

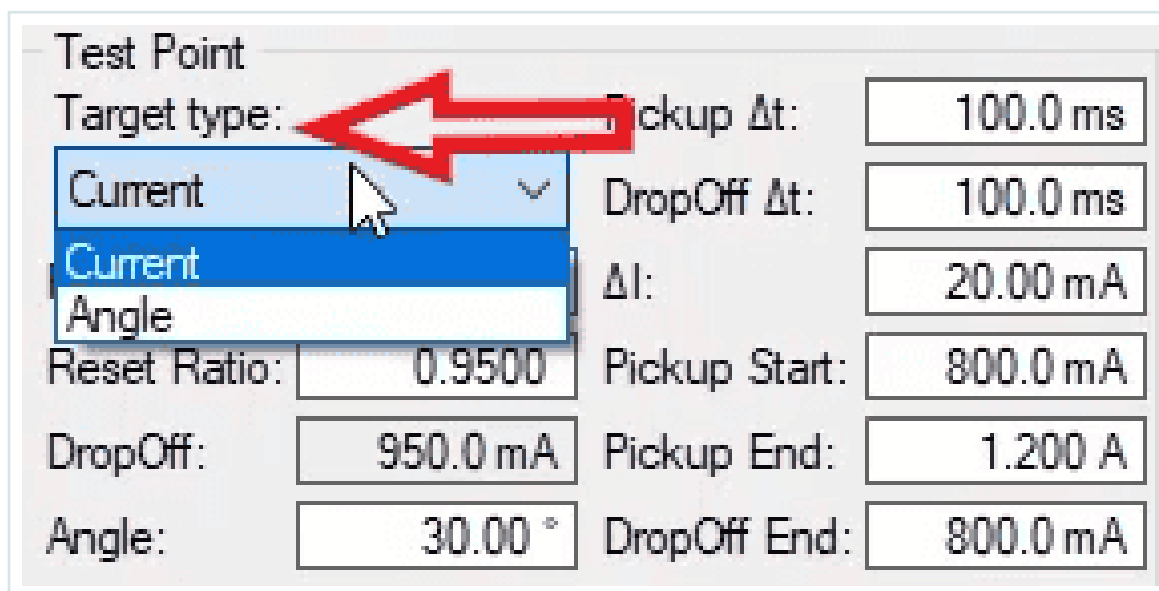


VEBKO ONLINE HELP

“Pick Up-Drop Off” Window

Category	tester
Section	AMT Overcurrent Module
Language	English
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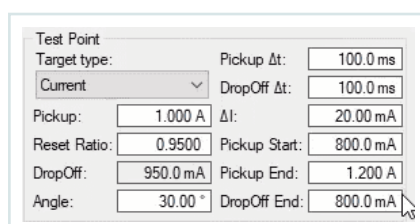
"Pick Up-Drop Off" test of the relay is performed In this tab. In "Test Point" section, the settings related to test points is adjusted. If you wish to perform a "Pick Up-Drop Off" test in a "Non-directional" relay, you need to select "Current" from "Target type" section and for Angular "Pickup-Drop-off" test select "Angle". At first, "Current" is selected for "Non-directional" test.



Test Point	
Target type:	Pickup Δt: 100.0 ms
Current	DropOff Δt: 100.0 ms
Current	ΔI: 20.00 mA
Angle	Pickup Start: 800.0 mA
Reset Ratio: 0.9500	Pickup End: 1.200 A
DropOff: 950.0 mA	DropOff End: 800.0 mA
Angle: 30.00 °	

