



VEBKO ONLINE HELP

“Distance” Room Settings, Part 2

Category	tester
Section	AMT Distance Module
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1 Imported Content

In "Time" section, first the injection time before the fault is entered in "Prefault Time". In cases where the "PTs" draw inrush current, by checking "Ramp in Prefault" option, it is possible to increase the waveform of the voltage signal in prefault in form of a ramp to prevent stop applying voltage because of the drawn inrush current. In "Max Fault Time", the maximum fault injection time is specified in form of "Abs" or "Rel" which itself consists of three parts. Note that if in a "Shot" point, the "Max Fault Time" is shorter than maximum allowed "Trip" time, the result of the evaluation will be wrong. If you are using the "Max Fault Time (Abs)" field, you need to enter a time in seconds for the maximum fault injection time (For all points); but to increase the test speed, you can use "Max Fault Time (Rel)" option.

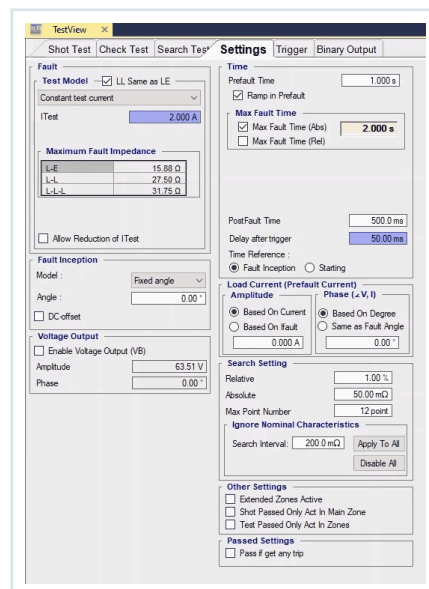


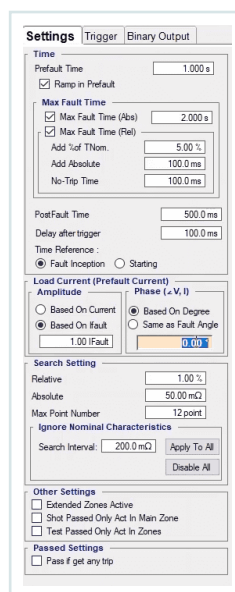
Figure 1

By checking this option three other options appear. By entering a number in "Add %of Tnom", the fault injection time in every point equals the test point nominal time plus percentage of the nominal time entered in this field. This means that if the test point nominal time is 10 seconds and 5 percent is entered in this field, the maximum fault injection time equals 105 percent of the test nominal time which is 10.5 seconds. But in "Add Absolute" field, the fault injection time is entered as the sum of test point nominal trip time plus the time entered in this field. If time is entered in these 3 fields, the software picks the highest value. For points that are in "No Trip" zone, it is possible to enter a separate time in "No-Trip Time" field.



Figure 2

In "Post Fault Time", the injection time after the fault is entered. "Delay after Trigger", is used to enter the key trigger time. By right-clicking on the related field and selecting "Go to Linked Value", you can see that it is linked to "CB Trip Time" and if necessary, you can replace it with your desired value by selecting "Remove Link". In "Time Reference", by selecting "Fault Inception", the "Trip" time is calculated from when the fault is injected. But by selecting "Starting", the "Trip" is calculated from when the "Pick-up" contact is received from the relay. In "Load Current (Prefault Current)" section you can specify the settings for the phase and current related to "Prefault". In "Amplitude" section, by selecting "Based on Current" radio button, the "Prefault" current is entered in terms of Ampere which is the same for all test points. But by selecting "Based on Ifault", the "Prefault" current is entered according to the fault current which is different for every "Shot" point. In "Phase" section, by selecting "Based on Degree" radio button, the current angle in "Prefault" is entered which is the same for all "Shot" point but by selecting "Same as Fault Angle" radio button, the "Prefault current angle" is the same as the fault current angle which is different for every "Shot" point.



