



Three Phase Numerical Distance Protection Relay

Protection Elements for Comprehensive Numerical Transmission Line Protection Relay;

(A) Impedance Function:

- Three Phase Distance Protection with one or three pole tripping
- Four Independent Groups
- Five Independent Zones of Protection
- Permissive Over reach Trip Transfer (Z1ext.)
- Independent Quadrilateral characteristics for Phase to Phase and Phase to Ground Faults
- Power swing Detection/Tripping
- Load Encroachment
- Non directional under impedance Zone for fault detection
- Settable Switch On to faults and Auto Recloser
- VT Fuse Fail
- Circuit Breaker failure(50BF)
- Disturbance Recorder
- 16 Red, Green LED for Indications
- Relay healthy indication (Green)

Note: Due to our policy to upgrade our products constantly, we reserve the right to supply products which may vary slightly from that indicated above.

(B) Backup Over current Function: Directional / Non-directional

- Phase Over current element (Three stages)
- Ground Over current element (Three stages)

(C) Under voltage/Over voltage Function:

- Three phase Under voltage element (Two stages)
- Three phase Over voltage element (Two stages)

(D) Auto Recloser:

(E) Trip Circuit supervision:

Relay Design Features:

- ✓ Minimum operating time of 1.5 Cycles (30msec).
- ✓ Large 20x4 LCD display for Parameter and setting display.
- ✓ In built Real Time Clock with non-volatile memory for time stamping.
- ✓ Display of various counters
- ✓ Disturbance Recorder - Up to 3sec of actual waveform of current & voltage along with logical and physical status are captured & saved in built-in memory with date time stamping, for analyzing fault condition & fault location.
- ✓ Fully communicable with IEC standard open protocol. **60870-5-103**.
- ✓ Separate Communication Port for SCADA (RS485) as well as Local testing (RS232C).
- ✓ Online display of CB status and other digital and logical status.
- ✓ Continuous monitoring of module's internal hardware and alarm generation in case of failure of any critical components.
- ✓ 10 Programmable Digital Output contacts.
- ✓ 8 Optically isolated digital status input for monitoring of status and avoid use of external relay logic.
- ✓ 2 dedicated status input for Trip Circuit Monitoring.
- ✓ 100 nos. of event memory, event such CB close, Trip, digital status change, relay pkp etc. All events are with date and time stamped up to 1ms.
- ✓ Display of Over load value and Load Impedance primary and Secondary value.
- ✓ 10 nos. of Fault data stored with keypad interface and time stamping.
- ✓ Display of Voltage, current, PF, frequency, Active, Reactive and Apparent Power in terms of primary and secondary value.

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