



BRIDGE SENTRY

Systems

Structural Health Monitoring



Bridge the World with Leading Infrastructure Solutions

D.S. Brown Company | 300 East Cherry Street • North Baltimore, OH 45872 | Telephone: 419.257.3561



Features

- D.S. Brown offers high-powered data recording technology and analysis products and services for the next generation of smart bridges
- We offer continuous and simultaneous monitoring of both natural and man-made events
- Provide real-time sensor data both locally and remotely
- Multi-point distribution – monitoring management from any location with mobile carrier coverage
- Supply Alert Management – Informed immediately during an event

Advantages

- Extend the functional life of your bridges
- Mitigate risk of catastrophic failure
- Avoid closures and accelerate openings
- Protect the user and your investment
- Reduce inspection and maintenance costs

Applications

- **Steel Bridges** - Detect, locate and quantify cracking
- **Concrete Bridges** - Detect tendon breaks and corrosion induced cracking in beams/piers
- **Cable Supported Bridges** - Continuous monitoring of bridge cables detects wire breaks immediately
- **All Construction Phases**
 - During construction
 - While testing (temporary)
 - During normal operations (permanent)
 - During renovation



Bridge Sentry™ Data Acquisition Units

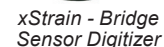
- ## Bridge Sentry™ x Series Integrated Sensors

- Integrated 3 channel accelerometer
- Easy mounting and connection of the units (wireless or CAT5 cable)

- Accepts a wide range of sensors (Displacement, Temperature, Humidity, Wind Speed, Wind Direction, Inclination, Corrosion, etc.)

xStrain – Strain Gauge Digitizer

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- BRIDGE SENTRY**
Systems
- Client Stations**
1. Receive Data in Real-Time with custom Client Software
 2. Receive Data in Real-Time from Web-based Server (IP1)
 3. Receive Report File (PDF) from Web-based Server (IP2)
 4. Real-Time data analysis (PGA, PGV, PGD, RS, FFT, CAV, DAF)
 5. Print reports
- Central Recording and Processing Stations**
1. Data management subsystem connected to MS SQL Server
 2. FTP data record distribution
 3. Real-Time data analysis (PGA, PGV, PGD, RS, FFT, CAV, DAF)
 4. Web-based Server (IP2) for generating reports (Password Protected)
 5. Print reports
 6. Real-Time Data Streaming to the Clients
- Digital Acquisition Units**
1. Continuously receive data from Sensors
 2. Watch for trigger condition
 3. Trigger and record event to the local storage
 4. Real-Time Data Streaming
 5. Communication options: Ethernet, Wi-Fi, RS485
 6. GPS or RTC Time and Data synchronization
- Legend**
- | | |
|-------------------|-------------------|
| ACC Accelerometer | WD Wind Direction |
| IN Inclinator | WS Wind Speed |
| SG Strain Gauge | H Humidity |
| T Temperature | D Displacement |
- xDAS Real-time Monitoring**



- System Consultation
- Customized Dashboards
- Data Analysis & Management
- Customized Programing
- 24/7 Online Monitoring
- Remote Data Storage

Bridge the World with Leading Infrastructure Solutions

Bridge Sentry™ Accessories



Wind Speed and Wind Direction Sensor – Mechanical



Wind Speed and Wind Direction Sensor – Ultrasonic



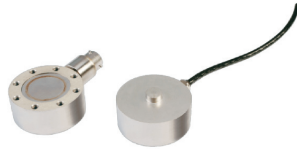
Displacement Sensor – LVDT



Displacement Sensor – String Pot



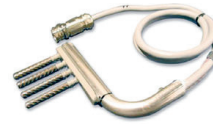
Temperature and Humidity Sensor



Load Cell



Strain Gauge



Corrosion Sensor



Inclination Sensor

Projects

Ironworkers Memorial Bridge – Vancouver, BC

Delivered 24-bit RTMS-2001 systems with total 123 channels. The system was installed in 2010.

- 100 channels of acceleration
- 18 channels of strain gauge
- 1 channel of wind speed
- 1 channel of wind direction
- 3 channels of temperature



Vincent Thomas Bridge – Los Angeles, CA

26-channel system installed on a cable suspension bridge spanning 1850m, vulnerable to possible earthquakes and terrorism. The system distributes data to three different remote locations – in real-time – and provides a wealth of data pertaining to the effects of high traffic volume.



Oceanic Bridge – Middletown, NJ

Two 24-bit systems with a total of 57 channels. These systems were installed in 2011.

- 4 channels: Acceleration
- 36 channels: Foil strain gauge
- 12 channels: Vibration wire strain gauge
- 7 channels: Vibration wire displacement
- 2 channels: Non-vibrating wire tilt meter
- 4 channels: Vibrating wire tilt meter
- 6 channels: Camera

