



## Current and Voltage Detection Board



**Type:** CVD

### Description

The Current and Voltage Detection Board (CVD) provides local detection of fault events in conjunction with motor operated pole-top switches, enabling local automatic or remotely controlled sectionalizing and fault isolation. In automatic mode, the CVD will initiate motor operation of the associated switch (open or close) after recognition of a valid fault event. In remote mode, a fault event triggers a contact closure through an RTU and operation of the switch is initiated remotely at the discretion of utility personnel. The CVD utilizes current and voltage inputs provided by separate line post sensors, instrument transformers or similar devices.

The CVD monitors current and potential status on up to three phases. A fault event occurs when the current of any one phase exceeds a user specified threshold (amplitude and number of cycles) followed by a loss of potential for a specified length of time. The board is easily field configured for the desired fault threshold parameters. Field configuration requires no programming for the standard functionality. With factory modification, the CVD can be used for more complex automatic schemes requiring timing and sequential coordination between multiple switches and breakers.

### Standard Features

The CVD comes complete with LED status indication lights for presence of potential, phase over-current, switch operation to open or close, CVD active and failure mode. Plug-in style connectors are provided for current inputs, open/close outputs, remote reset, remote failure indication and power.

Other standard features include a system reset button, open and close control relays and shunts, a nine pin connector, a null modem cable and a setup disk for communication with Windows<sup>®</sup> HyperTerminal.

The board design is solid state with integrated circuit technology, surface mount construction and micro processor control of all board functions. The board is designed for high reliability in a range of challenging conditions, including temperature ranges of +85°C to -40°C.

### Application

Frequently used for automatic switching to isolate faulted circuits in radial lines. Can also be used as part of a larger automatic fault isolation scheme with multiple switches in series. For questions about the application and use of the CVD for your automation project, please consult the factory for assistance.

### System Attributes & Benefits

- Rapid implementation - Provides immediate fault isolation and automatic sectionalizing capabilities without the technical and communication issues associated with SCADA integration
- Easily configurable - No programming required for standard functionality
- Economical - Lower cost to purchase, install and operate than SCADA solutions
- Fully compatible - Works with all brands of motor operators, disconnect switches, and current and voltage sensing devices
- Robust - Can be incorporated into more complex automation or SCADA applications as system requirements change
- 24/7 reliability - Controls your critical switching needs automatically without human intervention

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**Setup and Testing**

All setup parameters are entered and testing functions accessed through Windows® Hyper-Terminal. Laptop configuration for Hyper-Terminal communication is simplified through the use of the Setup Disk provided. Installation is accomplished by dragging the contents of the diskette to the Desktop.

Only four operating parameters must be specified to control each switch: (1) fault current amplitude, (2) fault current duration (number of cycles), (3) direction of switch operation (open or close), and (4) time delay in seconds for loss of potential. For security and safety, all setup parameters are stored in EEPROM to prevent data loss in the event of power failure.

After operating parameters have been entered, testing can be done through Hyper-Terminal to confirm that the resulting switch operation is what was intended.



Null Modem Cable