PSA10

OVERCURRENT AND EARTH FAULT RELAY

Supplied with TecQuipment's Protection and Relay Test Set (PSL50) to enable investigations into protection and monitoring of transformers, transmission lines and distribution schemes

- Modern industrial overcurrent and earth fault relay presented in an educational format
- Supplied with TecQuipment's Protection and Relay Test Set (PSL50) and as an optional ancillary to other selected power systems products
- Held in robust enclosure with carrying handle
- Enables wide variety of tests and investigations
- Connections via safety sockets
- Demonstrates the latest relay technology

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TECQUIPMENT

PSA10

OVERCURRENT AND EARTH FAULT RELAY

DESCRIPTION

An entry-level three-phase and earth fault overcurrent relay presented in an educational format. Supplied with TecQuipment's Protection and Relay Test Set (PSL50), the relay enables investigations into protection and monitoring of transformers, transmission lines and distribution schemes. The relay is housed in a robust enclosure with carrying handle. The module mounts on the desk area of the Protection and Relay Test Set, and connects to the test set using a multi-core cable and safety leads.

This relay is also an optional ancillary for selected products in TecQuipment's Power Systems range.

The relay module is based on the Micom P122 industrial relay. The lecturer or student sets up different fault circuits on the Protection and Relay Test Set. They then use the keypad and display on the relay module to program it to the settings needed for the tests. They can also use the relay support software (supplied with the Protection and Relay Test Set) and a suitable computer (computer not included) to program the relay module. The relay module is then connected to the fault circuits so tests can be performed.

Most tests are performed using single relays. However, there are enough connections on the Protection and Relay Test Set to test two relay modules at the same time.

The main functions of the Overcurrent and Earth Fault Relay include:

- Three-phase earth and overcurrent: three independent stages. The first stage selectable from any of 12 IDMT curves; the remaining stages having a direct time characteristic (ANSI 50/51 and ANSI 50N/51N).
- High impedance restricted earth fault (ANSI 64N)
- Thermal overload protection (ANSI 49)
- Undercurrent (ANSI 37)
- Negative-phase sequence overcurrent: two independent stages (ANSI 46)
- Broken conductor detection (ANSI 46BC)
- Selectable blocking
- Trend, fault and disturbance records
- Circuit monitoring

Connection to the experimental circuit is via current transformers with ratio to suit the inputs of the relay. This provides an effective demonstration of the effect of current and voltage transformer ratio, connection and rating on protective relays.

STANDARD FEATURES

- Supplied with comprehensive user guide
- Five-year warranty
- Manufactured in accordance with the latest European Union directives

LEARNING OUTCOMES

Investigations into the performance and characteristics of an industrial overcurrent and earth fault relay.

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory environment

STORAGE TEMPERATURE RANGE:

–25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +40°C

OPERATING RELATIVE HUMIDITY RANGE:

30% to 95% (non-condensing)

SPECIFICATION

DIMENSIONS:

- 300 mm x 550 mm x 278 mm
- Packed 0.16 m^3

WEIGHT:

- Net 10 kg
- Packed 30 kg

CURRENT:

1 A (a.c.)

FREQUENCY:

50 or 60 Hz

ACCURACY:

±5%

OPERATING TIME:

Typically 10 ms to 25 ms