



Case Details

Male emus are devoted parents. They do all the incubation of their partner's eggs. Whilst on duty, these emus neither eat nor drink. Our client's research was into the physiological consequences of this dedicated eight-week fast on the male emu.

In addition, incubation often begins before the last couple of eggs are laid, which means these last laid eggs must develop 3-6 days faster than the others. Therefore, the client also wished to monitor the incubation temperature over time.

Key Requirements

- Expandable number of channels to 54
- Voltage, Current and thermocouples inputs
- High speed counter

dataTaker Data Logging Products

- 1 Cost effective data logging solutions
- 2 Capable of measuring and logging DC voltage, current and resistance sources in addition to digital signals
- 3 Suitable for small to large scale applications
- 4 Rugged design and construction provides reliable operation under extreme conditions
- 5 Designed and manufactured in Australia to the highest quality standards



Dedicated Dad: This emu will incubate eggs for eight weeks, during which time it will not eat or drink. Sensors are used to monitor the effects of this dramatic dedication.

dataTaker Solution

Equipment

- dataTaker DT500 data logger
- Channel Expansion Module (CEM)
- Radio transmitter
- Radio Receiver
- Anemometer

Sensors

- Voltage
- Current
- Thermocouples (T-type)
- Solar Radiation Sensor
- Humidity sensor

Implementation Notes

Captured male emus were anaesthetized and implanted with miniature wireless transmitters to monitor temperature and heart rate. One egg in their clutch was also fitted with a transmitter for the continuous recording of incubation temperature. A receiver connected to the DT500 picked up radio signals from the transmitters. Environmental conditions were logged in parallel and all data downloaded to a computer on a scheduled basis.

Voltage inputs were used for solar radiation and total radiation, current inputs for temperature and heart rate, and T-type thermocouples for air and dew point temperatures.

Wind speed was measured via a cup anemometer with a square-wave output coupled to one of the loggers high-speed counter channels.

The radio receiver required a pulse input to switch between radio channels. This was achieved using one of the loggers voltage output channels.