

Levee District uses Rain Gauge and EtherMeter to Transmit Rain Data to a SCADA System



Global Water RG600 Rain Gauge Alexandria, MO Customer Application A002

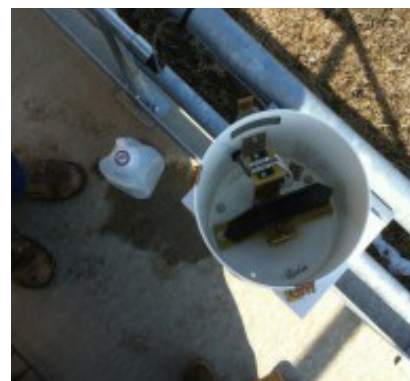
How do you create a realtime rainfall measurement appliance that communicates using Modbus, DF1, and EtherNet/IP? The Des Moines & Mississippi Levee District did just that using Global Water's RG600 Tipping Bucket Rain Gauge with a SCADAmetrics EM-100 EtherMeter.

This rain measuring instrumentation was a component of the new SCADA System at the Des Moines & Mississippi Levee District (Alexandria, MO). Klingner & Associates (Quincy, IL) served as the project's Design Engineer and combined their efforts with SCADA System Integrator, Navionics Research Inc (St. Louis, MO) and Electrical Contractor, Richards Electric Motor Company (Quincy, IL). The electronics were installed at the Levee District's new Pumping Station, where accumulated water within a network of ditches is pumped over the levee and into the Mississippi River. The station has a pumping capacity in excess of 100,000 GPM.



The RG600 Rain Gauge at Des Moines & Mississippi Levee District Pumping Station

In this applications the Levee District selected Global Water's RG600. The RG600 is an 8 inch tipping bucket. The RG600 is a durable weather instrument for monitoring rain rate and total rainfall.



Internal View of the RG600 8 Inch Tipping Bucket Rain Gauge

The RG600 tipping bucket, like all Global Water tipping buckets, were designed by the National Weather Service to provide a low-investment, reliable, industrial, tipping bucket rain gauge.

The RG600 provides a contact closure for every 1/100 inch of rainfall; and the contact output was interfaced to one of the EtherMeter's pulse input channels.

The EtherMeter was configured to measure total accumulated rainfall (1/100 inch increments), as well as the realtime rainfall rate (inches/hour). The data was transmitted to a master RTU using Modbus/RTU over RS-485.

Additional Modbus Devices Within the Pumping Station:

- » Two Toshiba VFD's (Variable Frequency Drives)
- » Two Keller America "AccuLevel" submersible pressure transducers for measuring water levels within the ditch and the river.
- » Three ADAM-4000 multichannel analog and digital I/O modules.

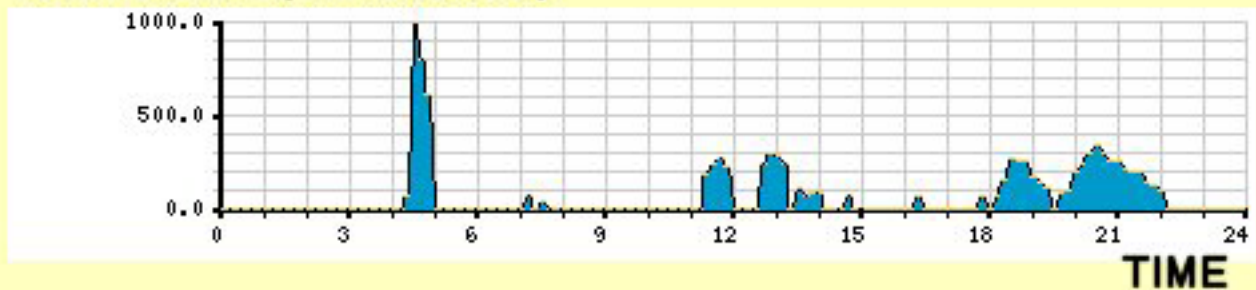


Rain Rate (Inches/Hour) & Rain Total(Inches) was measured and transmitted to the SCADA System

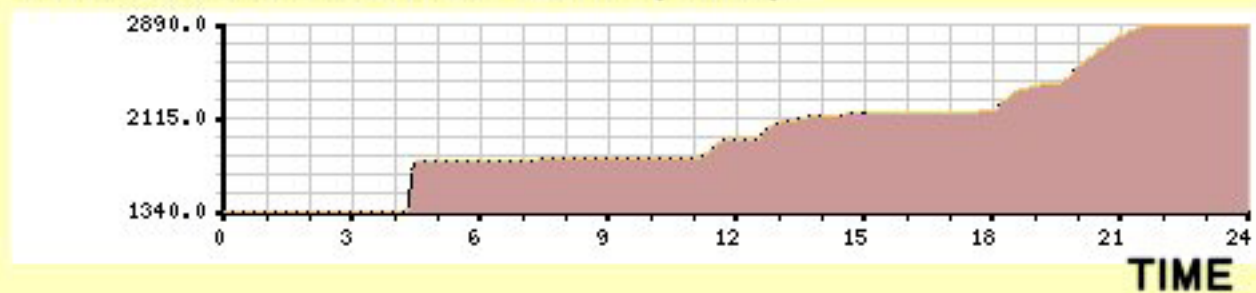
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Page 2

RAIN RATE (MILS/HOUR)



TOTAL ACCUMULATED RAIN (MILS)



Screen Snapshots of SCADA Rain Data that was collected with the EtherMeter and the RG600.

For more information about Global Water, including product specifications please visit:



www.globalw.com or www.globalw.com/products/rg600

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