



VEBKO ONLINE HELP

Step Ramp Type

Category	tester
Section	AMT Sequencer Module
Language	English
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Contents

1. "Start Values" table 4
2. "Step Values" section 4
3. "Final Values" section 5

To better explain this "State Type", other than "Detail View" window, "Signal View" window is maximized too so you can view the outputs. In the "Signal View" window, the signal view type is set on "RMS" mode, "Digital" signals are disabled and, to have a better view of the signals, the signals are turned "Bold".

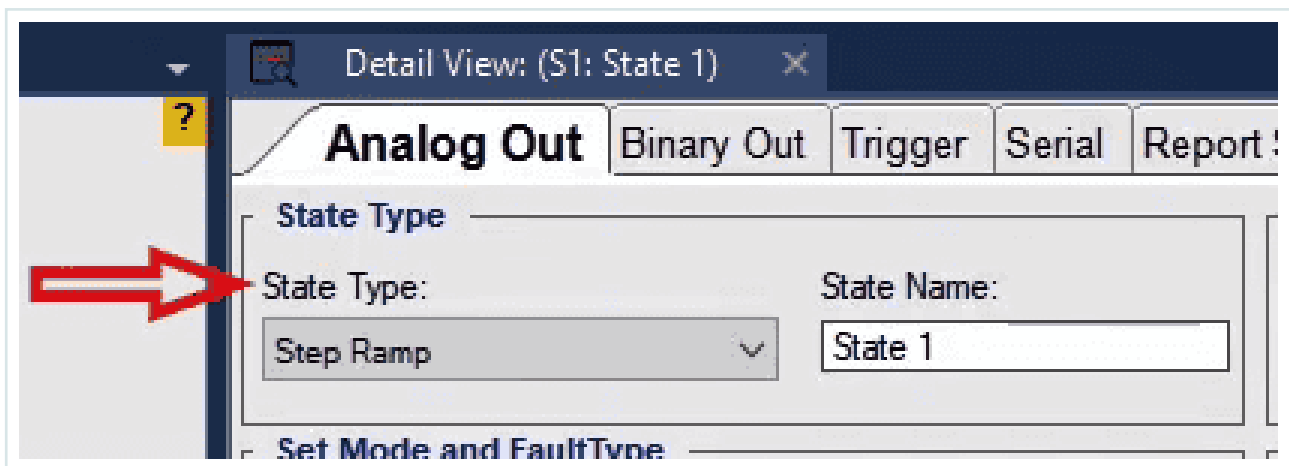


