



Data Digger Equipment

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REBAR STRAIN GAUGE



Data Digger's Equipment models DDE-5500RB Vibrating wire Re-bar strain gauge, also known as Sister Bar strain gauge, are specially designed for embedment in concrete structures. These are ideal for measurement of strain in concrete structures such as piles, diaphragm/slurry walls, bridge abutments, tunnel lining, dams, foundations etc.

FEATURES:

- Precision, low cost reliable sensor for long-term installation.
- Easy to install and water proof.
- Reliable and precise measurement possible.
- Fully encapsulated for protection against handling and installation damage.
- Rugged construction.

TYPICAL APPLICATION:

- Suitable for measurement of strain in reinforced concrete structures.
- Strain measurement in concrete piles and cast in place concrete piles.
- Strain measurement in diaphragm/slurry walls.
- Strain measurement in tunnel linings, dams and bridge abutments. Provides reliable and high resolution readings.



AN ISO 9001:2015 Certified Organization
Certificate No: 304920053008Q



DESCRIPTION:

The model DDE-5500 RB vibrating wire sister bar strain meter consists of a hollow bar with vibrating wire strain gage mounted co-axially inside. The hollow bar is extended on the two sides with 12 or 16 mm dia reinforced bars.

Model DDE-5500 AW has the sensor welded onto it, with proper protection for special applications.

The sister bar sensor houses a permanent magnet and a plucking coil assembly. The wire when plucked by the sensor vibrates at its natural frequency that is proportional to the tension in the wire. Any change in strain, directly effects the tension in the wire, resulting in a corresponding change in its frequency of vibration. The strain is proportional to the square of the frequency that can be measured and displayed directly in micro strain by Data Digger's DL series vibrating wire indicator. The data can also be automatically collected at desired frequency, stored and transmitted to remote server by a suitable datalogger. An in-built thermistor is provided for temperature measurement for accurate determination of effective strain.

Main purpose of the strain gage is to indirectly determine stress and its variation with time, quantitatively. Change in stress is determined by multiplying the measured strain by the modulus of elasticity

Both models are supplied ready for embedment in concrete by tying the sister bars alongside an existing length of rebar in the rebar cage. The strain transfer from the surrounding concrete to sister bar strain gage is uniform and equal. Sister bars can also be installed in pairs on both the sides of neutral axis to separate bending moments from axial load.

SPECIFICATION

Range	2500 μ strain
Sensitivity	1 μ strain
Dimension ϕ x l (mm)	26 x1400 (for 12.0 ϕ) 30 x1400 (for 16.0 ϕ)
Temperature limit normal	-20 to 80°C
Protection	VW strain gage encapsulated inside hollow bar
Thermistor	YSI 44005 or equivalent