The screenshot shows the 'Settings' tab with the following sections:

- Time**
 - Prefault Time: 1.000 s
 - ☒ Ramp in Prefault
 - Max Fault Time**
 - ☒ Max Fault Time (Abs): 2.000 s
 - ☒ Max Fault Time (Rel)
 - Add % of TNom: 5.00 %
 - Add Absolute: 100.0 ms
 - No-Trip Time: 100.0 ms
- PostFault Time**: 500.0 ms
- Delay after trigger**: 100.0 ms
- Time Reference**:
 - ☒ Fault Inception
 - ☐ Starting
- Load Current (Prefault Current)**
 - Amplitude**
 - ☐ Based On Current
 - ☒ Based On Ifault: 1.00 Ifault
 - Phase (± V, I)**
 - ☒ Based On Degree
 - ☐ Same as Fault Angle: 0.00
- Search Setting**
 - Relative: 1.00 %
 - Absolute: 50.00 mΩ
 - Max Point Number: 12 point
 - Ignore Nominal Characteristics**
 - Search Interval: 200.0 mΩ
 - Apply To All
 - Disable All
- Other Settings**
 - ☐ Extended Zones Active
 - ☐ Shot Passed Only Act In Main Zone
 - ☐ Test Passed Only Act In Zones
- Passed Settings**
 - ☐ Pass if get any trip

Figure 3

In "Search Setting" section, the settings related to "Search Test" are specified. As mentioned before, a "Search Test" arrives at a conclusion only if one of the three conditions of this section is met. The first condition is "Relative" which means that if the difference between the test point value and the previous point is less than the percentage specified in this field, this very point is the result of the test. The second condition is "Absolute" which means that if the difference between the test point and the previous point is less than the value specified in this field, this very point is the result of the test. The third condition is "Max point number" which means that the test is to be performed as many times as the number of points entered in this field at max and the last point is the result of the test. But if for any reason, the nominal characteristic determined for the relay is not available, you can use "Ignore Nominal Characteristic" section. By doing so, the software ignores the existing characteristic.

Then, based on the step entered in "Search Interval", it adds shots on the "Search" line. For example, a line is drawn in "Search Test" section. Then, "200mΩ" is entered as the value for "Search Interval" and "Apply to all" is selected. You can see that some points with the same step are added on the "Search" line. By running the test, you can see that the test starts from the lowest point and once one of the three mentioned conditions is met, the test comes to result. Also, if necessary, you can ignore this option by selecting "Disable all".

