

How to Select a Recorder

Recorders are instruments used to create a visual record of process signals. They are incorporated into process control systems whenever there is a need to preserve data as part of a regulatory compliance regime or as a way to monitor the process and identify trends.

Recorders serve a similar purpose to data loggers though data loggers are smaller devices that electronically store data points and do not, themselves, create a visual record. The data itself is produced by application specific sensors that attach to the recorder. Virtually any type of data can be recorded including temperature (thermocouple, thermistor, RTD), strain gauge or bridge, current, humidity, level, pressure, pH, and many others.

There are three main types of recorders: circular chart recorders, strip chart recorders and videographic recorders. Selecting the right recorder for your application is as straightforward as choosing the type of recorder you want and making sure it has the features and functions required by your application.

Circular Chart Recorders

Circular chart recorders archive data points on a round chart over a timed interval. Using data acquired by 1 to 4 sensors, circular chart recorders rotate uniformly while one or more pens plots the data radially in proportion to the signal received. The charts usually rotate over standard time periods (e.g. 24 hours, one week, one month, etc.) though some recorders can rotate over non-standard lengths of time. The benefits of circular chart recorders include the ease of operation, the hardcopy it produces, and real-time output. Many recorders can also record information in a digital format for download to a computer.

Circular chart recorders require the correct charts and pens to work correctly.

Strip Chart Recorders

Strip chart recorders use a long roll or strip of paper to archive data points over a timed interval. Using data acquired by up to 36 sensors, strip chart recorders use one or more pens to plot the data linearly as the chart passes at a uniform speed. The benefits of strip chart recorders include the ease of operation, the hardcopy it produces, and real-time output. Many recorders can also record information in a digital format for download to a computer and provide browser monitoring capabilities via an Ethernet connection. Strip chart recorders require the correct charts and pens to work correctly.

Videographic Recorders

Videographic recorders use a graphic display rather than paper charts to record data. The data from up to 48 inputs is stored in a digital format which can be viewed in real-time or recalled later. Data can also be transferred to computers for archiving or generating reports. Benefits of paperless recorders include better programming options, no need for charts and pens, and the ability to more easily handle large amounts of data. Scaling, mathematical functions, and Ethernet connectivity are also possible.

Things to consider when selecting a recorder:

- Is a hardcopy needed?
- How many inputs need to be recorded?
- Do you want color differentiation for trend lines?
- What types of inputs (dc voltage, current, thermocouple, RTD) need to be recorded?

- Do different input types need to be recorded in the same unit?
- Is a communication interface required? What type of communication?
- Are alarm functions needed?
- What types of alarms: threshold, rate, delta?
- Are physical relay contacts available for external alarm output?
- How many setpoints per channel?
- How will the unit be mounted?
- What type of instrument power is available?
- Is an excitation source required for the sensors? What type of output (voltage or current) is required?
- Are hazardous area certifications or NEMA rating needed?
- Is log-type recording desirable in addition to trend recording?

If you're still not sure which recorder is the best fit for your application, call us and one of our application engineers can help you make a more informed decision.