

NUMERICAL LINE DIFFERENTIAL RELAY GRL150

TOSHIBA

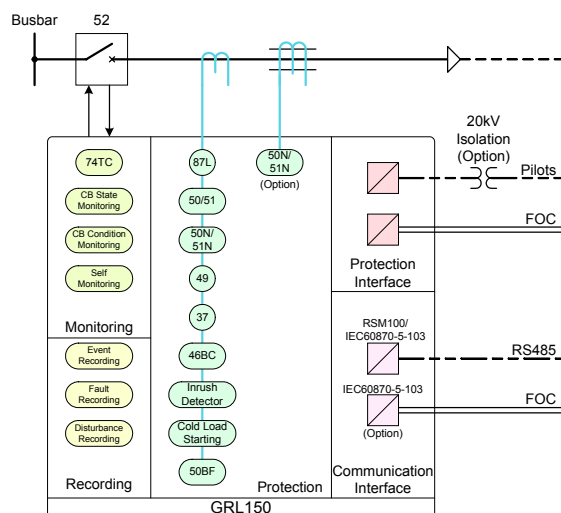
...announces the launch of GRL150, a fully numerical phase-segregated line differential protection for use with short overhead lines or cable circuits. Communication with the remote terminal is either by pilot wire or direct fibre optic link.

A major advantage of GRL150 is that it can be applied as a direct replacement for traditional pilot wire relays, operating over existing installed pilot cables, without the need for external summation transformers or telecommunication modems. GRL150 can be connected to new or existing pilot connections up to 8km in length, either directly via in-built 5kV isolation, or using optional external 20kV isolating transformers.



Alternatively, GRL150 can be applied over direct fibre optic communication for circuits up to 20km in length.

For enhanced security of the differential protection, GRL150 provides an integrated overcurrent guard scheme, magnetising inrush detection and communication channel monitoring. There are also a comprehensive range of back-up protection functions, as well as standard GR-series features such as metering, data recording and communications for remote setting and data retrieval.



Features of GRL150 are summarised as follows:

Protection Functions

- Applicable to two-end feeders with fibre optic or pilot wire communication
- Phase-segregated differential protection
- Integrated overcurrent guard scheme
- Direct intertripping
- Programmable control logic function
- Communication channel monitoring
- Built-in 5kV and optional 20kV isolation transformer for pilot wire communication
- Four stage overcurrent protection for phase and earth faults with IDMTL or DTL.
- Four stage sensitive earth fault protection with IDMTL or DTL (option)
- Inrush current detector for blocking differential and/or overcurrent trip at energisation
- Programmable reset characteristics.
- Undercurrent protection with DTL.
- Thermal overload protection.
- Broken conductor detection.
- Circuit breaker fail protection.
- Cold load pick-up feature.

Metering and recording functions

- Metering
 - Local and remote power system currents
 - Differential currents
- Recording
 - Event record
 - Fault record
 - Disturbance record
- Calendar and Time
 - IRIG-B port for external clock

Menu-driven human interfaces

- Liquid Crystal Display (LCD) display with operation keys
 - Relay setting and data display
- Personal computer (PC) interface
 - Relay setting
 - Recorded data display
 - Waveform analysis

Automatic supervision

- Automatic self-monitoring
- CT supervision.
- Protection signalling channel monitoring
- Circuit breaker condition monitoring.
- Trip circuit supervision.