



#### Case Details

The bridge is a crucial link between the two countries critical to transporting up to 200,000 vehicles a day. Engineers monitor key parameters at various section of the bridge to evaluate the structural health of the bridge. Data loggers receive multiple inputs from a variety of sophisticated sensors including strain gauges, accelerometers, temperature and displacement transducers, distributed across the deck and on the towers and piles of the bridges structure

#### Key Requirements

- Long term monitoring solution
- Capacity for high number of sensors
- Real-time alerts and alarms
- Web-based access to data – anywhere
- Enables flagging of abnormal events and
- custom report generation



Singapore-Malaysia Link Bridge: Photo sourced from Wikipedia

#### DataTaker DT80G

- 1 A cost effective data logger expandable to 100 channels
- 2 Supporting vibrating wire and other Geotechnical sensors
- 3 Compatible with all major brands – Slope indicator, RST Instruments, Geokon, Soil Instruments, Rocrest, AGI.
- 4 Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
- 5 Rugged design and construction provides reliable operation in the extreme s of the geotechnical environment and applications
- 6 Designed and manufactured in Australia



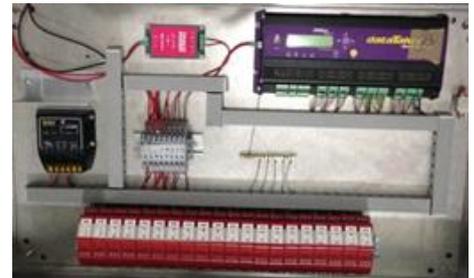
#### DataTaker Solution

##### Equipment

*DataTaker DT85GM*  
All weather proof self-powered Industrial cabinet

##### Sensors

- Vibrating Wire Strain Gauges
- Crack Meters
- LVDT's
- Thermocouples



##### Implementation Notes

Six logging stations were installed at key structural locations along the bridge. Each station consists of a DT85GM, which is powered locally via a 20W solar panel and 12V batteries. Each DT85GM has a 3G sim card for remote access and automatic data transfer.

The system takes measurement of a range of sensors, including vibrating wire strain gauges, crack meters, 4-20mA LVDT's and temperature sensors. In total there are over 100 sensors. The DataTaker carries out on board processing e.g. frequency to temperature compensated strain and displacement of cracks.

The data is sent back hourly via the integrated modem to the Strainstall FTP server. The data logger converts to digital form for further manipulation and storage.