SureCross™ Wireless Application Note

Irrigation — Gravity Fed Water System

Gravity fed water distribution systems for potable water and irrigation rely on pumping water uphill, often through topography that can be extremely challenging for RF communication. In this application submersible pressure sensors are used to monitor reservoir levels. Based on the reservoir levels, pumps that supply the gravity fed irrigation system are turned on or off.

Solar powered *Flex*Power™ Nodes collect the level information. Gateways wired to SureCross Data Radios transmit the data to the booster pump station located several miles away. At the pump station, another Data Radio receives the Node data and feeds the data to a PLC. The pump cycles on or off depending on the need for water and the current reservoir levels.

Because of the difficult terrain, using Data Radios allowed us to reliably transmit data farther away (and even over hills). SureCross *Flex*Power devices using efficient power management technology allow users to choose from solar, battery, or dc power without compromising the performance or response time of the network.

Data radio and Gateway (used as a repeater) and powered by a solar panel.

Data radio and PLC at booster pump station

Node 1: Reservoir

Discrete input: Float switch
Analog input: Submersible pressure sensor (4 to 20 mA reservoir level)

Node 2: Reservoir

Discrete input: Float switch
Analog input: Submersible pressure sensor (4 to 20 mA reservoir level)

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