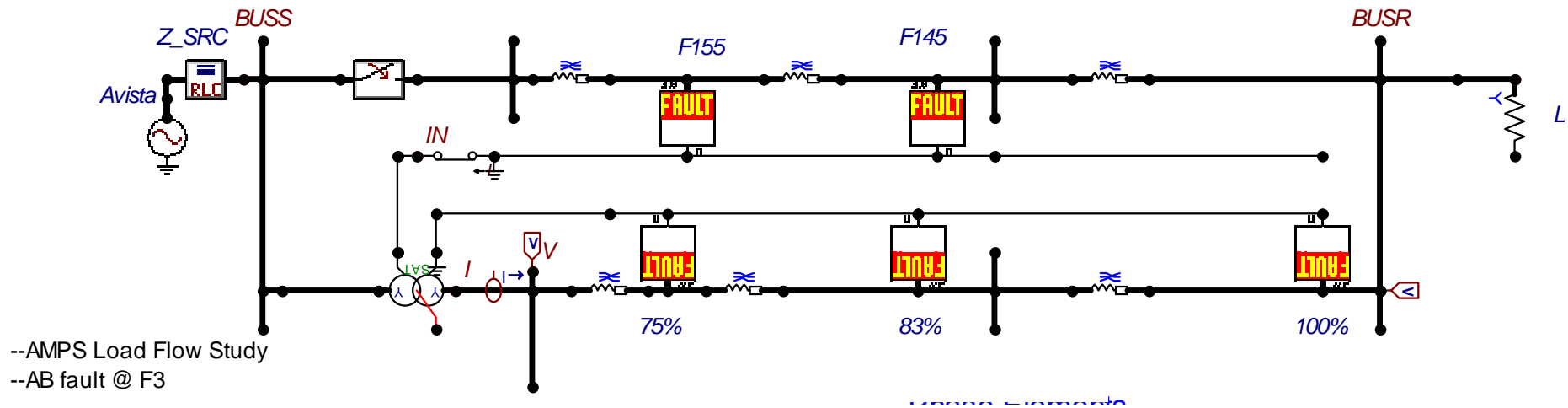


Relay Example Cases in Transients Programs

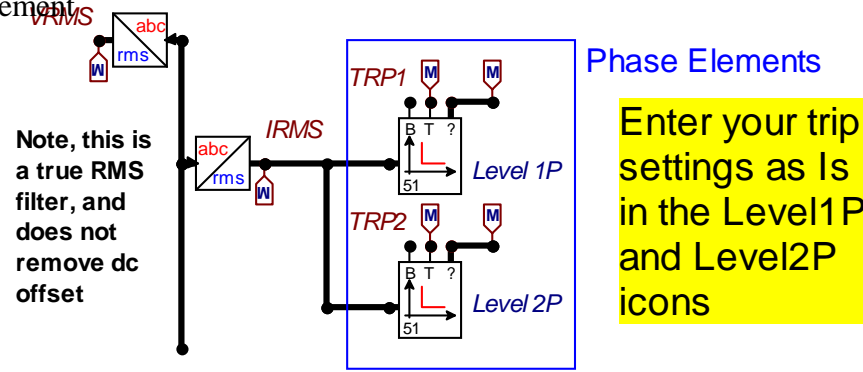
ATPdraw:

