# I&CS

INSTRUMENTATION & CONTROL SYSTEMS

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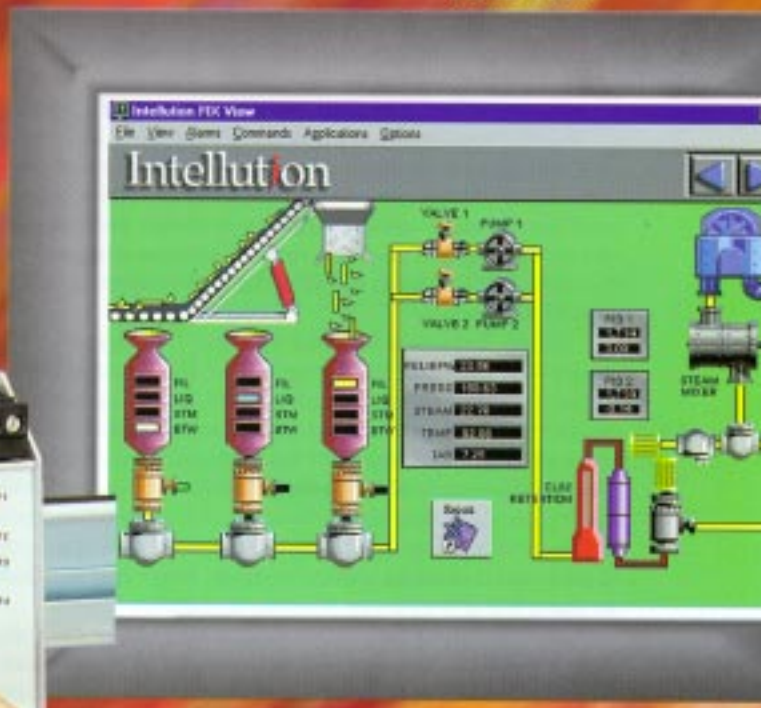
SPECIAL REPORT ON

# TEMPERATURE CONTROL


**Software Course, Part 6**

**An exclusive interview with Len Moore of Moore Industries**

**A case for the sliding gate valve in pressure regulator applications**

**ERP helps manufacturers control their businesses**

**PLC and distributed terminal I/O increase uptime, decrease costs**

*The Publication of Control Technology for Engineers and Engineering Management*

# Versatile alarm system for HART can be programmed in the field

**Peter Cleaveland**
*Senior Technical Editor*

HART® is, without question, one of the most widely applied digital communication protocols in the process industries. However, often it's only used for one-way communications—typically to remotely configure instruments—rather than to establish two-way communications between field devices and monitoring and control systems. This is because many of the latter aren't set up to use all of the digital information that a HART link carries.

Moore Industries-International has just introduced a device that can take full advantage of the HART protocol. Called the SPA Site-Programmable HART Alarm, it connects to a HART loop and monitors the digital output from an instrument without interfering with the 4-20 mA signal. When the process falls outside of user-selectable high and/or low limits, the SPA provides from one to three alarm trip (relay) outputs. It also provides an isolated 4-20 mA or 0-10 V output proportional to the monitored process variable, which makes it both an alarm trip and a process variable transmitter.

This microprocessor-based unit, which works with any instrument that communicates information on temperature, pressure, level, and flow via HART, includes an instrument fault alarm, which watches the Field Device Status Byte data included in the HART protocol. If a field device malfunctions, or if the primary variable analog input is fixed, saturated, or out of bounds, it generates an alarm trip.

Because the SPA is independent of the host distributed control system, it can shut down critical loops if there's a failure. Outputs can go to the primary control system or to an alternate backup system to provide local readout/control or complete control system redundancy.

The SPA is programmed by the user with on-board controls and a digital display. A set of scroll-through menus make it easy to select application-specific parameters. The unit stores dozens of configuration options, and can coexist with other HART handhelds elsewhere on the system.

Configurable alarm trips include trip point settings, high or low alarm, adjustable deadband and alarm delay, latching on/off, and failsafe or nonfailsafe relay action.

The SPA continuously monitors its own condition, watching for calibration, memory, and overall unit function problems. If it senses a problem, it displays an error message on the front panel LCD, and can output a fault alarm. Other features include a security password, 24 Vdc transmitter excitation, and a universal DIN-style housing. Prices start at $460.—Moore Industries-International, Inc., 16650 Schoenborn Street, Sepulveda, CA 91343-6196, (818) 894-7111.

**Circle 250 on I&CS Reader Service Card**

***The SPA Site-Programmable HART Alarm keeps track of system conditions independently of the control system.***