

*Everyone needs **TRANSDUCERS** for measuring electrical parameters.*

*Is your mains **VOLTAGE** free from transients?*

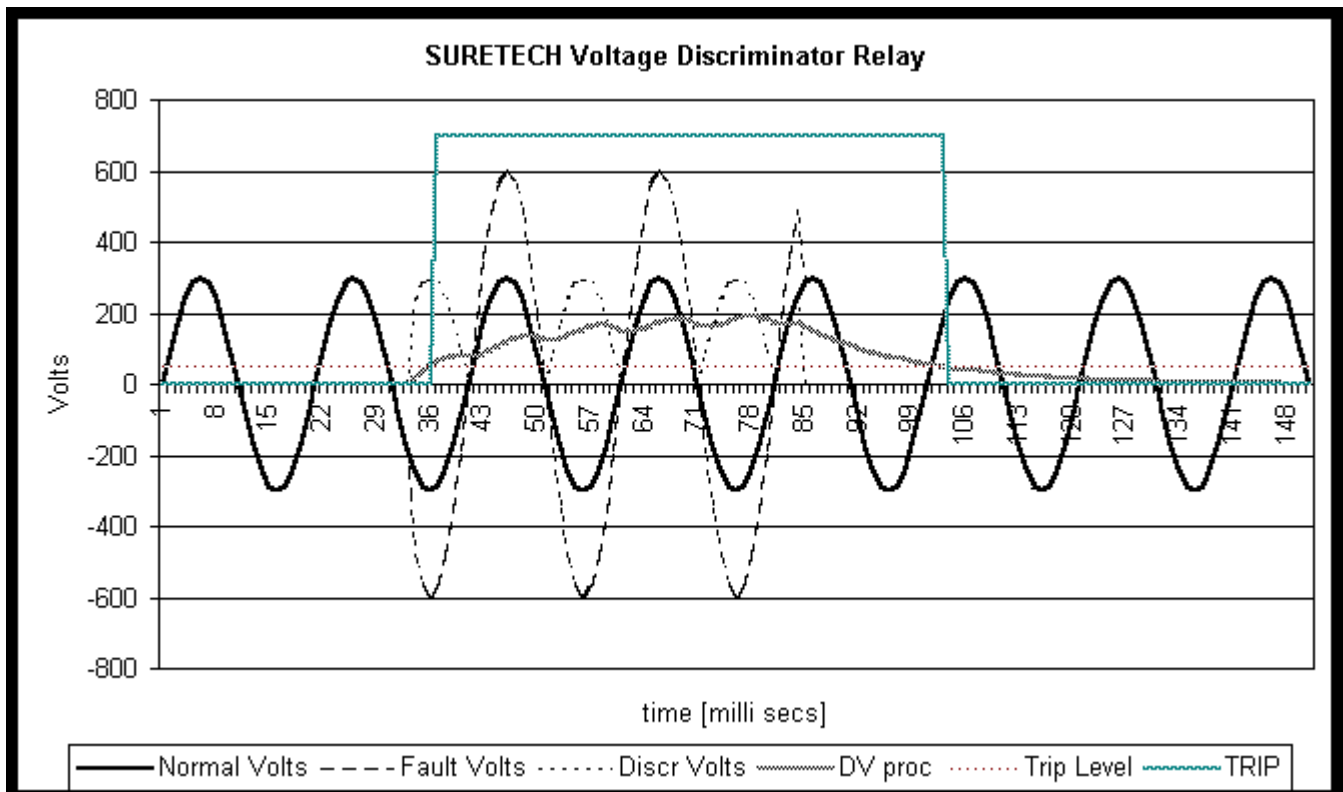
## **SURETECH Voltage Discrepancy Relay**

Do you have the need to continuously track the voltage being applied to your electrical equipment? Perhaps you have debates with your colleagues as to how clean your electrical system supply is?

The SURETECH Voltage Discrepancy Relay (VDR) tracks the voltage on up to four channels by sampling every 1ms. The "normal" voltage observed is filtered using a tracking filter, which has a tracking time-constant of about half a second. This provides the VDR with the "normal" voltage. Instantaneous deviation from the "normal" voltage is then signal processed (DSP) to provide the "DV proc" signal (Discriminated Voltage processed). The trip voltage level is user programmable by means of jumper settings. If more advanced options are chosen then the user can interface to the VDR by means of PC directly. The VDR has three modes of operation: Acquisition, Tracking, and Trip. VDR settings are saved in non-volatile storage. These switch transient parameters can be fed to your SCADA system, or downloaded to your laptop computer via the RS232 port.

