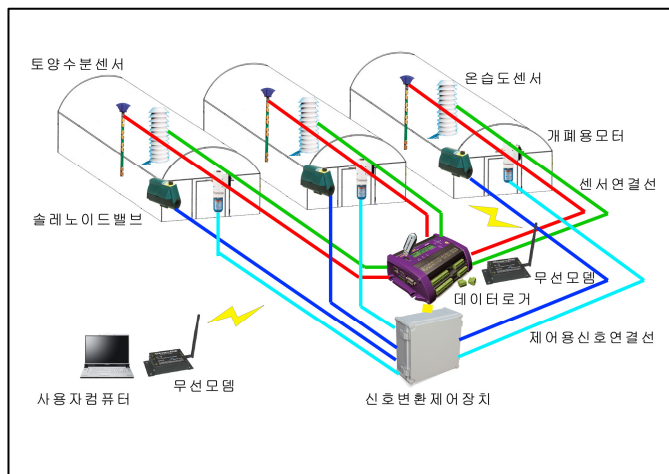## Case Details

A fruit crop experiment station in Korea needed to remotely monitor and control systems in a number of greenhouses. The proposed system needed to monitor soil moisture content and temperature and actively control irrigation and airflow by opening and closing windows, to ensure the appropriate temperature is maintained. Full automation was required to minimise manual workload, up to the point where data collection must be automated.

Key Requirements

Ability to control relays/solenoids
Large data storage
Automated data download
Wireless network capable

dataTaker 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 for remote access to 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, RS422 and SDI-12 sensors

5 Rugged design and construction provides reliable operation under extreme conditions

6 Includes USB memory stick support for easy data and program transfer

토양수분센서 온습도센서 개폐용모터 센서연결선 솔레노이드밸브 무선모뎀 데이터로거 제어용신호연결선 사용자컴퓨터 무선모뎀 신호변환제어장치

Wireless Loggers: The logger takes several measurements and sends data to wireless computers and controls the ventilation system via the same wireless link.

dataTaker Solution

Equipment

dataTaker DT80 (x4)
Wireless LAN modules

Sensors

Soil moisture profiling sensors
Temperature & Humidity sensors

Implementation Notes

Four dataTaker DT80 data loggers were used to monitor and control four respective greenhouses. Each logger was connected to several sensors, including soil water content, temperature and humidity. The logger preformed calculations internally, which algorithmically determined whether to open or close the greenhouse windows for temperature control, or drive the solenoid valve for irrigation.

Each DT80 was connected to a wireless LAN module/access point, which provided wireless network access to data and control systems. All data, both current and historical, was accessible by a main computer connected to the same computer network. Live data from each greenhouse was visible via the DT80's internal web server, whereas historical data had been scheduled to download to the computer automatically at regular intervals. It was also possible to control each greenhouse from the main computer using the included dataTaker software.

This demonstrated how a dataTaker can be used for both monitoring and control via a wireless network.

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