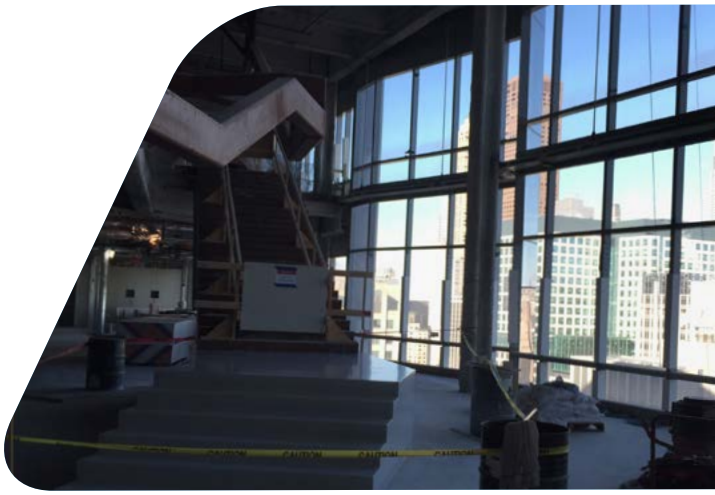
APPLICATION NOTE

CAS DATALOGGERS

Construction Environmental Monitoring Solution Documents Quality

TR-7wf Loggers Push Data to the Site's WiFi Network



CAS DataLoggers supplied the construction environmental monitoring solution for Power Construction, a general contractor working on-site at a large hospital project in Chicago. Rated as one of the Top 100 Workplaces in 2015 by the Chicago Tribune, Power Construction is utilizing an innovative Environmental Monitoring system which uses their local WiFi network to collect and transmit temperature and humidity data. This wireless setup gives management a low-cost way to handle quality control and to make sure that their subcontractors have easy access to the data.

Installation

In November 2015, Power Construction sourced 12 T&D TR-72wf Temperature and Humidity Dataloggers from distributor CAS DataLoggers. Superintendent Jerome Murphy for Power Construction, a long-time T&D user, explains, "Our latest project is a twenty-seven-story hospital building. In our current phase we're monitoring the building's indoor HVAC system performance over the winter. As an important part of our quality checks we monitor temperature, and now that the windows and carpet have been installed, we're monitoring the structure floor-by-floor to ensure that our temporary winter heating system is performing properly."

Each construction component including the doors, interior millwork, etc., has its own strict temperature and humidity quality requirements. For example, all the installed doors must be maintained at conditions ranging between 55-80°F and 25-50% RH (relative humidity). If contractors were to install outside those specifications, problems could quickly develop--doors might warp in 100% humidity conditions, or the carpet adhesive may not stick if the temperature gets too low. Therefore, personnel need to monitor each floor and to take corrective actions if need be, i.e. boosting the heating system, using floor heaters, etc. This way the company adheres to the industry standards for quality.

Mr. Murphy continues, “In the past, we used wired USB monitors on each floor to log this data, but we still had to take readings ourselves. We’d manually retrieve the data floor-by-floor and then load it all into a spreadsheet. This process was extremely time-consuming, and we wanted an easy way to go wireless.

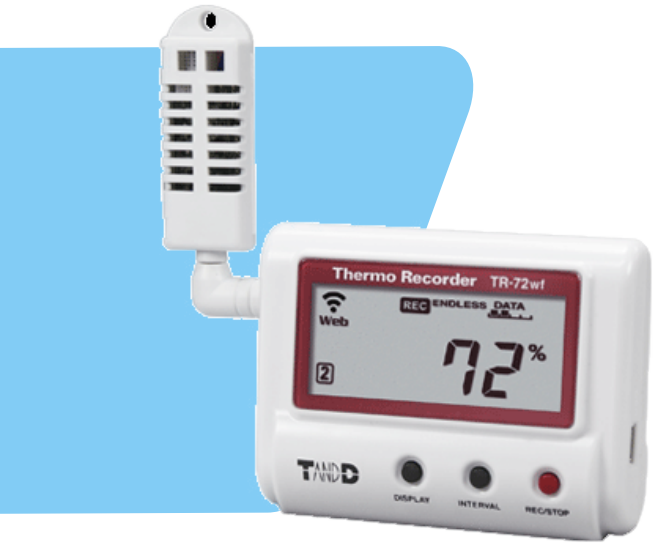
Our current hospital project is one of the first ones where we’ve installed temporary WiFi networks in the buildings for our building personnel to use. We already use these existing WiFi networks, so we said to ourselves why not get a WiFi-based logger to transmit the environmental data?”

Mr. Murphy goes on to describe the installation he’s deployed on each floor within the hospital: “We built a plywood bracket for each logger, painting them bright orange to keep them from being damaged. The dataloggers work fine after setup; ours have held up well and the brackets we’ve made are enough to keep them free from tampering.

"We've configured every logger to take a temperature and humidity reading of its surroundings once every half-hour. They operate very well when you have a strong WiFi signal. Even when our WiFi signal gets shaky or there's a power failure, the loggers keep recording that data and download it as soon as the signal's back up. We also like the ability to extend the battery life by controlling how often the loggers communicate, so the monitors are only using power when we need them to."

Alarms

"We've also configured email alarms which the loggers transmit directly to my email account. Originally we considered having our IT department use T&D to setup an email distribution list in case of alarms, but this setup has worked so well that we haven't needed it for this project. I often check the alarms on my smartphone when I'm onsite or while at home.



"This afternoon for example I got three alarms for humidity—our RH values are always bouncing around rapidly—since one hour it might fluctuate significantly and then drop back an hour later. I'm using the 'Back to Normal' alarm option so I receive an all-clear message if conditions have stabilized so I don't have to travel out there. This has saved me considerable time and worry."

Free Cloud Storage

Additionally, the wireless loggers automatically transmit all the environmental data online to the free T&D cloud Webstorage service. This way, Power Construction's subcontractors can remotely view the same recorded data at their convenience. Here users have set the loggers to download their data to the cloud once every hour. Data storage capacity on the cloud is 20MB.

The data transmitted to the Webstorage service can be accessed via browser from anywhere an internet connection is available. Mobile device apps are also available for devices running iOS and Android.

Murphy explains, “The big selling point for us with the T&D WiFi loggers is that they don’t have the monthly fees like the cell-based loggers on the market we used before. We’d use other products for a few months on the job, but then we’d still be paying for the data storage service while there was downtime between jobs. We’ll definitely be reusing these WiFi loggers in more of our new projects.

“Now I just give our subcontractors the email and password to log into the WebStorage service so they can view the data when they want. So not only do we have the data, our subcontractors have it too—we’re all on the same page when it comes to quality validation.”

Benefits

Now Power Construction is utilizing their onsite WiFi network to have T&D WiFi loggers auto-download all the temperature and humidity data they collect so subcontractors can view the data. Mr. Murphy concludes, “We’ve already shown the loggers to people in our Quality Department, and they like the WiFi capability and failsafe monitoring. The software’s easy to work with and handles Bluetooth communication to your phone so it’s a handy tool. When our subcontractors need to view our data, it’s easy for me to just send them to the WebStorage service where it’s all online.”

Bill Hoon, Applications Engineer with CAS DataLoggers, comments, “T&D is popular with many of our users who want a wireless setup to push data directly to the cloud. I always tell our callers, if you want to go wireless, you’re not going to find anything more rugged or reliable for the price.”

For further information on T&D TR-72wf Wireless Temperature & Humidity Data Logger, construction 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.