KONČAR

Končar Electronics and Informatics, Inc

Secondary Equipment

RFC - Application

KONPRO generation presents RFC as part of a group of devices that offer a complete range of protective functions required for reliable protection of capacitor banks.

Basic concept

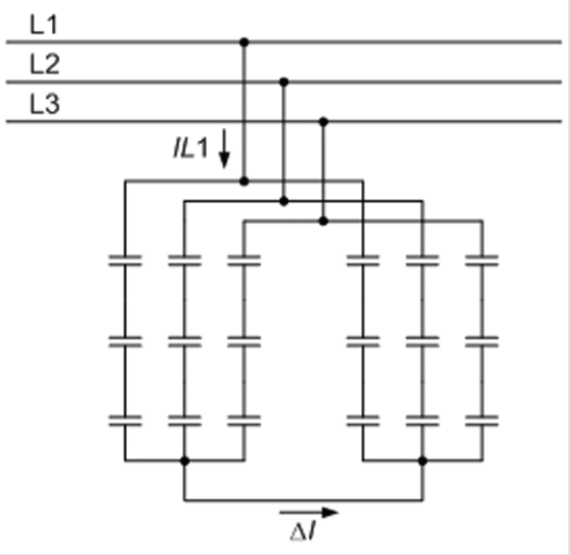
In addition to basic protective functions RFC contains functions designed for reliable protection of capacitor banks.

Undercurrent protection of capacitor banks used for tripping capacitor banks in case of prolonged low voltage on the battery which manifests by a small current.

Reconnection inhibit function for capacitor banks detects disconnection from the mains and protects the charged battery from the reenergization to the network. Protection uses TRMS current value to detect whether the battery is connected to the network.

Protection of capacitor banks using the current unbalance is used for protection of capacitor banks connected in a double star.

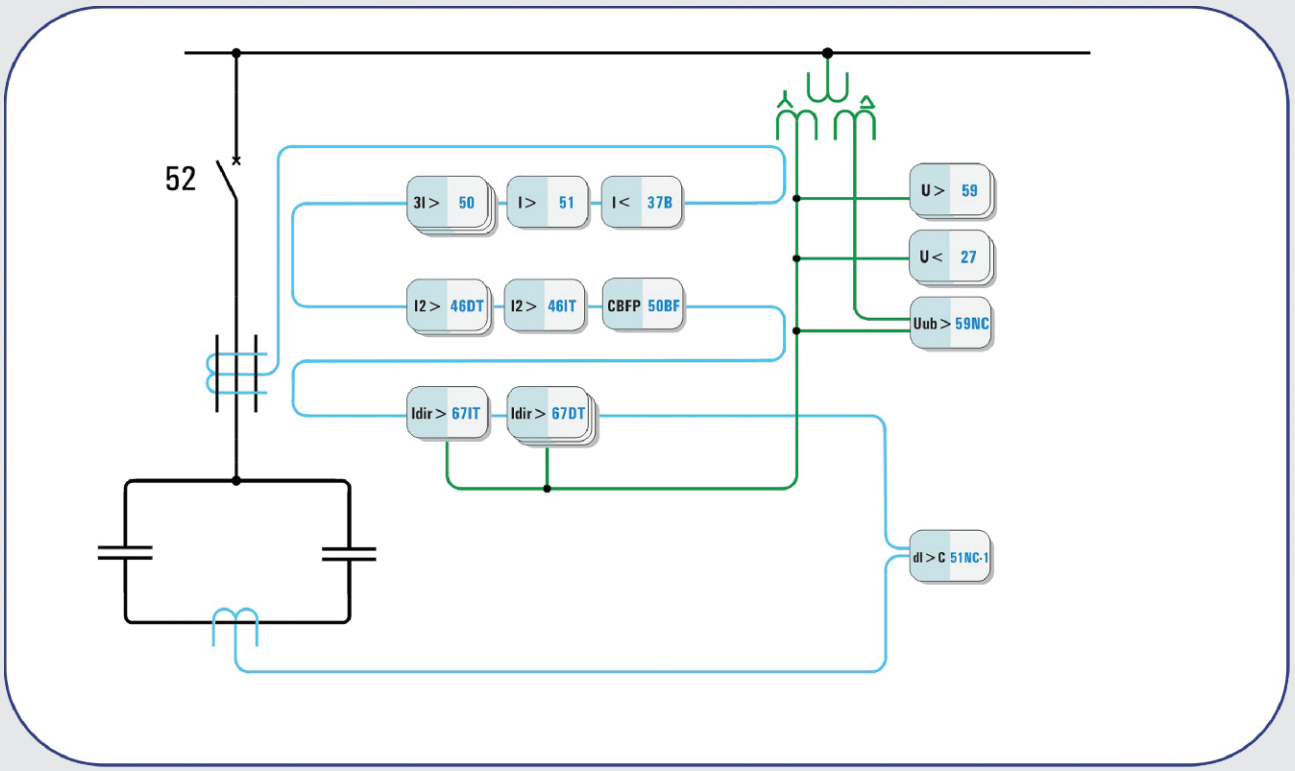
Protection of capacitor banks by imbalances of zero sequence voltage s used for the protection of capacitor banks connected to non-grounded star.



