Application Note AN2009-58

Expanding Substation Security

William K. Myrhang

INTRODUCTION

Copper wiring theft is a serious, growing problem in utility substations that results in financial loss, equipment damage and operation, and even potential loss of human life. Many traditional business security systems provide a connection to a centralized alarm center but do not provide easy communication to the utility SCADA (supervisory control and data acquisition) system for monitoring over common substation protocols like Modbus® or DNP3. This application note demonstrates how the SEL-2440 Discrete Programmable Automation Controller (DPAC) can enhance the security monitoring and protection of your substation. The SEL-2440 DPAC provides the simplest and least costly means of bringing substation security information into your SCADA system.

SEL SOLUTION

Consider the simple and economical SEL-2440 DPAC for use in protecting the substation. Apply the DPAC to satisfy standalone security needs or integrate with your existing security system. The SEL-2440 DPAC provides fast and powerful I/O, programmable logic, flexible communications and integration with SCADA, and convenient maintenance, as well as SEL quality, standards, and global support. The SEL-2440 DPAC withstands harsh physical and electrical environments and is built and tested to meet mission-critical IEEE and IEC protective relay standards.

Use Figure 1 as a guide for a substation security system. Connect your fence and motion, panel, and door sensors to the SEL-2440 DPAC digital inputs. Wire intruder deterrents like strobes, sirens, and substation lighting to control outputs. Use the built-in timers and logic to create layered zones. Record critical events with the built-in SER (Sequential Events Recorder) capabilities, and communicate the information to your substation SCADA system with Modbus or DNP3 over serial or Ethernet communications. Notify your security response team by adding an SEL-3010 Event Messenger to dial phone numbers with a programmable, audible message.

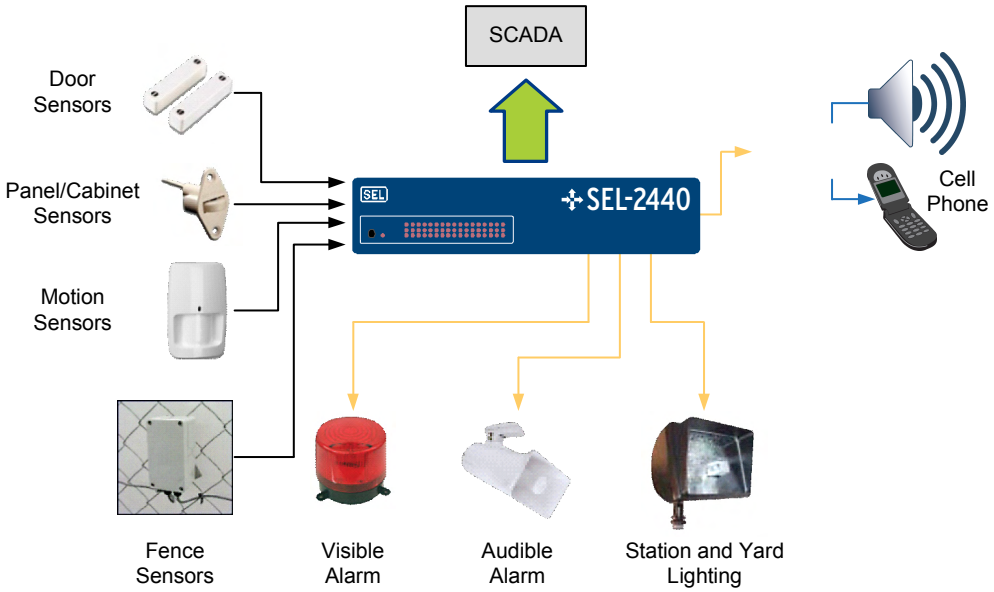

Figure 1 Substation Security

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SCHWEITZER ENGINEERING LABORATORIES, INC.
2350 NE Hopkins Court • Pullman, WA 99163-5603 USA
Tel: +1.509.332.1890 • Fax: +1.509.332.7990
www.selinc.com • info@selinc.com