



Strainstall have been carrying out road and rail bridge testing, mainly in the UK, for over 20 years. The experience we have gained is now available in a Bridge Test System specifically designed for export. This will enable engineers in countries other than the UK to undertake bridge testing effectively and efficiently using Strainstall's expertise without the need for extensive training. The system is not exhaustive and can be extended very easily with new sensor types or different quantities of existing sensors.

For bridge testing the sensors must be accurate and quick to install. There are a range of sensors available as part of the system, and these include:

- Post mounted vertical accelerometers and vertical displacement sensors which can be quickly assembled for bridges over roads.
- Strainstall's deflected cantilever displacement sensors for bridge deflections. These devices are attached to the bridge with an invar wire connecting the sensor to the ground, secured to a concrete block. The invar wire is used to minimise the effects of temperature, which is particularly important for longer term testing requirements.
- Disposable weldable electrical resistance strain gauges that can be used on steel structures.
- Bondable or boltable strain sensors that can be used to give strains over a 150mm gauge length and configured in a strain ring to amplify the output by 3 times.
- Displacement sensors used for crack or joint monitoring.
- Accelerometers for vibration measurement.
- Event sensors for vehicle and speed determination.

- Networked Data Loggers with Modem
- Linear Displacement Transducers
- Rotational Potentiometers
- Inclinometers
- Temperature Sensors
- Crack Meters
- One Hourly Readings Stored in Memory
- Real Time Filtering to Eliminate Live Load Effects

Monitoring System

Mobile Bridge Testing Unit



The World of Load
Measurement and
Stress Analysis

The data acquisition system is housed in a vehicle fitted out with a desk, chair and generator. The data acquisition unit is housed in an enclosure complete with amplifiers for the sensors, cable inputs via sockets, a printer, UPS, anti-aliasing filters and power supplies/distribution. The main unit is an industrial rack mounted PC with NI analogue to digital conversion.

Each sensor has a length of cable with a plug. Extension leads are provided with plugs and sockets to connect to the data logger enclosure. All cable and sockets are colour coded to be easily identifiable.

The software provided is Strainstall's own StrainSoft Acquire and StrainSoft Analysis.



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