Figure 1

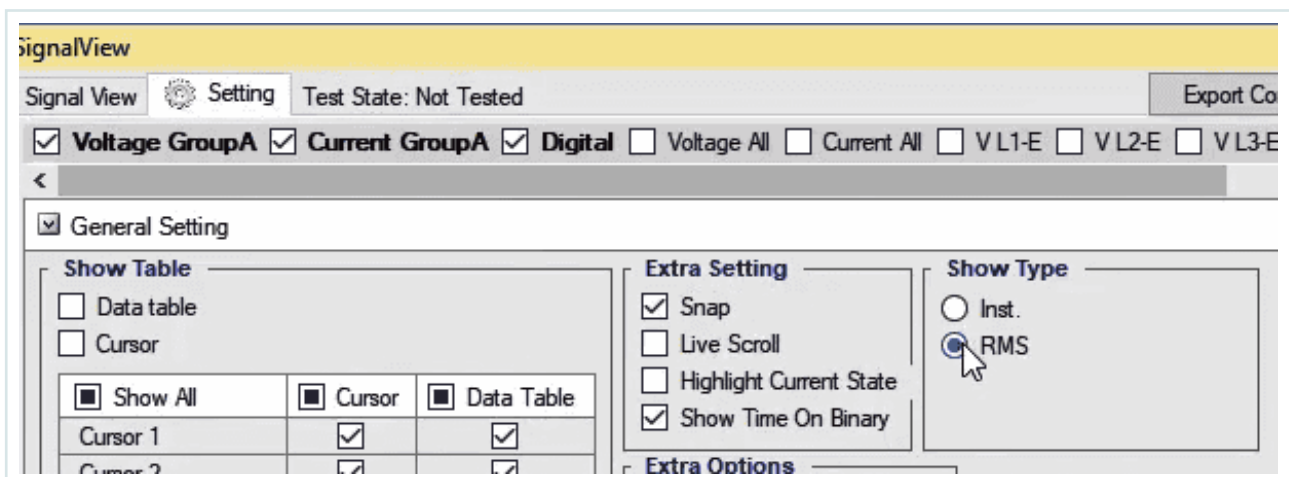


Figure 2

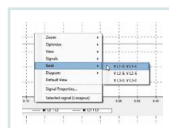
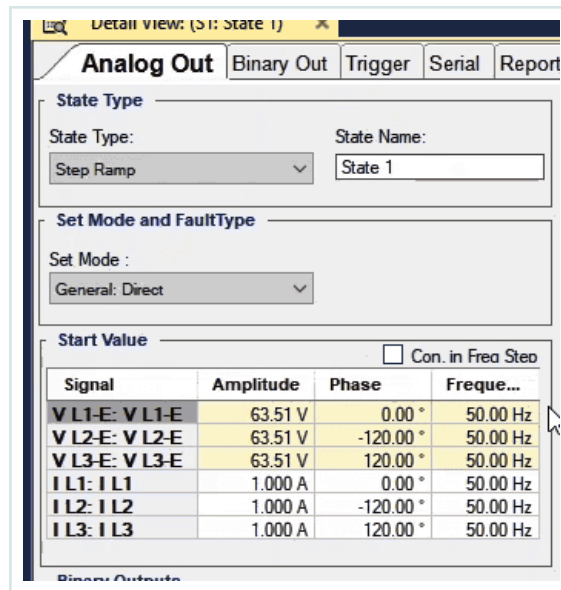


Figure 3

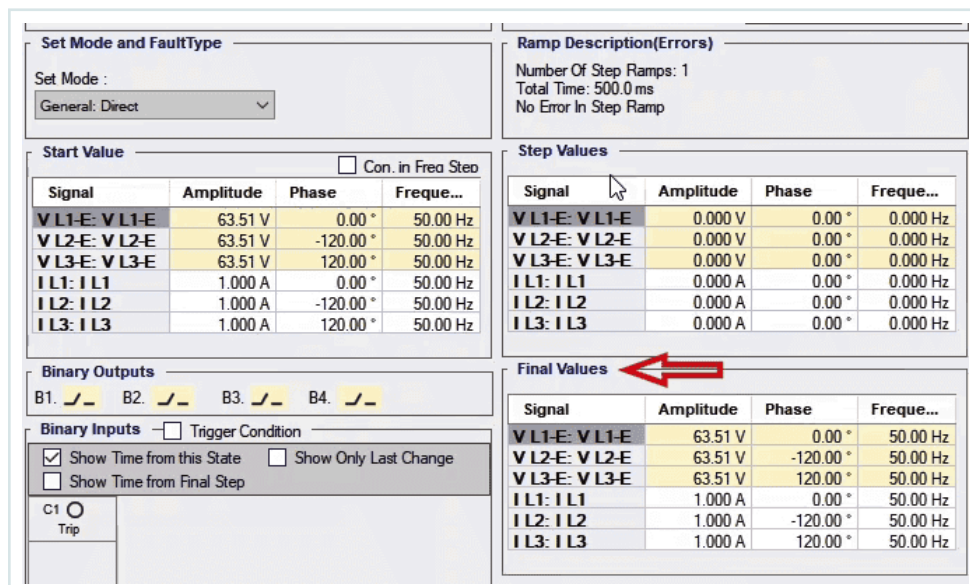
In this "State Type", it is possible to set the voltage and current outputs of the device to increasing or decreasing "Ramp. This "State Type" is used when the user wishes to get a threshold for a parameter. It should be mentioned that it is possible to apply this "Ramp" to amplitude, phase and frequency or a combination of these options for voltage and current signals.