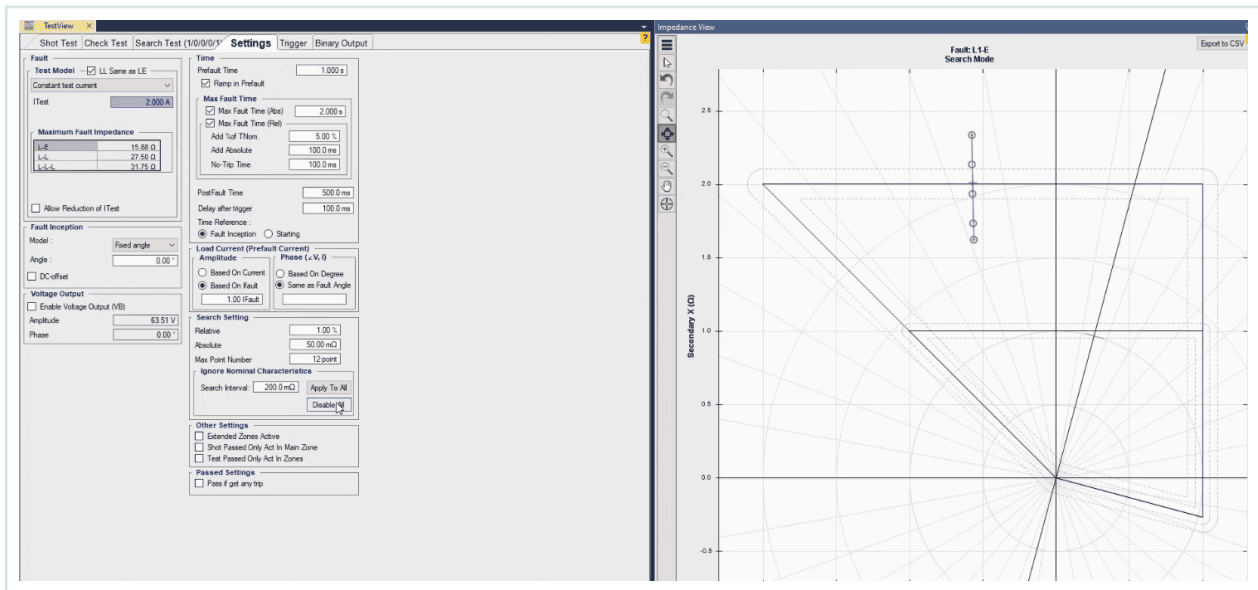


Figure 4

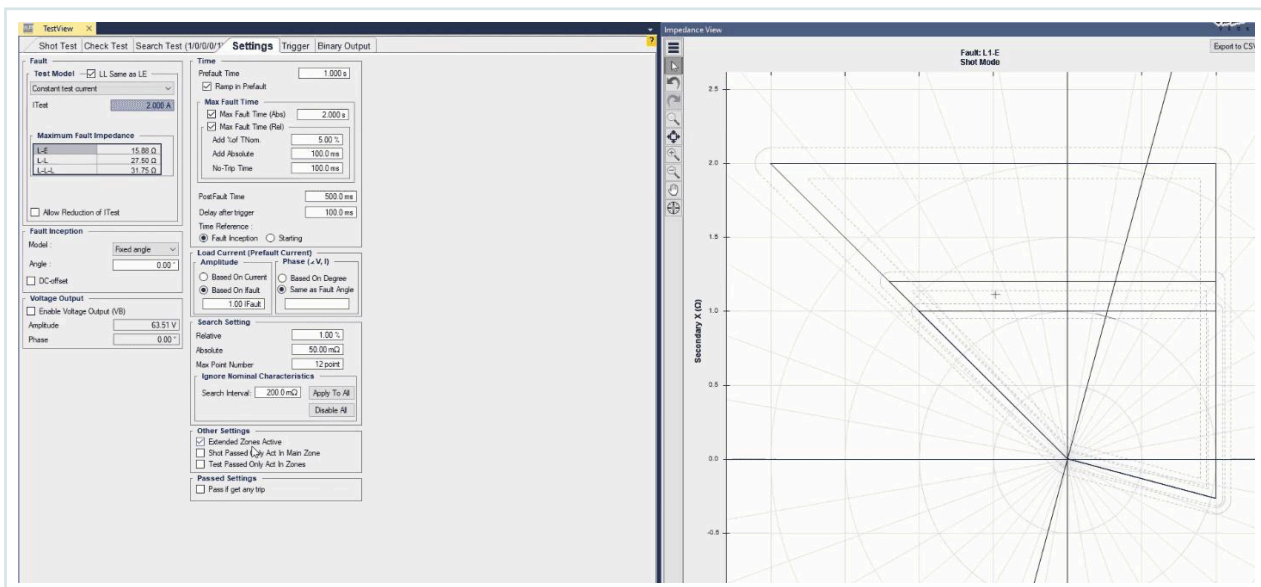


Figure 5

By selecting "Shot Passed Only Act in Main Zone" option, only if the performance time of the relay in the shot point is located in the allowed range of the main zone the test "Passes". For example, if this option is checked and a shot is added to tolerances of zone 2, the test "Passes" if the relay operates

only in the time of zone 2 which is "95" ms to "150" ms; otherwise, with any other performances by the relay, the test "Fails". But if this option is not checked, the allowed performance time of the relay is "95ms" to "No Trip" and if the relay does not give a trip in this point, the test "Passes". "Test Passed Only Act in Zones" option is used for "Search", "Check" and "Shot" tests. By checking this option, the test "Passes" when the relay performance in the tolerances, is only the time of one of the two zones. For example, if this option is checked and a shot is added to zone 1 and zone 2 tolerance area, if the relay operates in "28.5" to "80" ms or "95" to "150" ms the test "Passes"; otherwise the test "Fails". This can also be done for "Check" and "Search" tests.

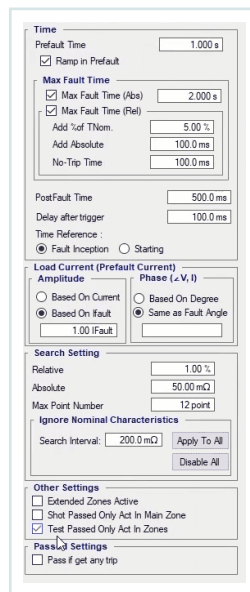


Figure 6

In "Trigger" tab you can specify the desired binary to receive the "Pickup" and "Trip" signals of the relay as well as stopping the current injection. The settings and explanation of this section are exactly the same as mentioned for "Trigger" room and "Sequencer". In "Binary Output" tab, if it is necessary for the relay to view the conditions of the key, it is possible to take any needed voltage to the "Binary Input" through "Binary Output" of the device by voltages of "B" or "Aux Dc" groups. This tab has three modes of "Prefault", "Fault" and "Post Fault" and it is possible to manage each of them separately.

