Event recording (or logging) with a Fluke 287/289 Digital Multimeter

Application Note

One of the major features of the Fluke 280 Series digital multimeters (DMM) with TrendCapture is their ability to record measurement data or "do logging." This application note explains what kind of logging these meters can perform, how to use the recording feature, and what information it can provide. This note also discusses how to use FlukeView® Forms PC software to increase the power of the Recording feature.

For the balance of this note, we will refer to the Fluke 289 DMM, although the information is equally applicable to the Fluke 287 DMM.

Note: This article references features included in a firmware upgrade to the 289 DMM released in August, 2008. To obtain the latest firmware version, visit **www. fluke.com/software-downloads**. For a summary of the changes, reference the end of this document.

Differences between the Fluke 289 DMM and a data logger

The Fluke 289 does not do data logging in the traditional sense. Typically, the goal of a data logger is to sample the input signal at a rate sufficient to track activity that you might find in the signal. This often means that it is desirable to sample the input as fast as possible so you don't miss anything. The problem with this approach is you need a large storage place for the fast data sampling that is taking place. You can also end up wading through a lot of redundant data that is considered "normal" to find the exceptional data (or lack thereof).

The difference between the Fluke 289 DMM and a traditional logger is that the DMM, while sampling internally at a sub-second rate, records only significant changes in the readings. This technique, called event recording, requires far less memory. Still, it does an effective job of monitoring and logging data from an input signal, enabling you to detect if and when the monitored system is operating abnormally.

The other difference is that the Fluke 289 DMM can graph the data onscreen in TrendCapture mode, immediately after the recording session is completed. TrendCapture is a major enhancement in the 28X family over the previous logging capability of the 189, which had to upload each recording session to software to graph and view the results. The Fluke 289 uses similar graphing software (optional) for detailed analysis, but its ability to graph even rough details immediately, onscreen, can be very powerful. In addition, the 28X can now hold multiple recording sessions in it's memory allowing troubleshooters to get multiple sets of data, possibly at different locations, without having to download each session as in the past.

Introduction to event recording

Event recording can be thought of as an extension of the "Touch Hold" feature of the original Fluke 87 DMM. (Touch Hold is now called "Auto Hold" on the 287/289.) When the Auto Hold feature is activated, the meter waits until a period of stability