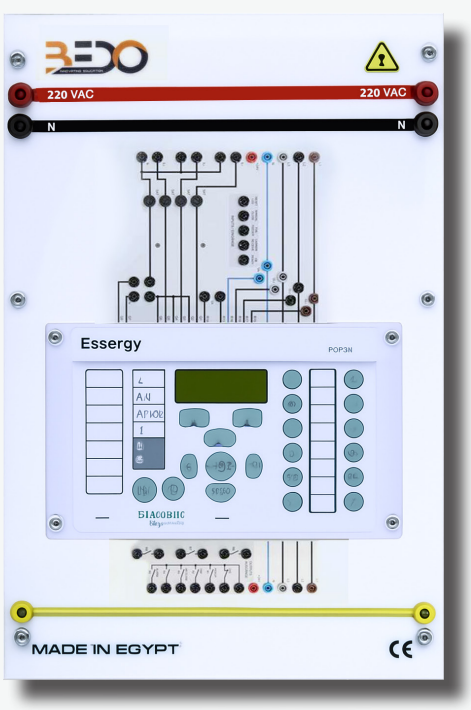
SG106

Feeder Distance Protection Relay

Overview

This numerical relay module offers protection for over headlines and cables, or combinations of overhead lines and cables. They feature full scheme distance protection with selective single-phase and three phase tripping and auto-reclosing with synchronizing and synchro-check, power swing detection and a wide range of scheme communication logics. The relay offers five zone distance protection against phase to phase and phase to ground faults, hence, protecting transmission lines in impedance or solidly grounded networks.



Specifications

Distance protection (ANSI:21)

- 5 zone full-scheme high-speed line distance protection (ANSI: 21)
- Quadrilateral or mho characteristic, or both (ANSI: 21D)
- Out-of-step protection (ANSI: 78)
- Power swing detection and blocking (ANSI: 68)

Current

- Instantaneous phase (ANSI: 50P)
- Residual over-current protection (ANSI: 50N)
- Four-step non-directional/directional phase overcurrent protection
- with definite and inverse time characteristics (ANSI: 51 & 67)
- Negative sequence directional overcurrent protection (ANSI: 46)
- Directional residual over-current protection (ANSI: 67N)
- Sensitive directional ground fault protection (ANSI: 67G)
- Broken conductor (ANSI: 46BC)

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» Thermal overload protection (ANSI: 26)
» Breaker failure protection (ANSI: 50BF)

- **Frequency functions**

» Over-frequency protection (ANSI: 81O)
» Under-frequency protection (ANSI: 81U)

- **Voltage**

» Two step undervoltage protection (ANSI: 27)
» Two step overvoltage protection (ANSI: 59)
» Two step residual overvoltage protection (ANSI: 59N)
» Loss of voltage check (ANSI: 27)

- **Secondary system supervision**

» Fuse failure supervision (ANSI: 60)

Control Features:

» Auto-reclosing (ANSI: 79)
» Synchronism and energizing check (ANSI: 25)
» Interlocking (ANSI: 3)

Metering Features:

» Energy metering function for energy statistics
» Pulse counting support for energy metering
» Load profile record
» Three-phase current measurement
» Three-phase voltage measurement
» Three-phase active power
» Three-phase reactive power
» Three-phase apparent power

Scope of Delivery

- Feeder Distance Protection Relay (SG106)
- Hard copy user manual

Options

- Digital content (BI01)

Required for Operation

- Machine & Drive Lab Supply Unit (ML100)
- Smart Grid HV Transformers & Transmission Line Training System (SG101)

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