

FOUNDATION™ Fieldbus Solves Modbus® Measurement Application on Hydropower Dam

RESULTS

- \$4,150 savings at installation
- Setup completed in 20 minutes
- Flawless startup

APPLICATION

Modbus pressure transmitters desired for a small project at a hydropower dam site.

CUSTOMER

Small hydropower dam

CHALLENGE

Budget restraints required the project cost to be kept at a very low level. Another challenge was that local technical support was limited at this remote reservoir. The installation and start-up had to be made by the customer's technician who had no time to spend on individual supplier's instrument training. The plant wanted to avoid the cost of buying traditional 4-20mA I/O cards for the PLC. They had expertise in Modbus communication which they wanted to use in spite of only few vendors supplying Modbus protocols. Another requirement was to be able to cost effectively upgrade the installation with more pressure transmitters in the future.

SOLUTION

The customer purchased a combined FF/Modbus solution proposed by Emerson Process Management. It included a Rosemount 3420 Fieldbus Interface Module with Modbus communication to the PLC. The 3420 is wired to four Rosemount 3051S pressure transmitters with FOUNDATION™ fieldbus.

The first two Rosemount 3051S transmitters were wired directly to the Rosemount 3420 through an Interlink BT brick. From this brick a fieldbus cable was run to another Interlink BT brick where two more Rosemount 3051S transmitters and a terminator are connected. The Rosemount 3420 has a built in power conditioner and terminator. The Modbus wiring run back to the PLC was approximately 200 feet. The wiring costs were about the same as conventional wiring because the Interlink BT bricks and the quick-connect connectors were used. The convenience and ease of



A technician who had never before seen a Rosemount 3420 completed the setup in 20 minutes.



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installation was a real value at this non-technical site and resulted in a flawless startup with no wiring or grounding issues. This will allow for easy addition of transmitters as the project grows.

The Rosemount 3420 setup was very straightforward. No special software was required because all setup and configuration functions reside in memory on the Rosemount 3420. These functions are easily accessed from any computer with a web browser and an ethernet cable. The Modbus mapping feature is intuitive and uncomplicated. A technician who had never seen a Rosemount 3420 before completed the setup of the four transmitters and the Modbus mapping in about 20 minutes. As compared to a traditional analog installation, the 3420 solution saved \$4,150. The customer was so impressed they purchased two more packages for two other dam sites.

RESOURCES

Rosemount 3420

<http://www.emersonprocess.com/rosemount/products/accessories/m3420.html>

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Two Rosemount 3051S pressure transmitters connected to an Interlink BT brick.

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