



VEBKO ONLINE HELP

Running the Test

Category	tester
Section	AMT Sequencer Module
Language	English
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After designing the test in each room, run the test. Here, the "Pick up", "Drop off" test is designed for the three-phase state in the "overcurrent" relay. In this test, the "CT"s turns ratio is set to be 1/1000 and the "Pick up" current of the relay is set to be 2 A. In addition, binary inputs 1 and 2 of the device are activated to receive the "Trip" and "Pick up" signals of the relay. To perform the "Pick up" test, a "State" with the name of "Pick up" and as increasing "Ramp" type is designed, in such a way that the three-phased current increases from 800 mA to 3 A each 500 ms with the 50 mA steps in the stepwise state. To end the "Pick up" test, in the "Trigger" tab, the binary condition of "C2:Start", "0->1" is adjusted. The intended "State" for the "Drop off" test is designed as a decreasing "Ramp" type from 3 A to 800 mA in such a way that it decreases 50 mA each 500 ms in the stepwise state. In this "State", the condition for the test end is adjusted to be "C2:Start", "1->0" so if the relay "Drops" the test would end. Remember that in the "Detail View" window from the state related to the "Drop off" test, you can check the "Continue Last State Amplitude" so immediately after the first state ends the current amplitude of the second state would start from the previous value in the first state as "Ramp" type until the relay drops. By doing this, the test duration decreases.

I_{nom(secondary)} :

1.000 A

I_{primary} :

1.000 kA

Figure 1

☐	Binary-Input Target	Binary-Input Label
☒ C1	Trip	Trip
☐ C2	Start	Start

Figure 2

State Type

State Type: Step Ramp State Name: Pick up

Set Mode and Fault Type

Set Mode: General: Direct

☐ Simple mode (L1-L2-L3)

Step Values

Signal	Amplitude	Phase	Frequency
I L1: I L1	50.00 mA	0.00 °	0.000 Hz
I L2: I L2	50.00 mA	0.00 °	0.000 Hz
I L3: I L3	50.00 mA	0.00 °	0.000 Hz

Final Values

Signal	Amplitude	Phase	Frequency
I L1: I L1	3.000 A	0.00 °	50.00 Hz
I L2: I L2	3.000 A	-120.00 °	50.00 Hz
I L3: I L3	3.000 A	120.00 °	50.00 Hz

Step Ramp Setting

Step Time: 500.0 ms

☐ Enable Reset

Reset Time: 500.0 ms

Ramp Description(Errors)

Number Of Step Ramps: 45

Total Time: 22.50 s

No Error In Step Ramp

☐ Trigger ☐ Reset Value ☒

Offset Value

Signal	Amplitude
I L1: I L1	0.000 A

Start Value

☐ Con. in Freq Step

Signal	Amplitude	Phase	Frequency
I L1: I L1	800.0 mA	0.00 °	50.00 Hz
I L2: I L2	800.0 mA	-120.00 °	50.00 Hz
I L3: I L3	800.0 mA	120.00 °	50.00 Hz

Figure 3

State Type: ☐ Start Time Ref. From This State

State Name:

Step Ramp:

Set Mode and Fault Type

Set Mode:

Simple mode (L1-L2-L3) ☐

Step Values

Signal	Amplitude	Phase	Frequency
I L1: I L1	-50.00 mA	0.00 °	0.000 Hz
I L2: I L2	-50.00 mA	0.00 °	0.000 Hz
I L3: I L3	-50.00 mA	0.00 °	0.000 Hz

Final Values

Signal	Amplitude	Phase	Frequency
I L1: I L1	800.0 mA	0.00 °	50.00 Hz
I L2: I L2	800.0 mA	-120.00 °	50.00 Hz
I L3: I L3	800.0 mA	120.00 °	50.00 Hz

Step Ramp Setting

Step Time:

☐ Enable Reset

Reset Time:

Ramp Description(Errors)

Number Of Step Ramps: 45

Total Time: 22.50 s

No Error In Step Ramp

☐ Trigger ☐ Reset Value ☒

Offset Value

Signal	Amplitude
I L1: I L1	0.000

Figure 4

Other Setting

- ☐ Disable Error Other
- ☐ Disable Error Overvoltage of Binary
- ☒ Continue Last State Amplitude

Figure 5

For this test, in the "Measurement View" window, several assessments are designed for analyzing the actual values of "pick up" and "Drop". In the first row, the actual value of the "Pick up" current related to the first phase is evaluated. To do this, in the "Ramp State", the "S1: Pick up" is selected, the intended condition for assessment is "C2: Start 0->1", the intended signal is "I L1", and the parameter type for assessing this signal is selected in the "Signal Type" as "Amplitude". Now, because the "Pick up" current is 2 A, two is inserted in the "Nom" column that the relay should pick up this current in ideal condition. In addition, the "Dev+" and "Dev-" columns the 100 mA tolerances are selected for assessment. The assessment of phase two and three picks up current is performed in the same way in the second and third-row only with this difference that in the "Signal" column related to these two assessments the "I L2" and "I L 3" signals are selected.