Power system model



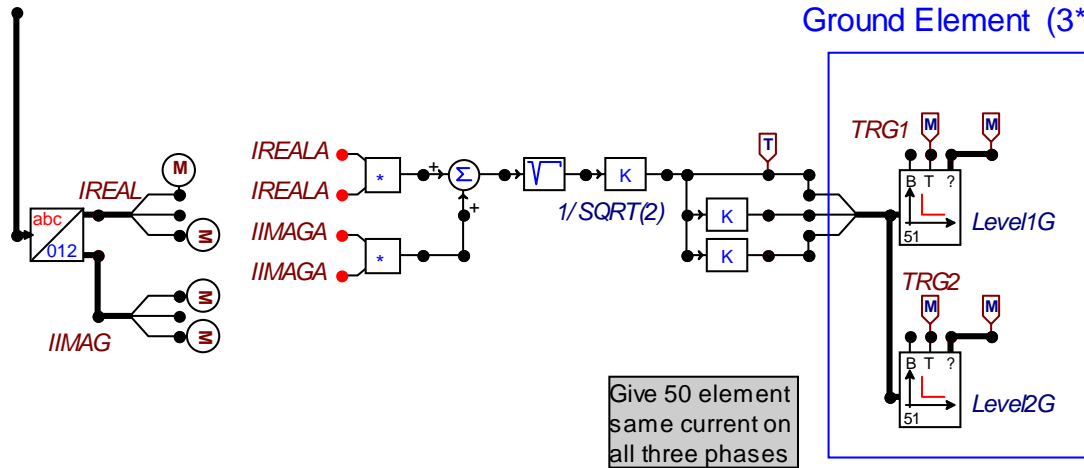
--AMPS Load Flow Study
--AB fault @ F3

- Phase elements, plus voltage measurement



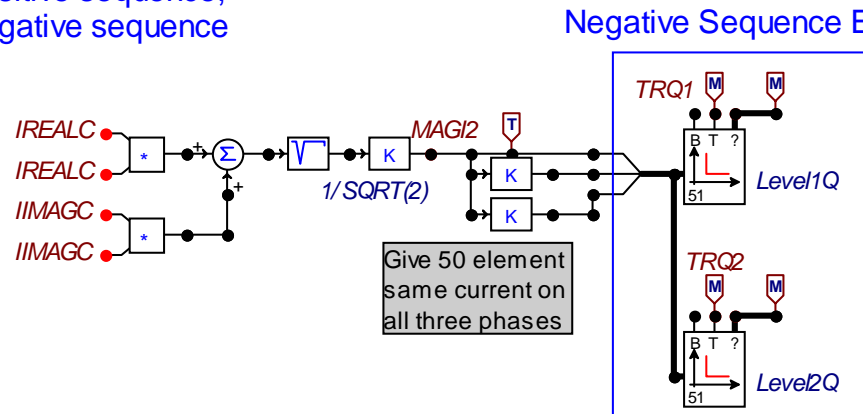
- Negative Sequence and Ground Elements

Note, this uses sine filters so does not fully remove decaying dc offset



Enter your trip settings as Is in the Level1G and Level2G icons

A = zero sequence,
B = positive sequence,
C = negative sequence



Enter your trip settings as Is in the Level1Q and Level2Q icons

Component: LINESY_3 [X]

Attributes

DATA	UNIT	VALUE
Ro	Ohm/m	2.25
Lo	Ohm/m	22.5
R+	Ohm/m	0.75
L+	Ohm/m	7.5

NODE	PHASE	NAME
IN1	ABC	V
OUT1	ABC	X0020

Copy Paste Reset Order: 0 Label:

Comment:

Lines
Length [m] Hide

Edit definitions OK Cancel Help

MODEL: W1RELAY51 [X]

Attributes

DATA	UNIT	VALUE
Is	A	5
td	s	0
DownSampl	1..n	10
t_init	s	0.05
Idx	1..n	3

NODE	PHASE	NAME
irms	ABC	IRMS
Block	1	XX0003
Trip	1	TRP1
Zone	ABC	ZONP1

Copy Paste Reset Order: 0 Label: Level 1P

Comment:

