Application Note AN2009-52

Remote Building Monitoring and Control With the SEL-2411 PAC

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INTRODUCTION

This application note outlines some of the benefits of using the SEL-2411 Programmable Automation Controller (PAC) to monitor remote buildings.

PROBLEM

Remote buildings, such as well houses, booster stations, and dry well lift stations, can experience extensive damage that could be avoided or minimized if maintenance and operating personnel were notified sooner. Lift station failure can result in environmental damage and is most apt to happen when operators are not present due to infrequent visits. Well houses or booster stations in colder regions rely on heating systems to keep pipes from freezing, breaking, and flooding electrical controls in the same room.

SEL SOLUTION

The versatility of the SEL-2411 facilitates a variety of sensors that can monitor environmental conditions. Heaters, ventilation fans, and intrusion and flood alarms provide opportunities for early intervention by operating personnel. Additionally, the SEL-2411 is ideal for primary or redundant monitoring and control systems required by engineers to meet state and federal construction standards for water and wastewater facilities.

With an operating temperature range of –40° to +85°C, conformal coating on all circuit boards, and a ten-year warranty, the SEL-2411 is suited for the harshest of environments. It has flexible I/O and low power options available to maintain uninterrupted control and communications with backup battery power.

PRINCIPLE OF OPERATION

Intrusion door and window switches connected to digital inputs on the SEL-2411 provide notification of unauthorized entry. RTDs (resistance temperature detectors) with appropriate ranges can be used to monitor building temperatures. This is important for remote buildings where a failed heater can lead to frozen pipes, pumps, and other expensive equipment. The heating and ventilation systems can also be locally or remotely controlled through the SEL-2411, preventing equipment from overheating. A flood sensor connected to a digital input provides early notification to maintenance personnel.

Figure 1 Building Monitoring and Control

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