### **General Features:**

- ✓ Voltage inputs can be taken from 110Vac, 220Vac, or directly from our SURETECH VTs to measure voltages up to HUNDREDS of kV.
- ✓ Trip level on voltage discrepancy is user programmable by jumper setting
- ✓ Opto-isolated output for fast trip signal out
- ✓ Transient suppression on inputs and outputs
- ✓ Wide range of auxiliary Power Supply options available, including 110Vac, 220Vac, and battery supplies
- ✓ Inputs, outputs, and auxiliary power supply are galvanically isolated
- ✓ Standard K125 transducer enclosure for simple mounting (125mmx70mmx117mm), which has standard screw terminals for easy and reliable connections, and standard DIN (Top-Hat) rail mounting arrangement

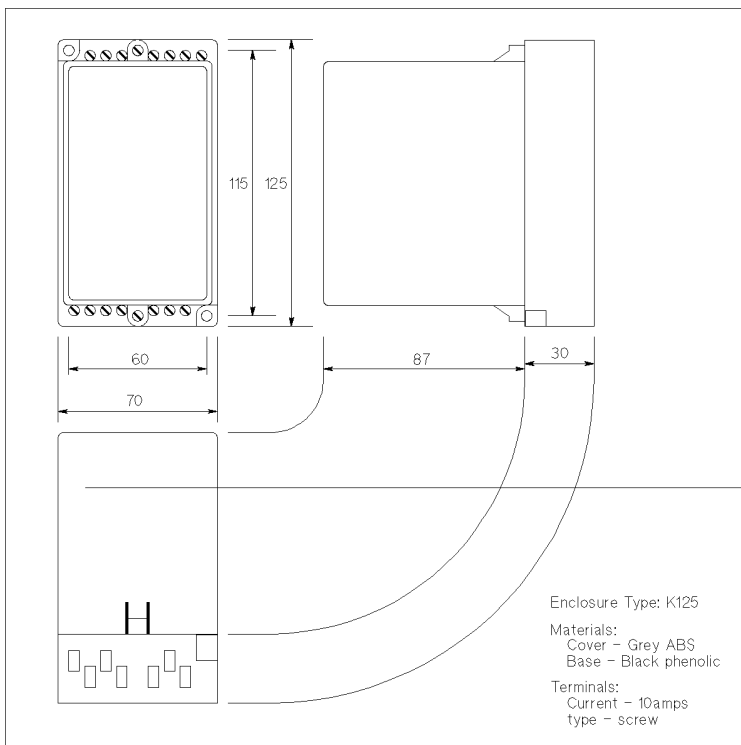


## Optional Features:

- ✓ Non-volatile Data Flash memory accumulates 1Mbyte or more of data
- ✓ Real time clock and date for event analysis and data logging
- ✓ Number of discrepancy events (such as brown-outs) can be counted
- ✓ IGBT switch for (fastest) equipment mains control
- ✓ Other fast tripping contactors can be interfaced
- ✓ LCD display for smarter interface
- ✓ RS-232 / RS-485 output for logging to a PC, SCADA or network
- ✓ Current inputs can be incorporated (see information on our SURETECH Hall effect sensors)
- ✓ Backup to provide you support for design, application, installation, and maintenance information

## SURETECH Voltage Discrepancy Relay Operation:

MODE	OPERATION
ACQUISITION	<ul style="list-style-type: none"> <li>• At system start-up or after the TRIP is cleared, the VDR enters the acquisition mode. The VDR normally takes half a second to settle, which is detected by the VDR, and requires the mains voltage to stabilise</li> </ul>
TRACKING	<ul style="list-style-type: none"> <li>• When the tracking mode is entered, the VDR tracks any slowly varying fluctuations on the mains over the previous half second. When a large voltage variation exceeds the TRIP level that has been programmed, then a TRIP occurs</li> </ul>
TRIP	<ul style="list-style-type: none"> <li>• The TRIP signal is issued by the VDR when the TRIP level is exceeded, and will remain in this mode until a reset signal is applied</li> </ul>
DOWNLOAD	<ul style="list-style-type: none"> <li>• A user interface is available to alter various parameters, as well as downloading the DATAFLASH memory to a PC</li> </ul>



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