Signal	Amplitude	Phase	Frequ...
V L1-E: V L1-E	63.51 V	0.00 °	50.00 Hz
V L2-E: V L2-E	63.51 V	-120.00 °	50.00 Hz
V L3-E: V L3-E	63.51 V	120.00 °	50.00 Hz
I L1: I L1	1.000 A	0.00 °	50.00 Hz
I L2: I L2	1.000 A	-120.00 °	50.00 Hz
I L3: I L3	1.000 A	120.00 °	50.00 Hz

Figure 4

It should be noted that, to better understand the concept of "Step Ramp", only "General: Direct" mode is explained. Creating a "Ramp" output requires three values: start value, step value and final value.



Signal	Amplitude	Phase	Frequ...
V L1-E: V L1-E	63.51 V	0.00 °	50.00 Hz
V L2-E: V L2-E	63.51 V	-120.00 °	50.00 Hz
V L3-E: V L3-E	63.51 V	120.00 °	50.00 Hz
I L1: I L1	1.000 A	0.00 °	50.00 Hz
I L2: I L2	1.000 A	-120.00 °	50.00 Hz
I L3: I L3	1.000 A	120.00 °	50.00 Hz

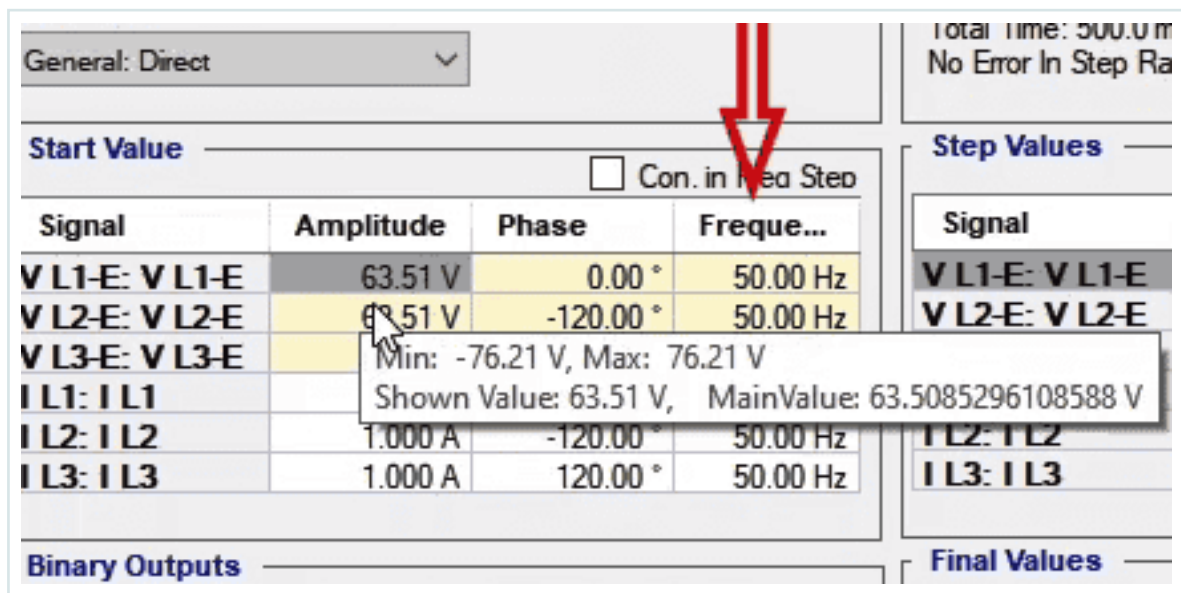
Signal	Amplitude	Phase	Frequ...
V L1-E: V L1-E	0.000 V	0.00 °	0.000 Hz
V L2-E: V L2-E	0.000 V	0.00 °	0.000 Hz
V L3-E: V L3-E	0.000 V	0.00 °	0.000 Hz
I L1: I L1	0.000 A	0.00 °	0.000 Hz
I L2: I L2	0.000 A	0.00 °	0.000 Hz
I L3: I L3	0.000 A	0.00 °	0.000 Hz

