

BATH AUTOMATION PACKAGES



So you're buying a world-class Hart Bath and you want a world-class automation package to go with it.

We've got it.

Hart's Bath Automation Package is the only complete automation option in the industry. It includes everything you need to run and monitor your bath from your PC—including software.

In addition to an RS-232 link that allows your PC to communicate with the bath's controller, you get full automation of refrigeration and power settings; this includes PC-controlled relays, solenoids, and refrigeration valves. All are built into the bath system during assembly.

Each package is complete with Hart's *Interface-it* software that gives you an easy-to-use Windows-based virtual front panel. It controls your bath without writing any code or spending countless hours with a manual. Bath set-point and cutout temperatures are set and read on the screen. Actual bath temperature (read by the bath's controller) is continuously displayed and logged on a real-time strip chart recorder so you can track stability.

For IEEE-488, we provide communication protocols so you can write

your own software. Just add Model 2001-IEEE when ordering.

For a completely automated calibration system, use Hart's *Calibrate-it* software (page 80). In addition to controlling your baths, it interfaces with your reference thermometers and data acquisition to perform automated calibrations from the beginning to the printing of certificates and reports.

Technical Tip

Periodic Bath Testing

All calibration apparatus should either be tested or calibrated. Calibration baths are no different. Although the accuracy is often of secondary importance, bath instability and non-uniformity directly affect calibration uncertainties.

To ensure continued performance, these bath characteristics should be tested periodically. The tests should be carried out at all temperatures commonly used and under typical conditions.

Additionally, since the goal of the tests is to determine the contribution to uncertainty, these tests should be conducted only over the "calibration zone" used in your process, not over the entire zone available. The tests can be conducted with several sensors or with a single sensor moved from one location to the next.

Map the differences and include them in your uncertainty analysis. In most cases, with a bath, the values observed will be significantly smaller than the published specifications.



Scott, Sharon, Rose, and Joel use a microscope to check the size of their bonus checks.