

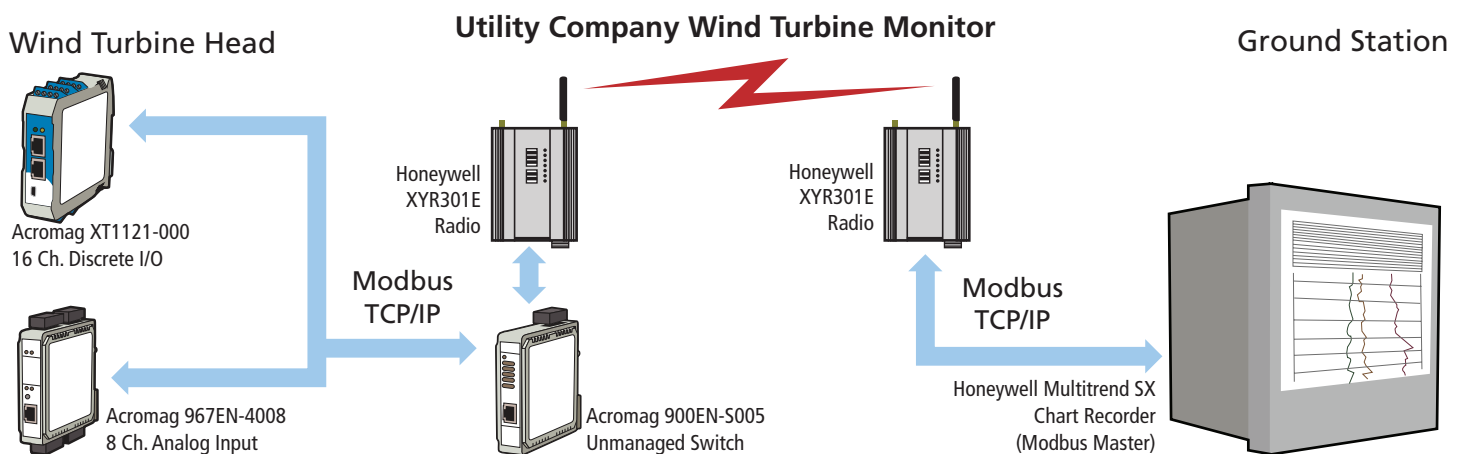
Application Note: Remote Monitoring of Wind Turbines

Defining the Problem:

A large utility company has a requirement to monitor multiple data points on a wind turbine. The turbine head is 300 feet above the ground. The data must be sent to a ground station, saved to a data logger, and displayed on a Honeywell chart recorder. The data will then be downloaded from a remote data collection site.

System Requirements:

At the wind turbine head, several data collection points (both discrete and analog) must be acquired and sent to the ground station using Modbus TCP/IP protocol. The ground station is equipped with a Honeywell chart recorder that also serves as the Modbus master. The system will use Honeywell Ethernet radio links to send the information from the wind turbine head to the ground station, thereby eliminating the need for long Ethernet cable runs.



Implementing the Solution:

1. At the ground station, connect the Honeywell chart recorder to the Ethernet port of one of the Honeywell radio transceivers. Configure the radio transceiver as an Access Point, and set up the chart recorder as a Modbus TCP/IP Master. Configure the chart recorder to communicate to the XT1121-000 and 967EN-4008 Acromag Modbus slave modules.
2. At the wind turbine head, configure the radio transceiver as a Client (slave) device, and connect the Ethernet port to one of the ports on a 900EN-S005 unmanaged switch. Connect the XT1121-000 discrete I/O module and the 967EN-4008 Analog current input module to two of the other ports on the 900EN-S005 switch.
3. Connect the discrete signals to the XT1121-000 inputs, and the analog current signals to the 967EN-4008 inputs.

Featured Products:

XT1121-000	Modbus Discrete I/O Module
967EN-4008	Modbus Analog Current Input Module
900EN-S005	Unmanaged Ethernet Switch

Notes:

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Why Acromag:

The utility company has used Acromag products in their power plant monitoring and control systems in the past, so they are familiar with the equipment and trust in its accuracy and reliability.