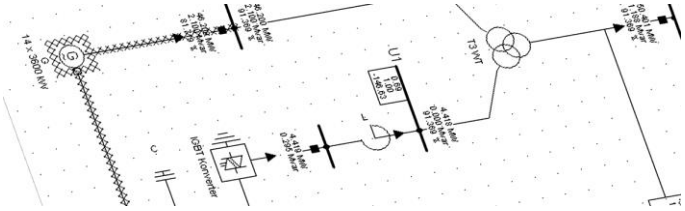

DIgSILENT Technical Documentation

Areva P114S
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 Areva P114S relay is a simple self powered relay. The Areva P114S PowerFactory relay model is implementing all the protective functions available in the relay; it consists of the measurement and acquisition units, the protective elements and the output logic.

Five subversion of the Areva P114S PowerFactory relay model are available:

- P114S-0192CT1792 (for the 15-56 A Is range)
- P114S-0384CT1793 (for the 32-112 A Is range)
- P114S-0768CT1794 (for the 64-224 A Is range)
- P114S-1536CT1795 (for the 128-448 A Is range)
- P114S-3072CT1796 (for the 256-896 A Is range)

1.1 Measurement and acquisition

1.1.1 Available Units

The primary currents are measured by a current transformers ("Ct-3p" blocks)

A measurement unit ("Measure Ph" block) is fed by this CT.

1.1.2 Functionality

The input signals are sampled in the relay model at 20 samples/cycle; a DFT filter operating over a cycle calculates the current values used by the protective elements.

1.1.3 Data Input

Please note that the nominal current (relay "Is" setting) value MUST be entered in the measurement unit. The CT must have transformer ratio equal to 1/1.

1.2 Protective elements

1.2.1 Available Units

- One 3 phase inverse time overcurrent element ("I>" block)
- One 3 phase definite time overcurrent element ("I>>" block)
- One ground current definite time overcurrent element ("I0>" block)

1.2.2 Functionality

The PF model contains all the protective elements available in the relay.

The inverse time overcurrent elements support the following trip characteristics:

- Definite time
- IEC "Extremely inverse"
- IEC "Very inverse"
- IEC "Normal inverse"
- IEC "Long time inverse"
- "RI Inverse time"
- "HV-Fuse"
- "Full Range-Fuse"

1.3 Output logic

1.3.1 Available Units

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

1.3.2 Functionality

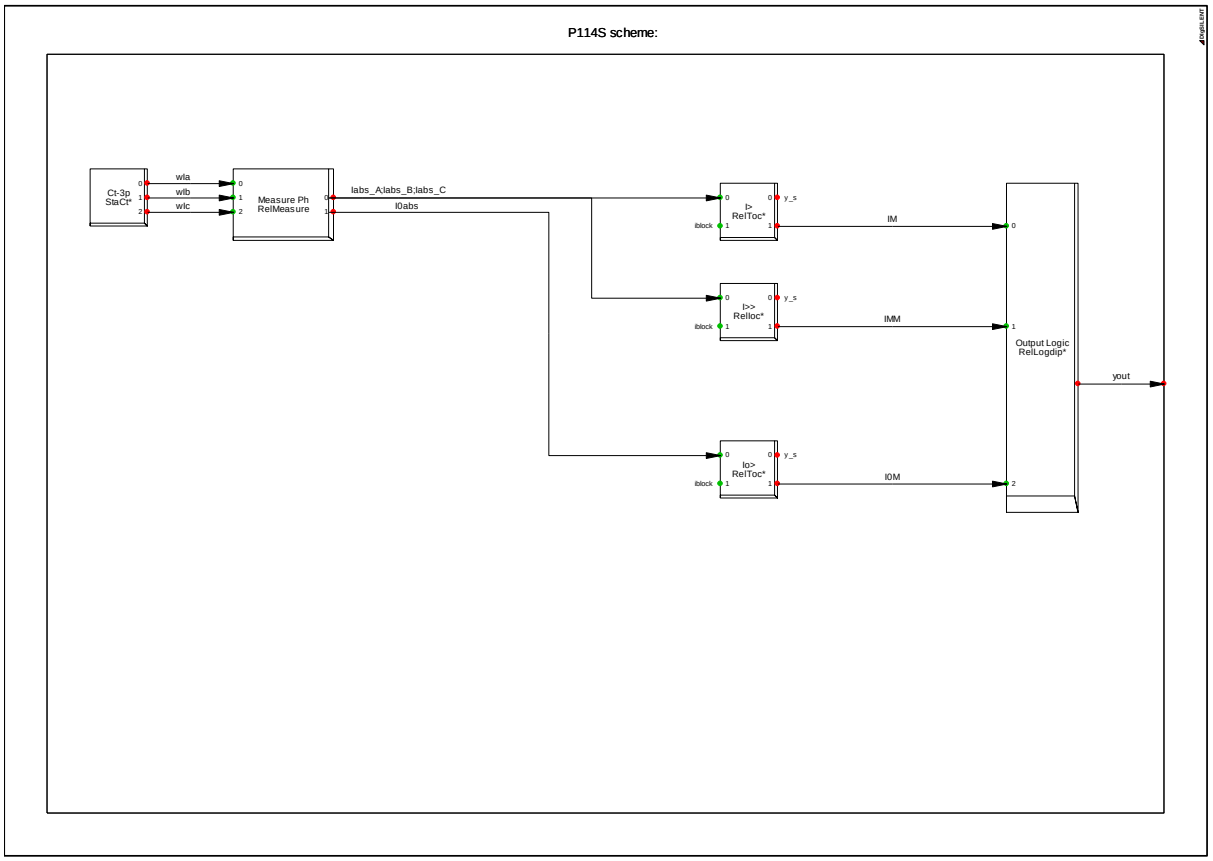
This block is operating the breaker. Please disable the "Output logic" block to disable the relay model ability to open the power circuit. The signal operating the breaker is "yout".

2 Relay not supported features

The following features are not supported:

- I>> backup protection
- Remote trip input

3 Model scheme



4 References

The model implementation has been based on the information available in the "MICOM P114S CT Powered Overcurrent Relay Software Version: 1A Hardware Suffix: A Technical manual P114S/EN M/A 11" document.