Collect™ Pro

Converts Excel® into a Powerful Instrument Control Application

LABTRONICS INC.

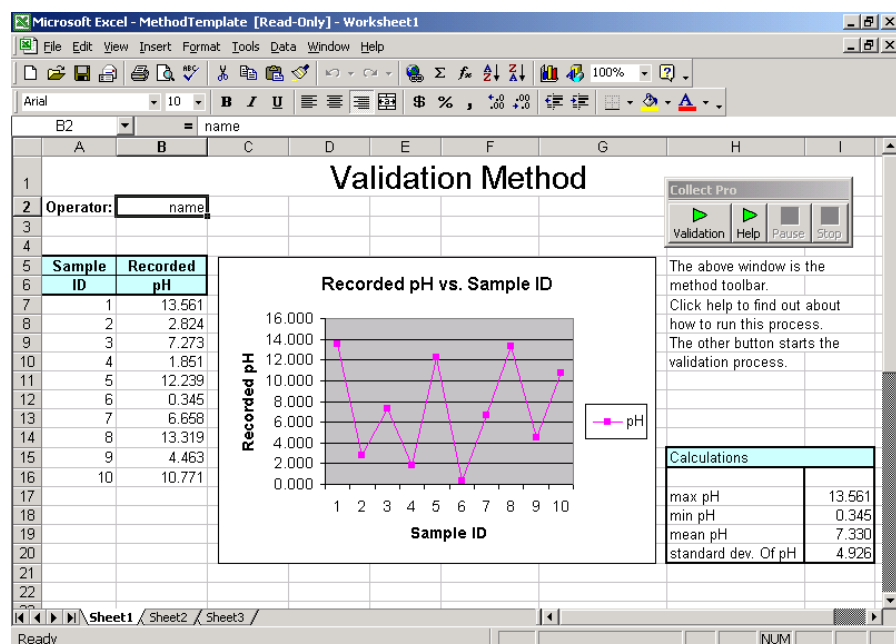The Instrument Interfacing Experts

Instrument Control

Collect Pro combines the power of Excel® with an easy to use data collection and instrument control engine.

- Contains an instrument library of hundreds of pre-configured laboratory instruments
- Allows non-programmers to automate and control instruments
- Collects data directly to Excel®
- Is able to send commands and automate RS232 and TCP/IP instruments
- Controls I/O lines (turn switches, valves, lights, alarms, etc.)
- Combines multiple instruments into a single experiment
- Collects and controls instruments at remote locations

The Power of Collect Pro

The following is just a sample list of what Collect Pro can do for you. Combine any or all of these into an automation process that meets your requirements.

- display messages to the user to request information (i.e. password)
- start, stop and control instruments
- combine several instruments to work as an integrated workstation
- automatically check results and cause equipment to take action
- collect data over the network from a remote site
- print collected data to bar code labels
- write data to an ASCII file for use by other applications
- read files and transfer the data to Excel®
- control RS232 and TCP/IP instruments
- monitor instruments over the internet
- automatically trigger Excel® macros, based on results
- display instructions to lead a user through a manual process (control the SOP)
- carry out actions at timed intervals
- graph results gathered over time
- read and write to Access®, Oracle®, and SQL Server® databases
- start and run any other program

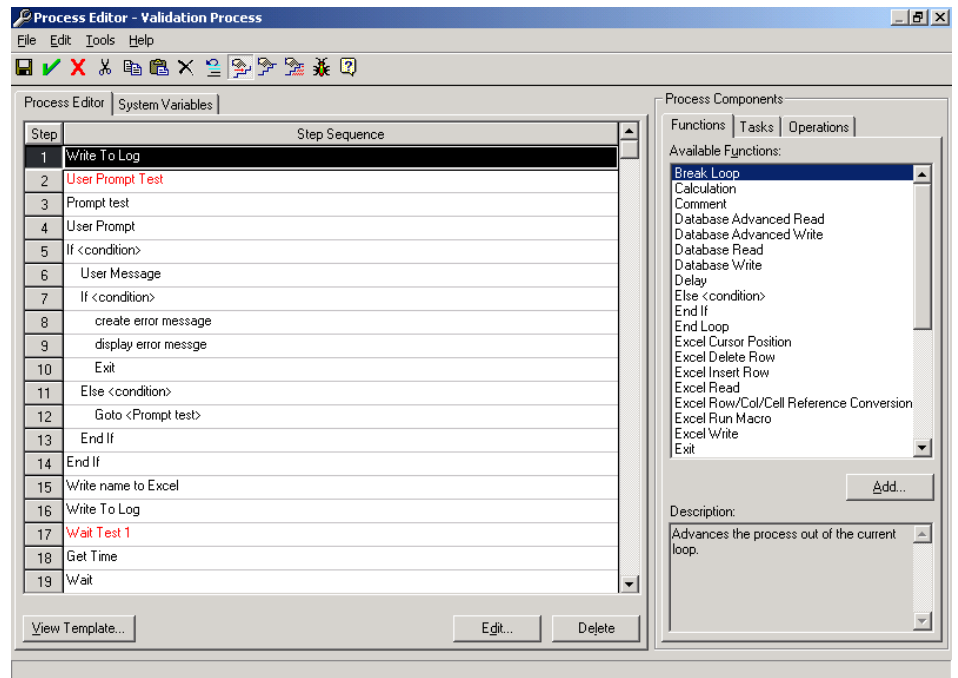
A completed pH analysis worksheet.