Figure 1

In "Pickup" field, the "Pickup" current of the relay is specified. This means that ideally, the relay must "Pickup" at this current and here we enter 1amp for this field. In "Reset Ratio" field, the ratio of "Drop" current to "Pickup" current is specified which here is set at 0.95. Note that by specifying a value for "Reset Ratio", the software calculates the "Drop" current value and displays it in "Drop Off" field. In "Angle" field, the angle of "Pickup" current is specified which is not useful for "Non-directional" relays and depending on the test type, the user can set it at their desired value. Now, since in "Pick Up-Drop Off" tests the software uses increasing or decreasing ramps, the time interval between increasing and decreasing ramps must be entered in "Pickup Δt" and "Drop Off Δt" respectively. By default, these values are set at 100 millisecond. In "ΔI" field, the values of each "Step" in each time ramp is specified. Here, this value is set at 20 milliamps. Then, in "Pickup Start" field, the ramp initial current value in test is specified. Here, this value is set at 800 milliamps. This means that the ramp begins at 800 milliamps and increases. Moreover, it is necessary to specify the final values of the ramp current as well. These values are entered in "Pickup End" and "Drop Off End" fields for "Pickup" and "Drop Off" respectively. For example, here, the final current values for "Pickup" and "Drop Off" are set at 1.2 amp and 800 milliamps respectively.



Test Point	
Target type:	Pickup Δt: 100.0 ms
Current	DropOff Δt: 100.0 ms
Pickup: 1.000 A	ΔI: 20.00 mA
Reset Ratio: 0.9500	Pickup Start: 800.0 mA
DropOff: 950.0 mA	Pickup End: 1.200 A
Angle: 30.00 °	DropOff End: 800.0 mA

Figure 2

Now, according to the values set in "Test Point" section, the software applies an increasing ramp from 800 milliamps to 1.2 amp of current with 20 milliamps ramps and 100 milliseconds time interval and then receives the "Pickup" signal. Then, it applies a decreasing ramp with 20 milliamps ramp and 100 milliseconds time interval until the relay "Drops". In "Fault Type" section, as mentioned before, it is possible to determine the fault type. Now, by using "Add" button, this test line is added to the characteristic curve of the relay on "Overcurrent Characteristic" window. Also, the related row is added to the table at the bottom of the "Pick Up-Drop Off" page. In "Detail" section, after the test is finished, the real "Pickup" current value of the relay and the relay "Drop Off" current value of the relay are displayed in "Pickup act" and "Drop Off act" fields respectively.



The screenshot shows the "Pick Up-Drop Off" window with the following sections:

- Test Point:**
 - Target type:
 - Pickup Δt :
 - DropOff Δt :
 - Pickup:
 - Reset Ratio:
 - DropOff:
 - Angle:
- Detail:**
 - PickUp act.:
 - DropOff act.:
 - State:
- Fault Type:**
 - ☒ L1-E
 - ☐ L2-E
 - ☐ L3-E
 - ☐ L1L2
 - ☐ L2L3
 - ☐ L3L1
 - ☐ L1L2L3
 - ☐ L1
 - ☐ L2
 - ☐ L3
 - ☐ I2
 - ☐ 3I0
- Buttons:**
 - Add
 - Insert
 - Remove
 - Add to ...
 - Remove All ...
 - Clear All Failed Tests
 - ☐ Pause before start

Figure 3

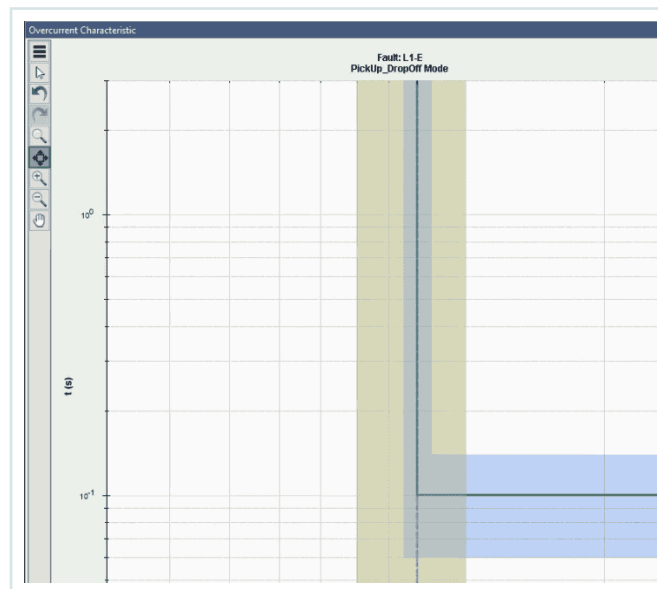


Figure 4

For each "Fault Type", this test is performed only in one point.