Name	Ramp State	Condition	Signal	Signal Type	Nom.	Dev.-	Dev.+	Act.	Dev.	Assessment	T Act.	T Act. Final Step	User Comment
1 pickup 1	S1: Pick up	C2: Start 0->1	I L1: I L1	Amplitude	2.000 A	100.0 mA	100.0 mA						
2 pickup 2	S1: Pick up	C2: Start 0->1	I L2: I L2	Amplitude	2.000 A	100.0 mA	100.0 mA						
3 pickup 3	S1: Pick up	C2: Start 0->1	I L3: I L3	Amplitude	2.000 A	100.0 mA	100.0 mA						
4 drop out 1	S2: Drop off	C2: Start 1->0	I L1: I L1	Amplitude	1.900 A	50.00 mA	50.00 mA						
5 drop out 2	S2: Drop off	C2: Start 1->0	I L2: I L2	Amplitude	1.900 A	50.00 mA	50.00 mA						
6 drop out 3	S2: Drop off	C2: Start 1->0	I L3: I L3	Amplitude	1.900 A	50.00 mA	50.00 mA						

Figure 6

Also, in the fourth row, the actual "Drop" current of the phase one is assessed. For this reason, the "Ramp State" is adjusted on "S2: Drop off" and in the "Condition" column, the "C2: Start 1->0" condition, is selected for "I L1" signal. For this assessment, the intended parameter in the "Signal Type" has been selected as "Amplitude". Now, because the current amplitude of the relay "Drop" is 1.9 A, in the "Nom" column, the 1.9 A with 50 mA as positive and negative tolerances is adjusted. Remember that the current drop assessment in phases two and three are performed in the same way with this difference that in the "Signal" column, the "I L2 " and "I L3" phases are selected.

To run the test, you have to click on the "Start" icon in the "Toolbar" section of the software. You can then see that at first, the first state that is designed for "Pick up" test is executed and after applying the trip signal and meeting the specified condition in the "Trigger" tab, the second state is executed and tested. Besides, you can use the "Test" menu or "F5" key on the keyboard to run the test.

In order to apply the changes in the designed states and also re-run the test, you have to "Clear" the previous test results using the "Clear Test" icon in the "Toolbar". Now, by clicking on the red-colored cross icon you see that this test is "Cleared" and the icon related to "Start" is activated. Furthermore, using the "F4" on the keyboard the test can be "cleared". If you want some specified "States" to be executed from the designed "States" in the "Table View", you have to check them in the "Table View" window or by clicking on the right-side arrow of the "Start" icon, by selecting the "Start Selected State", run the selected "States". By selecting the "Start Unselected State" option the unselected "States" are executed. In addition, if you want to stop the test while its performing, you have to click on the "Stop Test" or press "F6". For example, by checking the second "State" by clicking on the right-side arrow of the "Start" icon, the "Start Selected State" is selected and you see that only the second "State" is executed. Now, by clicking on the "Stop Test" icon, this "State" end and the current injection is halted before meeting the specified conditions in the "Trigger" tab.

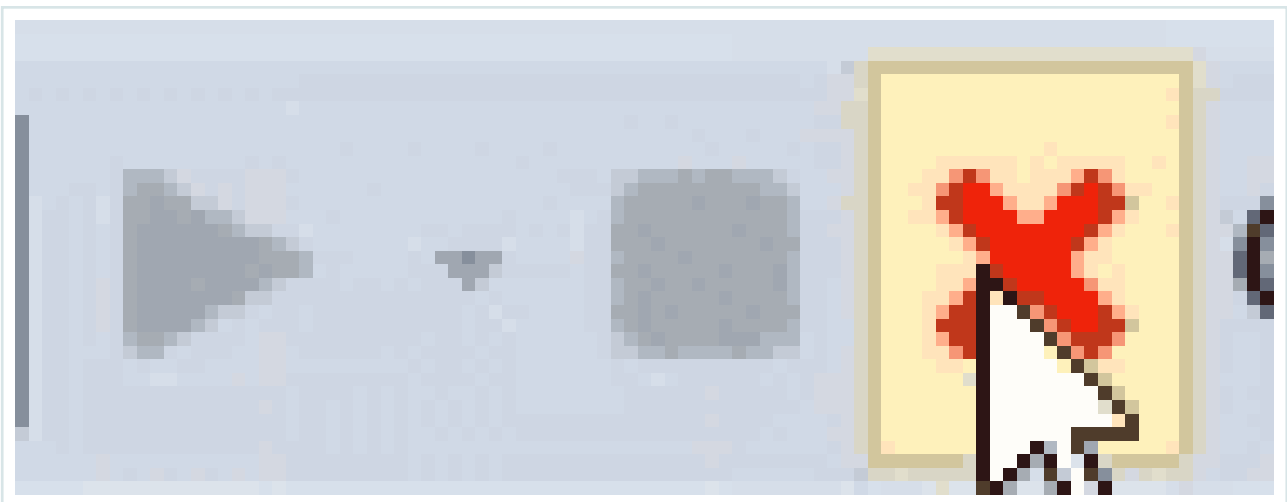


Figure 7



Figure 8

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