

Protection

Objective:

To train protection staff how to place and coordinate protection relays in PowerFactory. Some basic protection coordination theory is presented and users learn the difference between and importance of different methods of short circuit calculations.

Pre-requisites:

- **MUST have attended the Basic Version 14 course**
- Basic protection coordination theory and experience.
- Own Laptop (**NOTE:** laptops can be supplied at an additional charge)

Software used: *PowerFactory* Version 14

No of participants: Minimum: 6; Maximum: 12.

Cost: see www.digsilent.co.za for latest course fees, which includes a set of course notes, lunch and refreshments.

PowerFactory licences, pens and notepads are also supplied.

Please note the booking clauses on the registration form.

Duration: 2 days

Topics to be covered:

Relay modelling general aspects

- Structure of relay models
- Relay library
- Over-current-time relays (including fuses and LV circuit breakers)
- Creating CTs and VTs

Application of over-current protection relays

- Using standard protection elements from the library
- Modelling new fuse types
- Time over-current plots.
- Motor protection.
- Transformer protection.
- Cable protection.
- Defining of coordination paths.

Application of distance protection relays

- Application of distance protection relays.
- Path definition.
- R-X diagrams
- Time distance diagrams.

Exercises

- Tutorial: over-current protection.
- Tutorial: distance protection.