

WORKPLACE ENVIRONMENTAL MONITORING METHODS

TANDD 3-IN-1 DATA LOGGER MEASURES TEMP, HUMIDITY, AND CO2

CAS DataLoggers supplied the workplace environmental monitoring solution for a factory with a small series of office rooms experiencing serious air quality issues. Employees reported headaches during the work day, indicating a possible lack of adequate ventilation. These work spaces were located next to the busy factory floor and suffered from an incidental buildup of contaminants. Nominal CO2 values usually range within 600-800 ppm (parts per million) in an office atmosphere, but due to outdated HVAC systems, these indoor levels topped 1,000 ppm, which [ASHRAE](#) industry guidelines marked as unhealthy. Additionally, the factory's owners needed the ability to log temperature and humidity to gauge the effectiveness of their air conditioning control system, and all this data also had to be recorded for maintenance and documentation purposes.



INSTALLATION

The facility installed 2 [T&D-76Ui CO2 + Temperature + Humidity Data Loggers](#), placing 1 in each office attached to the provided wall brackets. Each data logger also included sensors, batteries and free software. Additional T&D loggers were then connected to carbon dioxide sensors to monitor CO2 concentration at several different points in the facility.

USAGE

The 3-channel data loggers simultaneously measured and recorded CO₂ concentration, temperature and humidity for proper workplace environmental monitoring. The T&D loggers each had a wide CO₂ measurement range of up to 5,000 ppm and a logging capacity of 8,000 data sets (1 data set consisted of readings for all 3 channels). These dataloggers also featured a warning monitoring function with contact closure output.

The loggers also recorded a temperature measurement range from 0 to 45°C (32-113°F) and recorded the relative humidity from 10 to 90% RH. The combo loggers also supported user-set recording intervals from every second up to once an hour—in this case they were set to log once a minute. All the recorded data was quickly downloaded to PC via USB connection. Current readings for all 3 channels were accessible—CO₂

concentration, temperature, and humidity readings were all clearly shown on the large LCD screen.



Users also made extensive use of the included T&D Graph software to streamline data accessibility and organization, compatible with Windows 10. Help file documentation let them easily navigate all the options and features, including creation of easy-to-read graphs where data from all 3 channels on each logger were simultaneously viewable in the same graph or table. Additional functions included the useful 'Merge Channels' function and the 'Data List'.

Users could also save data as ASCII text for use with common spreadsheet software such as Excel.

BENEFITS

Following installation of the combo data loggers, the factory performed follow-up testing to show fluctuations and determine optimal arrangement of fans and other methods to eliminate the high CO2 levels and increase the fresh air intake, thus avoiding any potential health problems. Since the loggers monitored temperature, humidity and CO2 simultaneously, there was no need to install 3 types of loggers (each with their own software), to do the logging over a longer time. The factory's owners are now considering using their loggers in future applications for energy-saving measures with their air conditioning controls.

For further information on [T&D-76Ui CO2 + Temperature + Humidity Data Loggers](#), workplace environmental monitoring, 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.