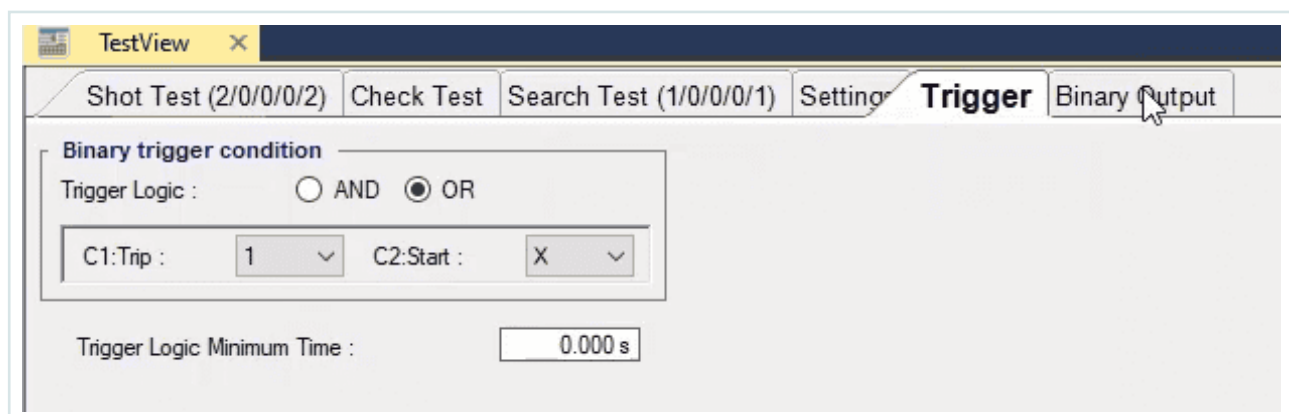
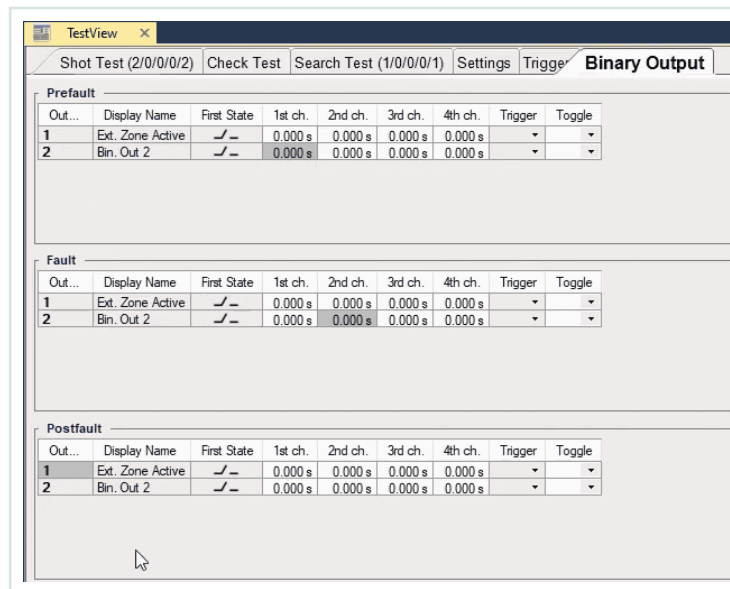


Figure 7



TestView

Shot Test (2/0/0/2) | Check Test | Search Test (1/0/0/1) | Settings | Trigger | **Binary Output**

Prefault

Out...	Display Name	First State	1st ch.	2nd ch.	3rd ch.	4th ch.	Trigger	Toggle
1	Ext. Zone Active	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼
2	Bin. Out 2	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼

Fault

Out...	Display Name	First State	1st ch.	2nd ch.	3rd ch.	4th ch.	Trigger	Toggle
1	Ext. Zone Active	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼
2	Bin. Out 2	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼

Postfault

Out...	Display Name	First State	1st ch.	2nd ch.	3rd ch.	4th ch.	Trigger	Toggle
1	Ext. Zone Active	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼
2	Bin. Out 2	✓	0.000 s	0.000 s	0.000 s	0.000 s	▼	▼

Figure 8

[jg1]Distance_room_settings_Part2