



## Digital Fault Recorder

The Digital Fault Recorder (DFR) System built upon the integrated Substation Control System (iSCS) is a highly effective tool for analyzing substation events.

Distributed throughout your substation, the D25 intelligent Electronic Device (IED) collects fault data. This data is brought back to the PowerLink workstation in real-time over the iSCS LAN. The advanced PowerLink workstation has a full suite of tools to assist you in the post-fault analysis. The scalability of the iSCS provides no practical limitation to the number of Analog or Digital channels available. The automatic fault record retrieval and archive feature provides a central repository.

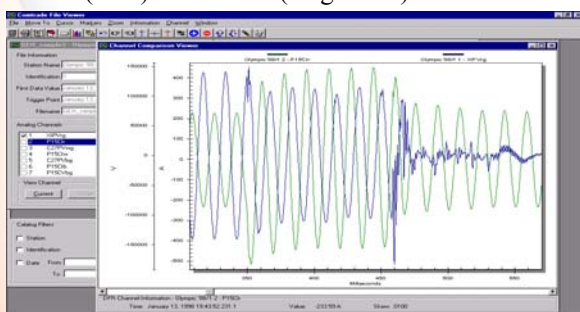
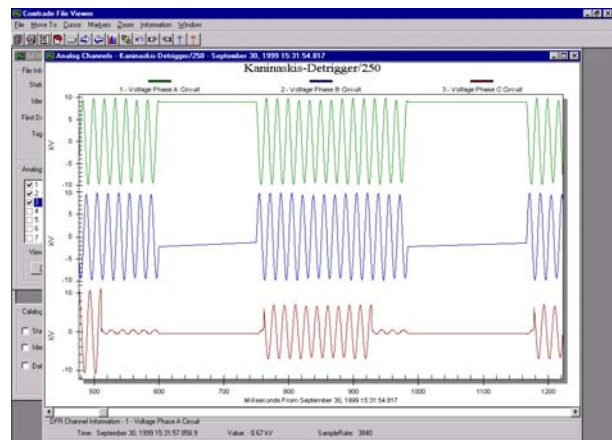
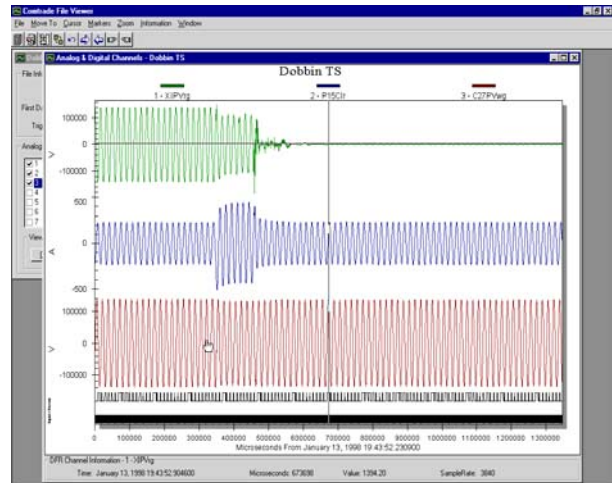
You can determine the cause of each event, the order of events, the performance of the breakers, and the breakers' health. GE Energy Services provides the tools for you to access the information you need.

### Features

The D25 has 15 AC analog channels sampled 64 times per cycle and 96 digital channels sampled at 1 kHz. The DFR System features Online configuration, unique de-trigger system, and 240 cycles of storage.

The DFR System features Direct View and the DFR Viewer on the PowerLink workstation and supports viewing multiple fault records in a single window. Each trace is displayed in a unique color that can be assigned or modified by the user.

DFR supports Pan and Zoom on both the X-axis (time) and Y-axis (magnitude) for each trace to



magnify the size of the selected portion or reduce the waveforms to a minimum of the sampling rate. The sampling rate is displayed on the screen. When you zoom in on a trace, the software interpolates data points between samples in order to display a smooth curve. You can choose to show the sample values along the trace.

The timestamp, the value, and the time difference between the two cursors are displayed. You can request harmonic

information (up to the 21<sup>st</sup>), Frequency deviation from 50/60 Hz, Positive, zero, and negative sequence symmetrical components and calculate true RMS values between the two cursors.

You can drag and drop traces over one another for wave shape comparison or for time synchronization of traces.

All windows are capable of being printed on a color printer by a simple click on an icon. Before printing, you can enter the station name and property identification number. The printing function will print the exact image displayed on the screen.

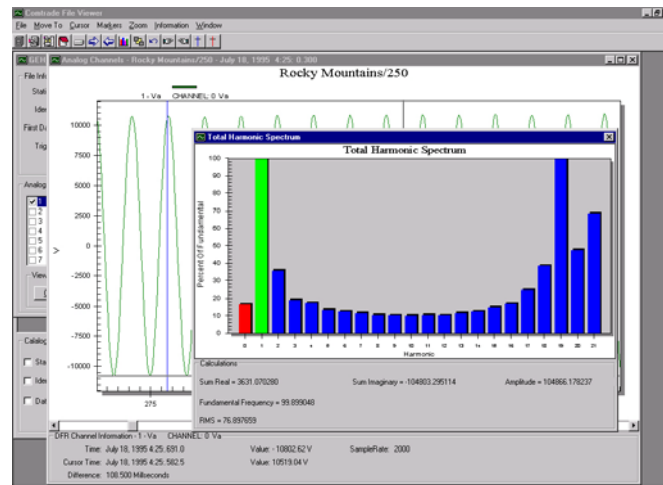
The DFR system fault records are stored in the industry standard IEEE COMTRADE (IEEE C37-111-1999) file format.

## Benefits

The DFR System can save you money. By combining the SCADA and Digital Fault Recorder Systems, the installation costs can be lowered.

- One set of hardware
- One communication system
- One system to maintain
- One set of wiring
- One system to commission

Remote access to the Digital Fault Recorder data eliminates the need to travel to the site. Permanently installed equipment eliminates the need to install portable Digital Fault Recorders.



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