

Principle of operation

The FRID module conducts the topological analysis of the network in real time, taking into account every state change. The analysis results the detection of lines cut-off. The type of the damage is identified on the bases signals from installed short-circuit indicators and ATS signals as well. When an active short-circuit indicator is found the damage is identified as a short circuit automatically.

FDIR module uses the topology data saved as CIM model. The network status vector is constantly updated from the telemechanic server. The control is carried out by the telemechanic server. The FDIR module uses a TCP / IP-based communication interface.

The results of FDIR calculations are:

- short-circuit zone identification
- a switching sequence

The calculated sequence is to isolate the short-circuit and to restore the power supply where possible. The network where restoration is not possible, in order to update the calculated switching sequence, is monitored in terms of switch status changes, voltage lack and recovery, Installed and removed groundings, started and completed works.

The FDIR verifies the safety of the operation, step-by-step during the whole switching process, taking into account localization of the grounding, the field crew or short-circuits zones.

The steps is saved in the log.

Other modules before control or switching sequence use information about short-circuit zones from the FDIR server, in order to avoid the restoration of power supply on the damaged line.

Interacting with the SO-52v21- AUT controller

The SO 52v21-AUT is designed to cooperate with MV air and indoor load break switches. The controller integrates functions of measurement, control, telemechanic, short-circuit signalizaion, sectionizer and failure recorder.

The signaling function is detection of ground and intra-phase short-circuits.

The sectionalizing function is detection of ground and intra-phase short-circuits combined with the possibility of opening supervised load switch by means of the controller during the selected non-voltage break in autoreclosing.

Along with the information on the switch status, activation of short-circuit signalization, network topology model, defined switch control channels, historical data on the switch states, control interlocking data - the functions of the SO-52v21- AUT controller constitute a set for proper and precise operation of FDIR module.

Security

The SYNDIS system does have a set of tools to provide the security of switch operation performed by the FDIR module. The algorithm has a range of automatic and manual security options, so that it won't let wrong controls be executed.

There is the option to immediately interrupt the user's switching operations as an additional security.

The module also has so-called storm switch, which allows temporary exemption of the calculations for unstable network areas, e.g. because of the storm.