How it Works

At the heart of Collect Pro is a powerful Process Controller that carries out a sequence of user-defined steps. These steps collectively form the Process. When the Process is started from Excel®, each step will be carried out in turn — one step after the other, resulting in an automated Process. The steps can include branching, decision making and looping, providing for an endless array of possibilities.

Instead of a complex programming environment, Collect Pro uses very simple 'fill-in-the-blank' technology, which allows non-programmers to create their own automation procedures. If you can create formulas in Excel®, you can configure Collect Pro.

Each step is simple to set up, but can carry out complex operations. In a programming environment, sending a command to an instrument can take many lines of code to open the serial port, send the command, receive the response, parse the data, save the results, handle errors with the instrument, etc. However, with Collect Pro, you add just one simple step to do all of this. You select the instrument plus the desired command from a drop down list. The rest is done automatically for you.

For each Process that is defined, Collect Pro will add a new button to the Excel® toolbar. When you select the button in Excel®, Collect Pro will run through the steps and carry out all of the automation you have specified. Additional buttons are automatically added to stop or pause the Process. An Excel® workbook can have any number of Processes defined for it — each one adding it's own button to Excel®.

Process Controller showing a list of user-defined steps.

Instrument Library

One of the difficulties when interfacing instruments is understanding the data formats and command structures used by the instruments. Collect Pro has simplified this for you by providing hundreds of pre-defined instruments in an instrument library. Once the instrument is in the library, all you have to do is select it from a drop down list and the rest is done for you. Each instrument in the library has been tested to verify the functionality by either Labtronics or the instrument manufacturer.

Labtronics adds new instruments to the library on a regular basis and makes this library available from our web site, free of charge. Download the new library at any time — **http://www.labtronics.com/support#library**.

If your instrument is not in the library, you can add it yourself, or contact us and we will gladly help you add it. Any RS232 or TCP/IP instrument can be added.

What happens at run time?

When you start Collect Pro, it will ask you to select a pre-defined method. Making the selection will start Excel® and load the correct Excel® template. Buttons will be automatically added to Excel® to Start, Stop and Pause the Process. The daily working environment for Collect Pro is the Excel® spreadsheet that you are already familiar with. Except for the added buttons, you are using Excel® just as you do now.

When you are ready, press Start and Collect Pro will run the automation Process. You can now work with other programs, including other non-controlled workbooks of Excel®, without interfering with Collect Pro. It will continue to run in the background, without interfering with your other work. While you are working on other things, Collect Pro will start instruments, collect data, write data to Excel®, read in files and all of the other steps that you have requested in the Process. Any collected data will be added to Excel® in real time – you'll see data pop into cells as it happens. You can return to the active Excel® workbook at any time to review the progress or to stop the Process.

The automation can be transparent and run in the background or it can be very interactive. It can require the user to perform activities such as enter information, make selections, turn on instruments, approve results, etc. For example, a prompt may ask the user for the number of samples or the target pH that a Process should reach. This information is then used to control the automation. The steps in the procedure can be designed to enforce steps in an SOP (standard operating procedure), ensuring that they are always completed in the same order and in the same way.

Remote Instruments

Collect Pro is generally used for controlling instruments that are connected directly to the computer running the program. However, Collect Pro has been designed to be 'network friendly' and is able to communicate using the network communication protocol, TCP/IP. This allows the program to collect data and control instruments anywhere on the network, even over the internet.

Some examples of remote applications include:

- taking readings every 10 minutes from all of the fridges and freezers in the building
- checking the temperature and sending a warning email, if limits are exceeded
- monitoring the TOC values from an on-line analyzer, from a remote computer
- starting and monitoring an experiment at a remote location

Using accessory hardware, any RS232 instrument can be connected directly to the network without requiring the presence of a computer. This instrument can then be monitored and controlled by Collect Pro from any location on the network. **Contact your Labtronics representative for more details**.

Professional Services

The Collect Pro software is designed with user setup and ease of use in mind; however, Labtronics understands that not everyone has the time to set up and learn any new software no matter how easy it may be to configure and use.

Contact Labtronics about the services available to help bring your system on-line quickly through our expertise.

Applications and System Requirements

- Windows® NT or Windows® 2000
- 128 MB RAM
- PII processor or better
- 20 MB hard drive space for installation
- Excel® 2000

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