

A Guide to Selecting RS232 Data Collection Software

In laboratory and manufacturing environments, there are countless opportunities for improving efficiency by automating data collection from instruments and devices with RS232 ports.

There also seem to be countless applications that offer RS232 data collection. So how do you know which application is the right choice for you?

The following guide looks at 5 key considerations for selecting an application that will provide the most effective solution for your RS232 data collection and recording requirements.

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Making the Connection

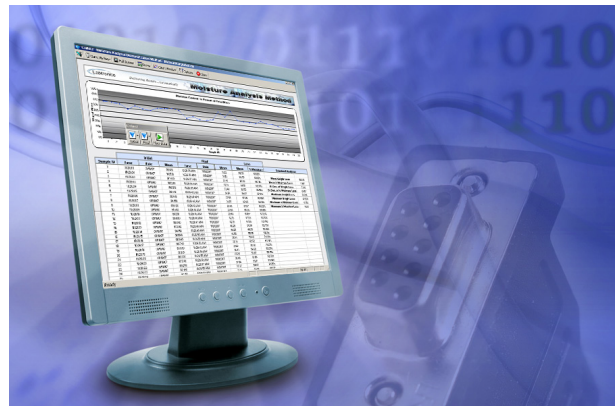
The first requirement is to make sure that the application can connect with your instrument or device.

In most cases, a simple RS232 connection will meet the basic requirement; however, there can also be additional requirements:

- Your application may require connecting to multiple instruments simultaneously.
- You may need to connect through RS232 data collection boards.
- When connecting to laptops there may be a need to connect through USB to serial converters.

There can also be situations where it simply isn't possible or practical to put a computer close to the RS232 instrument or device. There may not be enough physical space or the instrument may be

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located in a clean room or at a remote location. In those situations, being able to collect over a network using TCP/IP data collection will provide more flexibility.

You are going to need to understand the communication requirements and protocols of your instrument or device. Setting up communications can involve entering values for a number of parameters including baud rate, data bits, stop bits, parity, flow control, timeout, null processing and more.

These values can usually be found in the instrument manual. Labtronics' Collect software simplifies setting up these instrument parameters by including an Instrument Library with pre-configured interfaces for over 500 instruments.

Tip: Being full-featured shouldn't mean being complicated. Features that simplify setup (i.e. Collect's Instrument Library) will eliminate delays and frustrations in getting your instrument data collection working.

Getting the Data You Need

Whether you are working with a simple balance or a more complicated analyzer, your data collection application will need a “parser” to identify and to extract the data elements that you need from the data stream.

Some instruments, like balances, may generate very simple data, while other instruments and devices will generate more complex data, consisting of multiple lines and multiple data elements (Product or Sample ID, test result, tare weight, Batch ID, etc.) that are important to your test.

A good parser should be easy to set up, yet powerful enough to easily handle complex data streams. There are three main types of data parsers:

- Numbers parsers that only extract numbers from the data stream.
- Delimiter parsers use commas, spaces, etc. to identify the data to be extracted.
- Position parsers extract data, based on its position in the data stream.

Tip: *RS232 data collection applications that provide multiple parsing options will provide the most flexibility for easily identifying and isolating each specific data element that needs to be extracted from any RS232 data stream.*

Choosing Your Data Destination

Many entry level data collection applications use a “wedge” style data collector to send data through the keyboard buffer on your computer to whatever location is currently highlighted by your cursor. This can be a cell in an Excel® spreadsheet, a data entry field on a LIMS client, a Word document, etc.

While wedge data collection is fine for simple applications, it has some real limitations:

- If the wrong cell, data entry field, or even the wrong application is highlighted, the data will end up in the wrong place.
- If the operator forgets to move the cursor every time a new result is collected, data will get overwritten.
- Operators cannot work in other applications during data collection.
- Since there is only one cursor in Windows®, multiple instrument interfaces are not handled well.

If other data destination options are available, this provides more automation and more control over data collection. These options reduce the chance for error and are often more suited to the way data is actually collected and used:

- Excel® spreadsheets – Excel® is the most popular destination for RS232 data. Applications, that provide a high level of integration with Excel® can provide more accurate, more efficient and more automated data collection.
- Local & Network Files - When multiple results are being generated, collecting data to a file can free up analysts to do other work while data collection is going on. Files can be imported into applications after data collection is complete.
- Databases - Databases can be used as a destination and storage location for serial data.

Tip: *An application that provides multiple data destination options gives you the power to manage each data collection scenario most efficiently.*

Automation and Ease of Use

The best RS232 software will add as much automation as possible to the data collection and recording process in order to simplify use, reduce the possibility of user error and provide maximum efficiency.

The following are just some of the added automation and ease-of-use features to look for:

- One-click launch that can start the RS232 data collection software, launch the destination application, connect with the instrument and start collecting data - all with a single mouse click.
- Embedded VBA support for creating macros that provide advanced control.
 - Automate workflow decisions, based on results.
 - Generate user prompts, based on data values (ideal for highlighting out-of-specification results).
- Floating toolbars that control instruments and data collection.
- The ability to automatically add meta data (data & time stamp, operator ID, instrument ID, etc.) to incoming data.
- The ability to send commands that control instruments and devices.
- Timed data collection - automatically collect and process data on a timed interval basis.
- Pre-configured Excel® spreadsheets to help setup common applications.
- The ability to collect from multiple instruments simultaneously - on a single computer.

Tip: Think of automation and ease-of-use as the real “value” components in RS232 data collection software. This is where the best solutions really stand out and deliver lasting benefits.

Cost

“You get what you pay for” is an old saying that can be easily applied to the range of RS232 data collection software options that are available.

Basic shareware programs that can be downloaded for free can quickly become frustrating due to their limited functionality. Programs with more features and capabilities that can be applied to a wider range of applications and deliver a higher degree of automation usually come with a higher price tag. The higher end applications; however, will typically deliver a much higher return on investment over time.

In evaluating the cost of an application, be sure to consider the following:

Flexibility

A basic low cost data collector may solve your immediate problem, but is it going to help you when you have applications with more extensive requirements? A more flexible, full-featured solution is going to solve more problems for you, delivering a better return on your investment.

Ease of Use

Some of the best technical solutions end up gathering dust because they are difficult, awkward or challenging to set up and to use. Your RS232 data collection solution should provide a simple and straight forward interface for performing even complex data collection tasks.

Technical Support

You want to be sure that the solution you choose offers the level of support that you demand from all of your software applications. Nobody wants to risk their operational efficiency with a product that is not fully supported or continually upgraded to meet changing requirements.

Tip: The very best, top of the class, full-featured RS232 data collection solutions are surprisingly inexpensive. For example, Collect from Labtronics is available for less than \$500, a relatively low cost solution that ensures a rapid return on your investment.

Collect Free Trial - Make the Right Choice

Collect is a full-featured, data collection solution that delivers real value to any RS232 data collection requirement. Flexible, easy-to-use and packed with automation features - Collect is the right tool for the job.

For a limited time, Labtronics is offering a Collect Trial CD, a full version of Collect that will run for 30 days after it has been installed. Collect's pre-configured instrument interfaces and automation methods included on the CD will help you to get started quickly, so you can make the most of the 30-day trial period.

Request your Collect CD: di-sales@labtronics.com