Signal	Amplitude	Phase	Frequ...
V L1-E: V L1-E	63.51 V	0.00 °	50.00 Hz
V L2-E: V L2-E	63.51 V	-120.00 °	50.00 Hz
V L3-E: V L3-E	63.51 V	120.00 °	50.00 Hz
I L1: I L1	1.000 A	0.00 °	50.00 Hz
I L2: I L2	1.000 A	-120.00 °	50.00 Hz
I L3: I L3	1.000 A	120.00 °	50.00 Hz

Figure 5

1 "Start Values" table

In this section, the start value of "Ramp" is specified and it indicates that from what point the "Ramp" should start. These values can be specified for the three parameters of amplitude, phase and frequency separately. For example, values of voltage in this section are set at 5, 10 and 15 volts. "Binary Output", "Binary Input" and "Other Setting" sections are explained in previous videos and will not be mentioned here.



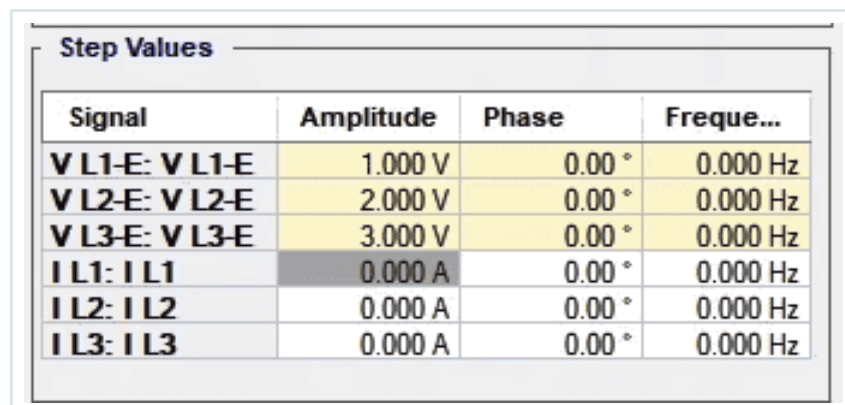
Signal	Amplitude	Phase	Frequ...
VL1-E: VL1-E	63.51 V	0.00 °	50.00 Hz
VL2-E: VL2-E	63.51 V	-120.00 °	50.00 Hz
VL3-E: VL3-E			
IL1: IL1			
IL2: IL2	1.000 A	-120.00 °	50.00 Hz
IL3: IL3	1.000 A	120.00 °	50.00 Hz

Min: -76.21 V, Max: 76.21 V
Shown Value: 63.51 V, MainValue: 63.5085296108588 V

Figure 6

2 "Step Values" section

In "Step Values" section, the value for every "Step" is specified. These values can be specified for the three parameters of amplitude, phase and frequency separately. For example, the value of "Step" for voltage is set at 1, 2 and 2 volts.



Signal	Amplitude	Phase	Frequ...
VL1-E: VL1-E	1.000 V	0.00 °	0.000 Hz
VL2-E: VL2-E	2.000 V	0.00 °	0.000 Hz
VL3-E: VL3-E	3.000 V	0.00 °	0.000 Hz
IL1: IL1	0.000 A	0.00 °	0.000 Hz
IL2: IL2	0.000 A	0.00 °	0.000 Hz
IL3: IL3	0.000 A	0.00 °	0.000 Hz

Figure 7

3 “Final Values” section

In this section, the final value of the ramp signal is specified which indicates that at what point should the ramp finish. These values can be specified for the three parameters of amplitude, phase and frequency separately. The final value of voltage in this section is 20, 25 and 30 volts.

