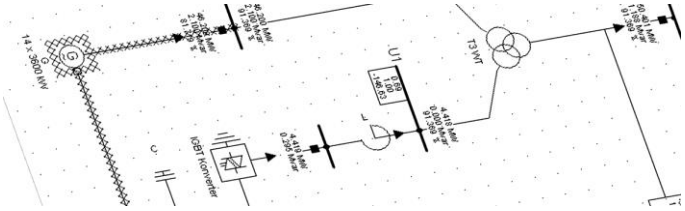

DIgSILENT Technical Documentation

VAMP 255
PowerFactory
Relay model description

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Table of Contents

1 Model general description

The VAMP 255 relay model consists of:

- Three phase overcurrent elements 50/51("I>" (with inverse characteristics), "I>>" and "I>>>" (time defined) block).
- Four phase directional overcurrent elements 67("Iphi>" (with inverse characteristics), "Iphi>>", "Iphi>>>" and "Iphi>>>>" (time defined) block).
- One unbalance protection element 46("I2>" (with inverse characteristics) block).
- One Incorrect phase sequence 47 element ("I2>>" block).
- One unbalance / broken connector protection element ("I2/I1>" block).
- Two ground overcurrent elements 50N/51N using input 4("Io>" (with inverse characteristics) block, "Io>>" (time defined) block).
- Two ground overcurrent elements 50N/51N using input 5 ("I2o>" and "I2o>>" (time defined) block).
- Two directional ground overcurrent elements 67N ("Iophi>" and "Iophi>>" (time defined) block, "Earth dir (Io-Uo)" block implementing the directional logic).
- One undercurrent element 37 ("I<" block).
- One overload element 49 ("T>" block).
- Three phase overvoltage elements 59 ("U>", "U>>", "U>>>" block)
- Three phase undervoltage elements 27 ("U<", "U<<", "U<<<" block)
- Two residual voltage elements 59 N ("Uo>" and "Uo>>" block).
- Two over frequency / under frequency protection stages ("f><" , "f>><<" block)
- Two under frequency stages ("f<" and "f<<" block)
- One rate of change of frequency df/dt protection ("df/dt" block)
- Reclosing feature 79("Reclosing" block). Please note that the reclosing logic can be set in the "Logic" tab page of the "Reclosing" block.
- Second harmonic blocking ("If2>" block). The blocking logic is implemented inside the "Output logic" block in the "Logic" tab page. The current implementation is blocking the "I>", "I>>", "I>>>", "T>" and "I<" element.

2 Relay not supported features

The following features are not supported:

- Stall protection
- Frequent start protection
- Circuit breaker failure protection
- Arc fault protection
- Capacitor bank unbalance
- Current transformer supervision
- Synchrocheck function
- Earth fault location algorithm

3 Reference material

The model implementation has been based on the information available in the "VAMP 255/245/230 Feeder terminals Operation and configuration instructions Technical description VM255.EN006" document.