

## CONTINUOUS TEMPERATURE MONITORING SYSTEM PROTECTS LIFE SCIENCE PRODUCTS

DATA TAKER AUTOMATES TEMPERATURE MONITORING OF FREEZERS



A hospital required a continuous temperature monitoring system in order to measure and record the temperature of 50 freezers storing temperature-sensitive life science products. These freezers are located throughout the facility on 3 separate floors, but users need centralized access to all the temperature data.

The hospital's IT department also had a key requirement that they should be able to monitor data using just a single interface, so this necessitated a network setup. Users also needed alarm capability in case the temperature

of any freezer should fall outside a specific range. To meet all these needs, the hospital found the ideal solution using [dataTaker Data Loggers](#). Read how it was done via Modbus in this latest Apps Note from CAS DataLoggers.

## DATA TAKER SOLUTION

Three separate dataTaker DT80 units, one installed on each floor, now measure freezer temperatures both directly and via RS485 Modbus ADC devices. The DT80s are networked via Modbus TCP/IP and can be monitored through a web browser.

### Hardware

- dataTaker DT80 data logger x 3
- DGH D5332M Modbus Expansion Module x 9

### Sensors

T-Type Thermocouples x 50



## DATA TAKER DT80

1. A cost-effective data logger expandable to 100 channels, 200 isolated or 300 single-ended analog inputs.
2. Built-in web and FTP server allows users to remotely access logged data, configuration and diagnostics.
3. Modbus slave and master functionality allows connection to Modbus sensors and devices and to SCADA systems.

4. Smart serial sensor channels capable of interfacing to RS232, RS485 and RS422 sensors and devices.
5. Rugged design and construction provides reliable operation under extreme conditions.
6. Includes USB memory stick support for easy data and program transfer.

## INSTALLATION

One [dataTaker DT80](#) is installed on each of three separate floors of the hospital. Each continuous temperature monitoring system records the temperature in several freezers located nearby. Two DGH Modbus ADC modules are also connected to each DT80 over a half-duplex RS-485 connection. These modules allow connection of up to four additional thermocouple sensors and make it possible to monitor the distributed freezers located elsewhere on the same floor, minimizing the length of thermocouple wire and reducing cost and signal noise.

The dataTaker units are connected to the hospital's existing LAN via Ethernet cables. This provides the physical connection for a Modbus TCP/IP network. One of the three DT80 dataloggers acts as a Modbus master, requesting and collecting data from the other two loggers and storing this data in its large internal memory of 10 million data points.

Even though the loggers are using Ethernet for [Modbus](#), they also use this same connection to simultaneously deliver real-time data and generate temperature alarms to users via the internal web server. To access this web server, a user only needs to enter the IP address of the logger into a web browser.

Using this network topology, it's also possible to save each data point to all of the data loggers for backup purposes. If the hospital needs offsite backup, then the DT80 data loggers can be configured to automatically transfer data to a remote FTP server.

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For more information on our [dataTaker Data Loggers](#), a continuous temperature monitoring system or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or [www.DataLoggerInc.com](http://www.DataLoggerInc.com).