Immediately after receiving "Pickup" contact, the ramp starts decreasing from "Pickup-End" point. If you wish the ramp to start decreasing from the same point as the relay "Pickup" point, you need to check "Last state Amplitude" option.



Figure 5

For "Directional" tests, here the settings for a "Directional" relay is in a way that the "Direction" is "Forward" and "Maximum torque angle" and "Sector opening" are set at -60 and 180 degrees respectively. Then, open "Medium Detail View". In this window, the operation range of the relay is displayed in green and purple. You can see that this range is set between (-90+60) 30 degrees and (-60-90) -150 degrees. In "PickUp-DropOff Data" section, the test lines selected from the created test lines are displayed in the table at the left side. In the left sidebar of this window, there are some tools used for diagrams which have been explained previously.

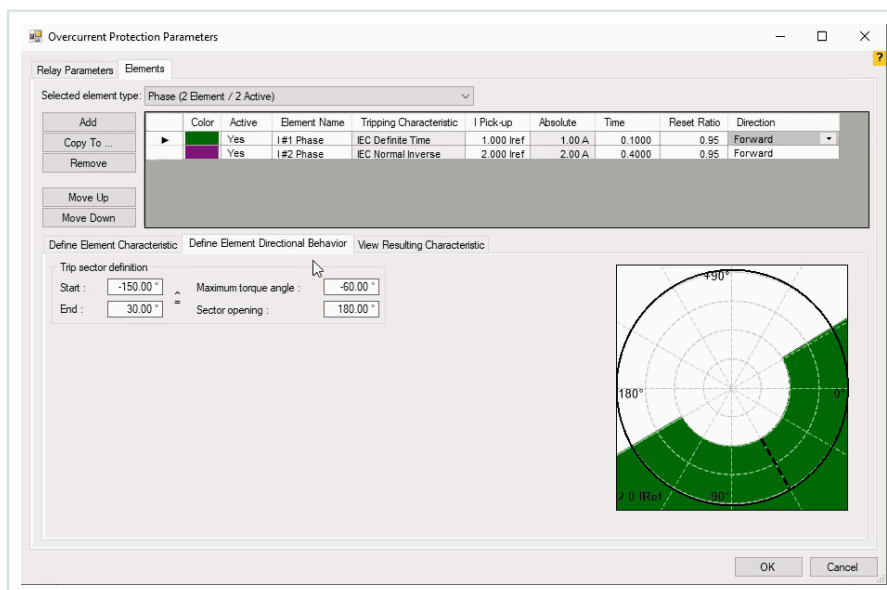


Figure 6

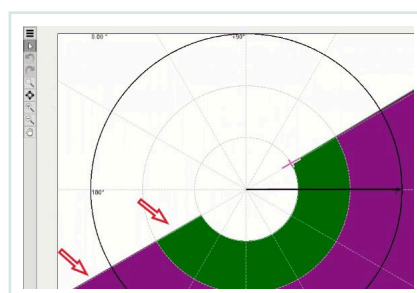


Figure 7

Now, "Angle" is selected from "Target type" and "States" of the "Ramp" created by the software are put on the angle. In this mode, the value of the current and the fault current angle are entered in "Current" and "Angle" fields respectively. Also, the amount of angular changes in each ramp, the amount of start angle value for ramp "State" and the final value of this angle are entered in "Pickup Start" and "Pickup End" fields respectively. In "Drop Off End" field, the final angle value for decreasing ramp "State" is specified.

