring simple cabling and ultra precise synchronization using GPS and PTP. Tilia T130 is seismically qualified for seismic zone 4 accordingt to IEC 60068-3-3 by an accredited laboratory.

	Tilia T130
Sensors:	3 x FBA Accelerometers
Dynamic Range:	155dB (140dB @ 10Hz)
Digitizer:	3 x 24 bits
Time:	GPS, PTP, NTP
Power:	12-60V
Battery:	Replaceable 18650
Connection:	Daisy Chained Ethernet
Configuration:	Web Interface
Storage:	32GB microSD
Connectivity:	FTP, Seisodin Cloud

State of the Art Seismic System
In it's basic form, a Seisodin Dam Monitoring System consists of 4 triaxial force-balance accelerographs, and a control panel with power supplies, UPS and communications. The control panel can be supplied with an integrated industrial panel PC which can be used for direct configuration of the system, access to reports and live data from the accelerometers. The control panel can also be equipped with a siren in case it is necessary to issue a warning signal during a seismic event. The control box can be equipped with a 4G modem, allowing the instruments to upload their data to a remote server, or to Seisodin Cloud. Using a 4G modem may also allow remote access to the control panel using VPN.

Connection Diagram



SEISMIC EVENT CAPTURE

Monitoring how seismic activity affects a dam structure is highly important. Earthquakes have potential to compromise the structural integrity of the dam, so measuring the vibration at key points of the structure is crucial in order to compare the peak accelerations to the design specifications of the dam.

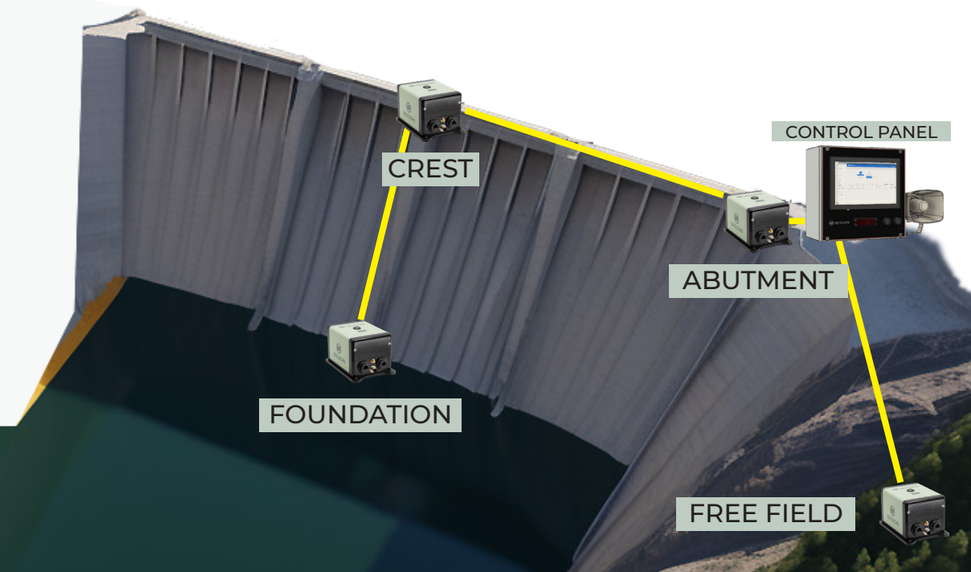
The Tilia Dam Monitoring System enables engineers to assess the impact of an earthquake on the dam structure. Upon a seismic event, the system will generate event records, which will provide input for an automatically generated event report which details important parameters of the earthquake which are crucial for assessing the safety of the dam.

STRUCTURAL HEALTH MONITORING

The dynamic response of a structure, especially a large structure like a dam, gradually changes over the years of it's operation - this is an expected behaviour. However, sudden change in the structural response is an indicator of a problem with the structure, and may be a warning sign that it is damaged.

Monitoring large and critical structures for sudden or slowly growing damage is crucial, and can help prevent diastrous failures. Events like earthquakes, explosions and impacts as well as construction failures can alter the behaviour of the structure and potentially result in collapse or accelerated deterioration.

Seisodin Tilia Instruments are fully compatible with ARTeMIS-SHM software for real-time dynamic structural monitoring. Seisodin is an official distributor of ARTeMIS-SHM, and can offer licenses and subscriptions with your dam monitoring system.



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