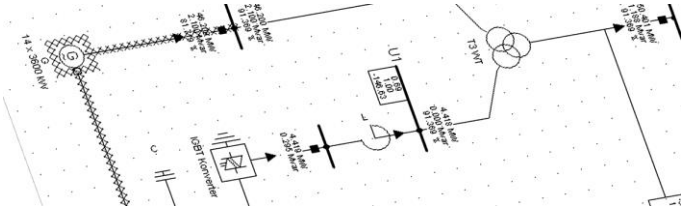

DIgSILENT Technical Documentation

VAMP 140
PowerFactory
V001 Relay model description

DIgSILENT GmbH
Heinrich-Hertz-Strasse 9
D-72810 Gomaringen
Tel.: +49 7072 9168 - 0
Fax: +49 7072 9168- 88
http://www.digsilent.de
e-mail: mail@digsilent.de

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1 Model general description

The VAMP 140 relay is a phase, negative sequence and residual ground overcurrent non directional protection relay. The VAMP 140 PowerFactory relay model is implementing all the main protective functions available in the relay; it consists of the measurement and acquisition units, the protective elements and the output logic.

1.1 Measurement and acquisition

1.1.1 Available Units

The primary current is measured by two current transformers ("Ct-3p" and "Ct-3I0" block).

Three measurement units ("MeasPhase", "MeasSeq" (negative sequence measurement) and "MeasEarth" block) are fed by these CTs.

1.1.2 Data Input

Please note that the nominal current value MUST be entered in all the measurement units.

1.2 Protective elements

1.2.1 Available Units

- One phase current inverse time overcurrent elements ("I>" block)
- Two phase current definite time overcurrent elements ("I>>" and "I>>>" block)
- One residual/ground current inverse time overcurrent element ("I0>" block)
- Two residual/ground current define time overcurrent element ("I0>>" and "I0>>>" block)
- One negative sequence current definite time overcurrent element ("I2>" block)
- One thermal image element ("T>" block)

1.2.2 Functionality

The PF model contains all the protective elements available in the relay except the (optional in the relay) arc detection feature.

The inverse time overcurrent elements support the following trip characteristics:

- Normal Inverse (IEC 60255-3)
- Very Inverse (IEC 60255-3)
- Extremely Inverse (IEC 60255-3)
- Long Time Inverse (IEC 60255-3)

1.3 Output logic

1.3.1 Available Units

The output logic is implemented by the "Logic" block.

1.3.2 Functionality

The "Logic" block is operating the breaker. Please disable the "Logic" block to disable the relay model ability to open the power circuit.

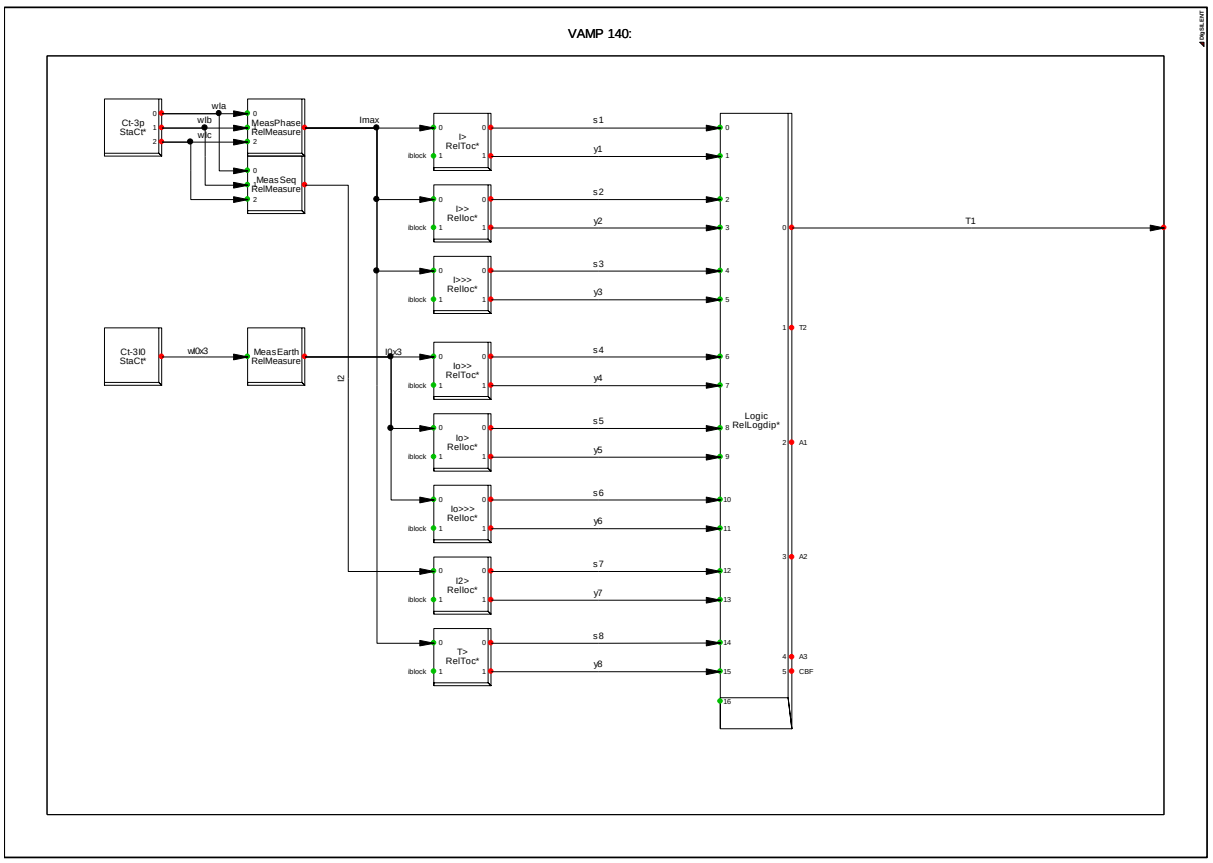
The signal operating the breaker is "Trip"; the "A1" output signal is available as well.

2 Relay not supported features

The following relay features are not supported by the model:

- Arc protection
- Input signals

3 Model scheme



4 References

The model implementation has been based on the information available in the "VAMP 140 Overcurrent- and earth fault relay Operation and Configuration Instructions Technical Description VM140.EN002" document.