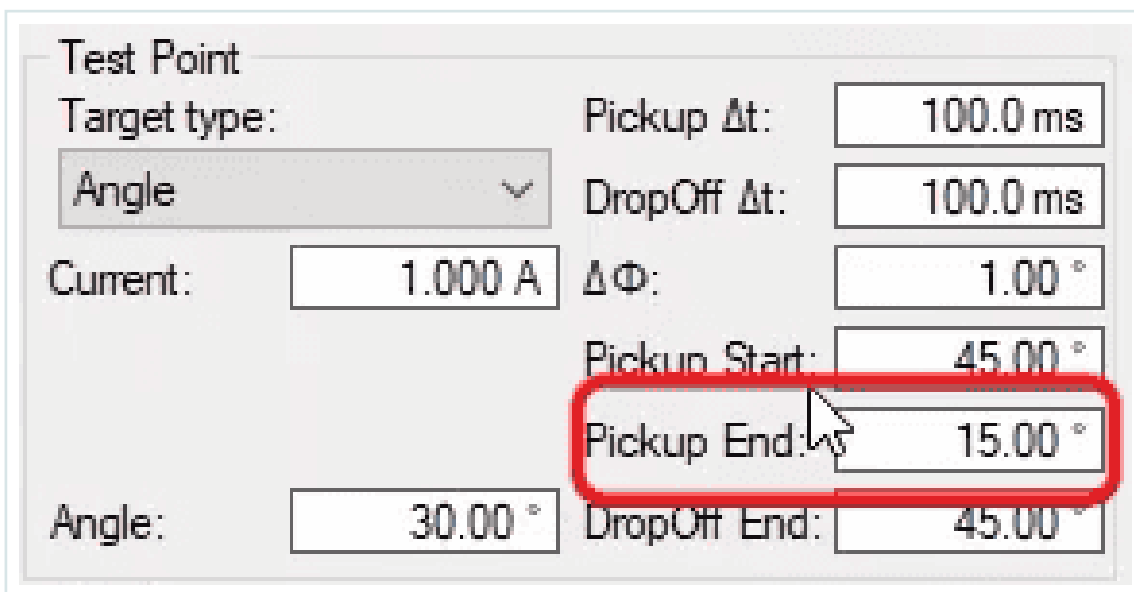
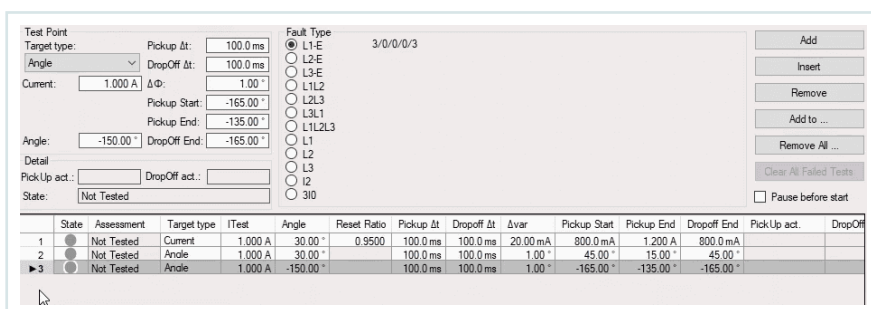


Figure 8

For example, here you should make two search lines in border points. The first search line is set with a 1 amp "Pickup" current and a 30 degree angle. You can see that the fields related to this test line are adjusted at the right side by the software. Note that these values can be specified by the user. Also, in graphic diagram of "Medium Detail View" window, the angular range of the intended test is turned pink. Now, we add this test line to "Pick Up-Drop off" test table. Now, to create the next test line, -150 is entered as the angle value in "Angle" field and this lined is also added to the test lines. You can see that by selecting any of the created test lines, its information is displayed in "PickUp-DropOff Data" window. Note that in performing this test, in "Pickup" current, you should perform the test once at the highest limit of the angle and once at the lowest limit of the angle.



State	Assessment	Target type	ITest	Angle	Reset Ratio	Pickup Δt	Dropoff Δt	Δvar	Pickup Start	Pickup End	Dropoff End	PickUp act.	DropOff
1	Not Tested	Current	1.000 A	30.00 °	0.9500	100.0 ms	100.0 ms	20.00 mA	800.0 mA	1.200 A	800.0 mA		
2	Not Tested	Angle	1.000 A	30.00 °		100.0 ms	100.0 ms	1.00 °	45.00 °	15.00 °	45.00 °		
3	Not Tested	Angle	1.000 A	-150.00 °		100.0 ms	100.0 ms	1.00 °	-165.00 °	-135.00 °	-165.00 °		



Figure 9

[jg1]PickUp_DropOff_window