



Customer Requirements

A weather station is required by both a farmer and an agricultural scientist in order to research the direct effects of weather on crop planting and crop yield. The weather station will also be used for daily weather forecasting for a small community.

Due to the inaccessibility of the proposed weather station location by the scientist, solar power and remote access communications are necessary.

dataTaker DT82E

- 1 A cost effective data logger designed with the environmental market in mind
- 2 Up to 6 analog ($\pm 30V$) sensor inputs
- 3 Built-in web and FTP server allows for remote access to logged data, configuration and diagnostics
- 4 Modbus slave functionality allows connection to SCADA systems
- 5 Smart serial ports capable of interfacing to RS232 and SDI-12 sensors or modems
- 6 Rugged design and construction provides reliable operation under extreme conditions
- 7 Includes USB memory stick support for easy data and program transfer



Wheat under Weather:

Wheat yield is known to be significantly affected by a change in climate, but quantifying that can be difficult without accurate data.

dataTaker Solution

Equipment

dataTaker DT82E Enviro-logger
Ethernet GPRS modem
10W solar panel and solar conditioner

Sensors

Temperature probe
Humidity probe
Tipping bucket rain gauge
Anemometer
Wind vane

Implementation Notes

The dataTaker DT82E is a data logger designed with environmental monitoring in mind. The ultra-low powered data logger reads the sensor outputs and directly scales them to usable engineering units. The digital output from the anemometer and the tipping bucket rain gauge is connected to the high-speed counter inputs. These counters increment even when the dataTaker is in sleep mode to conserve power.

The DT82E has an effective 18-bit sampling resolution for accurate calculation of wind directions, wind run or wind rose. All calculations and measurements taken from the wind sensors, rain gauge, humidity and temperature probes are stored in non-volatile memory, so they are unaffected during power loss. On a daily basis the DT82E can power up the Ethernet modem, transfer new data to the scientists' remote FTP server then power down the modem again all without interrupting the data recording. This also ensures that the modem draws minimal power. These low power and diverse communications capabilities create a viable solution for even the most remote sites.

The dataTaker product range has been selected as the solution of choice for a number of manufacturers of remote automated weather stations.