An integrated system for fixed and portable testing of circuit breakers, grounding and load switches

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Continuous documentation for the life of the breaker

- Design and development
- Factory testing
- Commissioning
- On-going maintenance
Integrated Breaker Analysis

- Keeping track of all relevant breaker parameters allows reaction to parameter changes before breaker fails.
- Unique database which allows comparison of all actual and historical test results.
- Export of definable order/breaker parameters and test results.
- Database queries with SQL statements give detailed information about all installed breakers.
User connections

- 3x2 solid state switches with 1 µsec accuracy
- 3x2 relay switches, user definable (e.g. for controlling of AC relays)
- 3x4 tri-state inputs for measurement of main and resistor contact states
- 3x6 editable, auxiliary inputs
- Analog inputs for motor and coil currents and voltage
- All inputs (binary and analog) opto-isolated 4 kV peak/2.5 kV RMS
Breaker Measurements

**Mechanical:**
- Timing of main, resistor and auxiliary contacts
- Travel measurements of main contacts
- Travel and pressure measurements of other active elements

**Electrical:**
- Coil currents and resistance
- Internal resistance of main contacts (Micro-Ohm test)
- Motor currents
Software Modules

- Configuration and handling of test orders
- Central breaker database
  - manufacturer-specific parameters and test list
- Test monitor
  - platform for manual breaker tests and sequence tests
  - local and global (database) storage of parameters and results
  - display and comparison of actual/historic test results
  - report generation
- Editor for generation of automatic test cycles
- Fully graphical report editor
- Access rights
Factory Testing

- PC with Windows® software controls system and provides user interface
- Signal recording and conditioning of up to 64 analog and 256 binary inputs
- Integration of several workstations in a network with centralized storage of all relevant parameters and results
- Software controlled PSU’s for motor and coil supplies
- Definable automatic test sequences
On-site Breaker Tests

- Highly integrated design in a modular and compact 4U 19” case
- Up to 16 analog / 64 binary inputs for complete 3-phase tests
- Industrial PC as MMI
- Optional integrated bubble jet printer for printing of graph results and reports
- LC Display 320x240 pixel
- 6 programmable Hot Keys for control of all necessary functions
- Optional outputs for control of external PSU's
- Control output for optional Dynamic Micro-Ohm equipment