Graphic view of the apparatus state in the field (single-pole diagram) is fully configurable by the user. Since apparatus change states during operation, for each apparatus there are four tags to indicate the following possible states: closed, open, intermediate, undefined

The monitoring function of breaker wear , which is usually performed as an additional function in protection relays, provides a good enough insight into the MV switch, and as such allows the rationalization of maintenance costs.

Protection block scheme



Protection, measurement and control functions

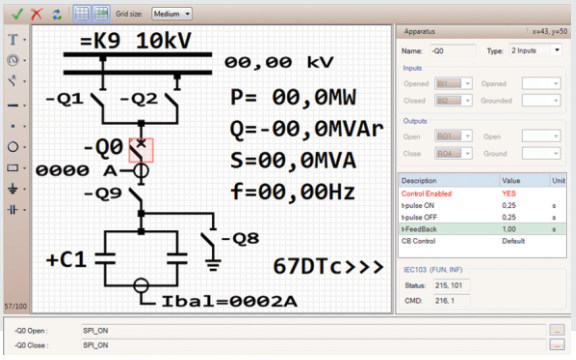
- overcurrent protection (50, 51)
- directional overcurrent protection (67-DT, 67-IT)
- overvoltage protection (59)
- undervoltage protection (27)
- negative sequence protection (46-DT, 46-IT)
- undercurrent protection (37B)
- reconnection inhibit function (RecInh)
- unbalance current capacitator bank protection (51NC)
- unbalance voltage capacitator bank protection (59NC)
- circuit breaker failure protection (50BF)
- trip circuit supervision function TCS1, TCS2 (74TC)
- time synchronization
- event recorder and trip logger
- disturbance recorder
- management control (local/remote)
- local and remote control of apparatus
- binary inputs and outputs (basic version)
  - 10 binary inputs (5 predefined) – up to 42
  - 8 relay outputs (3 predefined) – up to 40
- local communication
  - front interface – COM1 – USB port
  - protocol IEC 60807-5-103
- remote communication
  - system/service interface/protocol
  - COM0 – IEC 60870-5-103 or IEC 61850
  - COM2 – IEC 60870-5-103 or IEC 61850

Other properties

- 16 LED for signalization (8 predefined)
- measurement IA, IB, IC, Ibal, UA, UB, UC, Ubal,
- direct and inverse components I1, I2, U1, U2,
- power P, Q, S, cosφ,
- energy measurement in four quadrants Wp+, Wp-, Wq+, Wq-
- test mode (simulation of executive functions during testing)
- self supervision and diagnostics
- field rotation selection (left or right)

Software support

- for parametrization and testing use KONPRO RMS (KON-215-60-10.3-E)“



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