

# CONTROLLED ATMOSPHERE STORAGE USING A DATATAKER

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## DT80 PROVIDES SINGLE SOLUTION & SAVES MONEY

A company contacted CAS DataLoggers with a controlled atmosphere storage environment project as part of pilot testing for 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. The price of logging different sensors and signals would quickly add up with most systems on the market requiring extra modules and software, so the customer wanted a single solution to monitor, control and calculate for the project.



## INSTALLATION

The customer installed a [Series 4 dataTaker DT80 intelligent data logger](#) in their flight simulator device, connecting the dataTaker to a refrigerative dehumidifier, multiple relays, and a peroxide dispersal system. The datalogger was compatible with all the necessary sensor types, including H2O2 sensors, using a 4–20mA output and RTD temperature sensors. The dataTaker also recorded humidity measurements, calculated from wet and dry bulb temperatures.

The dataTaker's universal analog inputs allowed it to connect to all the project's sensors, providing a single solution. If needed, the data logger's analog inputs could easily be expanded using dataTaker channel expansion modules.

The stand alone DT80 could scale and log almost any physical value including temperature, voltage, current, 4-20mA loops, resistance, strain gages, frequency, and more. The logger also featured robust construction capable of withstanding harsh environments over years of constant use.

## USAGE

By using the DT80's programmable alarm functions and its digital outputs, users ensured that the initial atmosphere was adjusted to preset temperature and humidity levels. The alarms also operated the relays and solenoids interfaced to heating elements, dehumidifier, and the dispersal system.

Programmed 'interlocks' (Alarms) ensured that each subsequent step was not started until its precursory conditions were met. Once these conditions were attained, the DT80 controlled a relay which activated the dispersal system introducing the nebulized peroxide into the controlled atmosphere.



Conditions and levels were monitored and logged in internal memory. As mentioned, the humidity couldn't be directly measured, so the DT80 calculated this by using known relationships from other measured atmospheric variables. During each trial the data were returned via an Ethernet connection to the PC running [dEX software](#) for real-time graphing as well as display on a user-friendly mimic screen. The software came built-in with no applications to install, ran directly from a web browser, and could be accessed either locally or remotely anywhere that a TCP/IP connection was available. At

the end of each simulated flight run, data was unloaded to a server for further analysis.

## BENEFITS

The dataTaker DT80 provided the company with a single solution for controlled atmosphere storage connecting to all the necessary sensor types, measuring at high accuracy onto 10 million data point storage in user-defined memory. The logger's versatile communications ports let users choose the easiest way to access the data, and the free dEX configuration software was easy to learn and navigate. Using the internal calculation abilities of the dataTaker logger, all the measurements were recorded and the data continually monitored. This value was logged for later analysis and simultaneously displayed so users could monitor the process without having to repeatedly connect the dataTaker data logger via computer and download the test results, saving both time and effort.

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For further information on the [dataTaker DT80 data logger](#), controlled atmosphere storage, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Application Specialist at **(800) 956-4437** or [www.DataLoggerInc.com](http://www.DataLoggerInc.com).