

Application Note Control, data acquisition and calculation using your *dataTaker* equipment

Customer Requirements

A Sydney company required a controlled atmosphere environment as part of pilot testing of a new process. To reduce costs, existing equipment was used wherever possible. The hostile atmosphere produced was found to be incompatible with available humidity sensor technologies, requiring these measurements to be derived in real time using measurements from secondary sensors.



Equipment

DT500
DeLogger™ 4
Dehumidifier
Relays
Peroxide Dispersal System

Sensors

H₂O₂ Sensor 4 – 20mA
RTD temperature sensors
Humidity measurement, calculated from wet and dry bulb temperatures

Datataker Solution

By using the programmable Alarm functions of the *DT500* and its digital outputs, the *DT500* ensures the initial atmosphere is adjusted to pre-set temperature and humidity levels. Alarms operate relays and solenoids interfaced to heating elements, a refrigerative dehumidifier and the dispersal system.

Programmed 'interlocks' (Alarms) ensure that each subsequent step is not started until its precursory conditions are met. Once these conditions are attained, the *DT500* controls a relay which activates the dispersal system introducing the nebulised peroxide into the controlled atmosphere.

Conditions and levels are monitored and logged in internal memory. As mentioned, humidity cannot be directly measured, so the *DT500* calculates this using known relationships from other measured atmospheric variables. During each trial the data is returned via serial connection to the PC running DeLogger 4 software for real time graphing as well as display on a user friendly mimic screen.

At the end of each run, data is unloaded to a Replay file for further analysis.

If you need more detail on this application please contact joyce.reid@datataker.com.au

**Datataker Pty Ltd - 7 Seismic Court Rowville Victoria 3178 Australia
Tel: 03 9764 8600 +61 3 9764 8600 Fax: 03 9764 8997 +61 3 9764 8997
E-mail: sales@datataker.com.au Web: www.datataker.com**