



- Bridge Testing & Rating Services
- Structural Testing Equipment
- Long-Term Monitoring
- Fatigue Monitoring Systems

BDI Bridge Fatigue Monitoring System

Bridge Diagnostics Inc. supplies turn-key monitoring systems for tracking live-load stress fatigue cycles on bridges and other civil structures. BDI configures the hardware and software so that the engineer can concentrate on evaluating data rather than spending time learning and developing data acquisition systems and programs. Depending on the application, entire response histories can be captured and stored for overloaded vehicle crossings, or, stress cycle counts can be recorded for specified ranges using the ASTM "Rainflow" algorithm. Data can be downloaded and remotely viewed in real time or stored on a periodic basis.



BDI Strain Transducer

Standard BDI Fatigue Monitoring Systems are

based on the reliable and robust CSI CR5000 datalogger configured to read up to 20 BDI Strain Transducers.



When we supply these systems, one key aspect of our approach is to help the customer determine the most efficient and cost-effective instrumentation plan since collecting more data is not always necessarily better. In fact, sometimes it can be a detriment! If required, BDI can also help install the system and provide training so that the owner can monitor, download, and analyze the data themselves for the duration of the testing period.

Applications

- Highway Bridges: Monitor for overloaded vehicles
- Railroad Bridges: Count fatigue cycles due to daily train traffic
- Hydraulic Control Structures: Monitor for unintended responses in tainter gates, lift gates, and miter gates.
- Other Civil Structures: Capture live load responses during construction or transporting large loads.

Highlights

- **Record Responses Under Normal Live Load Conditions:** System is set to trigger at a selected stress level to capture live load responses.
- **Low Cost and Low Maintenance:** All hardware is very rugged and has been field-proven to be reliable, even in harsh conditions.
- **Sensors are Entirely Re-Usable:** The BDI Strain Transducers can be attached with adhesive for short-term testing or permanently mounted with anchor bolts or welding for longer-term investigations.
- **Stand-Alone Capability:** The BDI-FMS can use its own cellular phone for communications and solar panels for power.



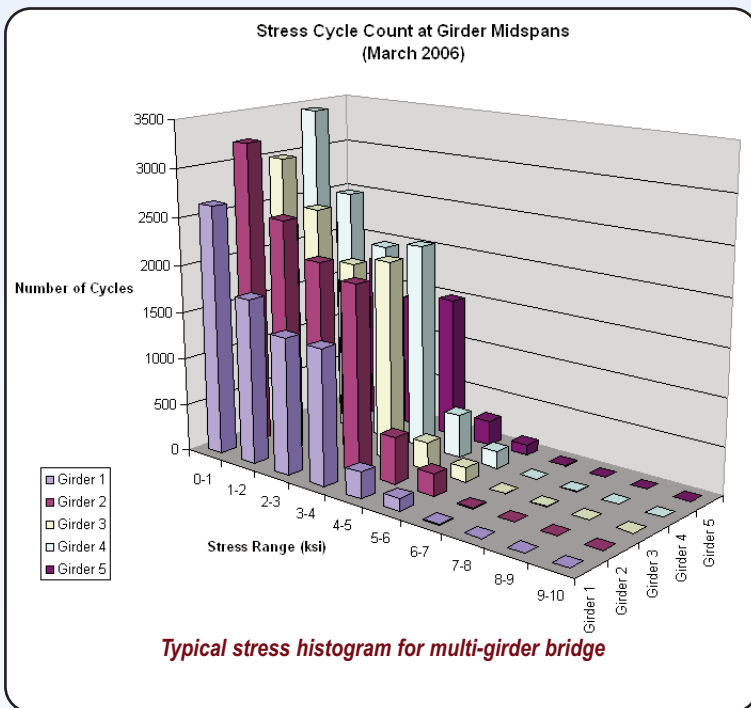
BDI-FMS mounted in semi-permanent cabinet.
 Other enclosure options available.

Features

- Software is delivered pre-configured for the particular application
- Options to capture pre- and post-event data
- User can set event trigger levels on individual or multiple channels
- Add accelerometer sensors to capture dynamic vibration data for modal analysis
- Add a cellular modem to connect remotely to download data and view data real-time
- Sensors and system are completely re-usable



Monitor responses due to permit loads.



Technical Specifications	
Data Logging System	CSI CR-5000
Maximum Number of Channels:	20
Typical Scan Rates:	50 to 100 Hz
Power Requirements:	120-220VAC adapter, 12VDC automotive battery, or solar panel
Housing:	16in x 18in (40cm x 46cm) weatherproof fiberglass or alternate
Software:	Pre-configured with stress cycle, event capture, and/or peak stress counting
Sensors:	BDI Strain Transducers Accelerometers, Load Cells, etc.



Rugged aluminum covers protect transducers for long-term monitoring