PowerFactory 2021

Technical Reference

DIgSILENT F87REF Restricted Earth Fault Generic Rel

PF2021

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https://www.digsilent.de

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Contents

1   F87REF Restricted Earth Fault

1.1   Intent

To simulate the restricted earth fault differential feature.

1.2   Functionality

The *F87REF Restricted Earth Fault* generic relay model simulates a single phase current magnitude differential element with differential threshold double bias restrain characteristic. An unrestrained threshold is also available. The differential trip can be set with a configurable time delay.

1.3   Inputs

- One 3 phase CT ("Phase Ct" block, *StaCt* class).

- One single phase CT ("Neutral Ct" block, *StaCt* class).

1.4   Available Units

Measurement

- One 3phase measurement element ("Phase Measurement" block, *RMS Calculation* enabled, *Filter* FFT [*RelMeasure* class]).

- One neutral measurement element ("Neutral Measurement" block, *RMS Calculation* enabled, *Filter* FFT [*RelMeasure* class]).

- One single phase measurement element ("Differential RMS Meas" block, *RMS Calculation* enabled, *Filter* disabled [*RelMeasure* class]).

Protective elements

- One 3 phase CT adapters ("Phase Adapter" block, [emphRelCtadapt class).

- One single phase CT adapter ("Neutral Adapter" block, [emphRelCtadapt class).

- A differential element with *Type* set equal to *Restricted earth fault* ("Differential" block, [*RelBiasidiff* class]).

Output logic

- One relay trip element ("Output logic" block, *RelLogdip* class).

1.5 Outputs

- *yout* associated by default to the differential element trip (any phase).

- *y_s* associated by default to the differential element trip (any phase). Its behavior is identical to the *yout* signal and has been added to guarantee compatibility with the *F79 Recloser* generic relay.

The output logic can be configured in the "Logic" tab page of the "Output Logic" block.