Models Library

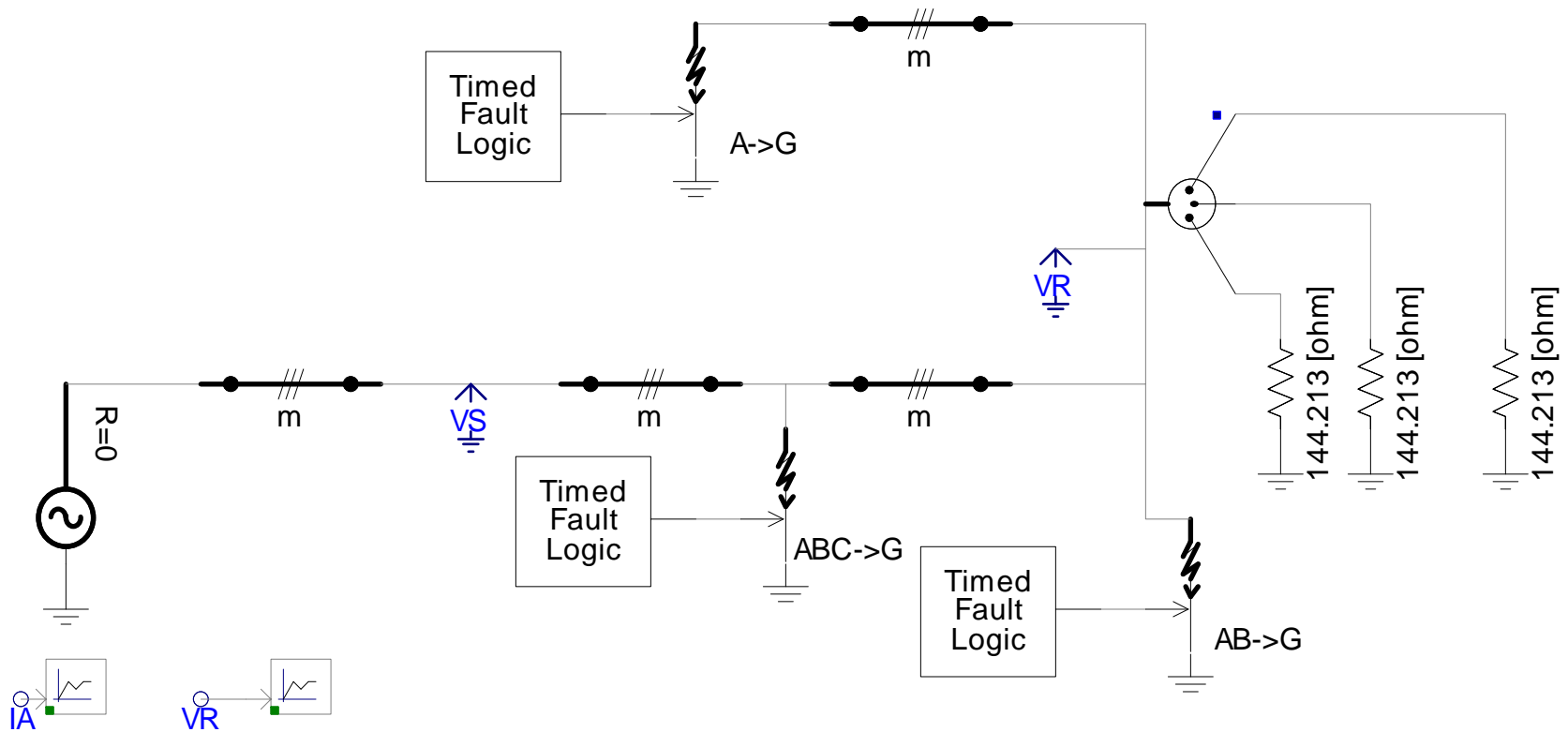
Model: W1RELAY51 Edit Use As: W1RELAYE View Copy

Hide
 Protect

Edit definitions OK Cancel Help

PSCAD/EMTDC

Change the sequence impedance values to change the fault location. Values are presently set for fault location $0.5+j5.0$ ohm (middle of the line). You need to change to 45% and 55%



[coupled_3lines] mutually coupled 3 wires

Sequence Components

Positive Sequence Resistance	0.8 [ohm]
Positive Sequence Inductance	0.021221 [H]
Zero Sequence Resistance	2.4 [ohm]
Zero Sequence Inductance	0.063662 [H]

OK Cancel Help...

[tfaultn] Timed Fault Logic

Configuration

Time to Apply Fault	0.2 [s]
Duration of Fault	0.05 [s]

OK Cancel Help...

[fft] On-Line Frequency Scanner

Configuration

Type	1 Phase
Number of Harmonics	n=7
Base frequency	60.0 [Hz]
Magnitude Output:	RMS
Phase Output Units:	Radians
Phase Output reference	Cosine wave
Anti-aliasing filter?	yes
Frequency tracking?	no
Frequency Tracking Enable Signal	1

OK Cancel Help...

[over_current] Over current detection block

Configuration

Over Current Limit	0.004
Preprocessing ?	None
Smoothing Time Constant	0.02 [s]
Frequency	60.0 [Hz]
Delay Time	0.0 [s]

OK Cancel Help...

