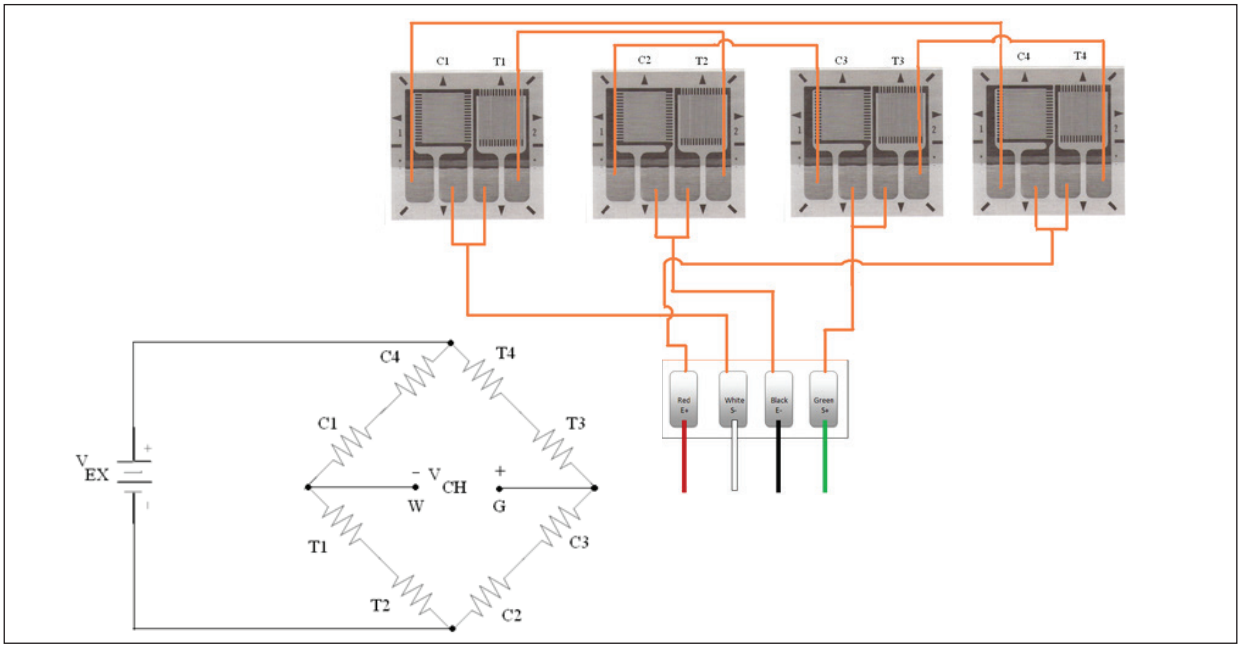
# Strain Gage Load Cells and Load Measuring Devices

**Geocomp provides custom-built strain gage load measuring devices to suit specific applications. We have more than 30 years of experience in the design, fabrication, and calibration of these devices founded on a Wheatstone bridge design using resistance strain gages. The Wheatstone bridge configuration, compared to using a single strain gage, allows for dynamic response, increased sensitivity, better temperature compensation, and elimination of bending effects. This technology can be used to design custom-built load cells or turn existing load hardware into calibrated measuring devices. Geocomp staff are trained in 'Transducer Quality' strain gage installation techniques to eliminate potential for long-term measurement drift and provide the accuracy, durability, and longevity required in construction applications.**

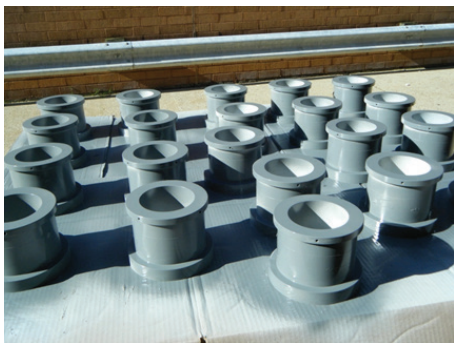
### Strain Gage Wheatstone Bridge Circuit




## Example Applications

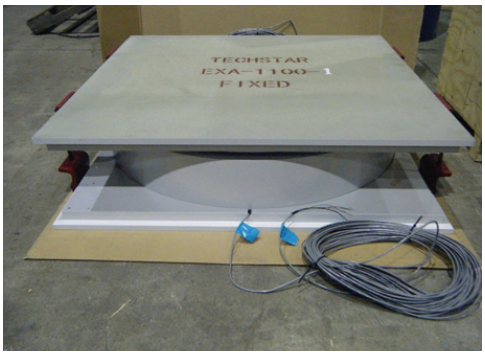
#### 300-KIP LOAD CELLS FOR M50 BRIDGE – JACKSON, MI

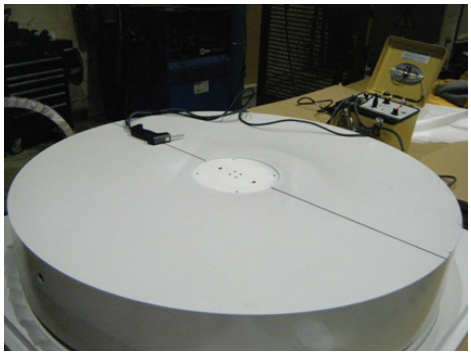
The design of the resistance strain gage load cell eliminates the need for the large end bearing plates often required for vibrating wire load cells. Load cells are designed using 8-gage Wheatstone bridge configuration around the circumference of the load cell body to greatly reduce effects of eccentric loading. Each load cell is calibrated individually to NIST-traceble standards and comes with calibration records and QA documentation. Custom design also can include external handles, plug connectors, or built-in shunting capabilities, depending on application needs.



## 4500-KIP LOAD MEASURING BEARINGS FOR BRIDGES

Geocomp, working with the bearing manufacturer, provided unique strain gage instrumentation during fabrication to provide SMART bearings that ultimately were calibrated during proof-performance testing to 4.5 million lbs. The built-in load measuring capability through Wheatstone bridge strain gage installation provides measurements for change in bearing loads due to temperature changes on the structure that could not be accurately achieved through other methods.



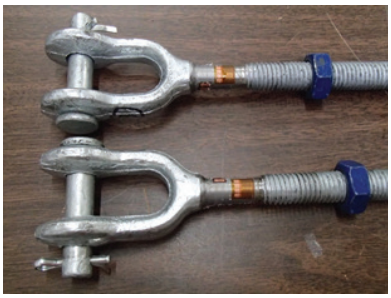



## 200-KIP LOAD MEASURING LINKS FOR ROCK FALL NETTING

While working with the Colorado DOT to measure and evaluate dynamic load capacities of rock fall netting designs, Geocomp instrumented load links for netting cable hardware with Wheatstone bridge resistance strain gages to turn existing cable/anchor hardware into accurate load measuring devices. Links were pre-calibrated prior to installation and provided dynamic load response at anchor points throughout the netting for load distribution during staged rock drops.

## 10-KIP LOAD MEASURING TURNBUCKLES FOR BRIDGE ABUTMENTS

Geocomp designed load measuring turnbuckles using existing support hardware for highway wall systems in front of geosynthetic reinforced soil (GRS) abutments. Concerns for load distribution on the support system during backfilling operations were mitigated through this strain-gaged, load measuring system without disturbing the load framing system. The Wheatstone bridge circuit design eliminated potential bending measurements and provided temperature compensation of measurements.



***For more information contact:***

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