



DigSILENT Technical Documentation

VAMP 257

PowerFactory

Relay model description



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Published by
DgSILENT GmbH, Germany

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doc.TechRef, Build 519 12 Januar 2021



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1 Model general description

The VAMP 257 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).
- ◆ Two under power/reverse power elements ("P<", "P<<", "Prev" and "Prev 2" block; please note that to activate a reverse power threshold the "Prev" or the "Prev 2" block must be put "on service" and the relevant "P<" or "P<<" block must be put "out of service" . The threshold of the "Prev" and of the "Prev 2" block is a positive value)
- ◆ 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 257 Feeder and motor manager relay Operation and configuration instructions Technical description VM257.EN002" document.