Final Values			
Signal	Amplitude	Phase	Freque...
V L1-E: V L1-E	20.00 V	0.00 °	50.00 Hz
V L2-E: V L2-E	25.00 V	-120.00 °	50.00 Hz
V L3-E: V L3-E	30.00 V	120.00 °	50.00 Hz
I L1: I L1	1.000 A	0.00 °	50.00 Hz
I L2: I L2	1.000 A	-120.00 °	50.00 Hz
I L3: I L3	1.000 A	120.00 °	50.00 Hz

Figure 8

You can see that the signal of all three voltage phases has reached from the start value to the final value, according to the specified steps, in form of a “Ramp”. In the “Time Setting” box in “Step Ramp Setting” section, the time of each step is specified. This value is 500 milliseconds by default. By checking the “Enable Reset” option, it is possible to allow the signals to “Reset” after a specific time period. In “Reset Time” section, the time of each “Reset” step is specified which is added to the “State” time. To set the value and its parameter you should go to the bottom of the page in “Reset Values” section. This section and “Disable Relay” section has already been described in previous videos.



Step Ramp Setting

Step Time

☒ Enable Reset

Reset Time

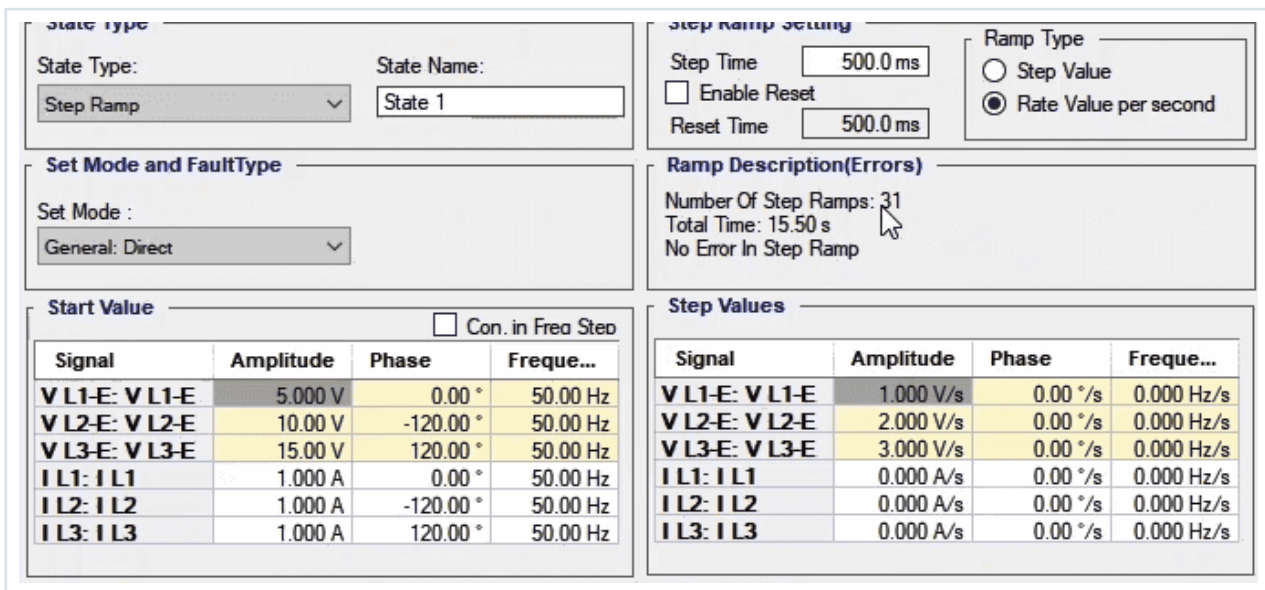
Ramp Type

☒ Step Value

☐ Rate Value per second

Figure 9

There are two options in the “Ramp Type” section where the first option, which is “Step Values”, is active by default. By selecting this option, the settings are as described before. As you can see, for example in L1 phase, each “Step” is increased by 1 volt every 500 milliseconds but by selecting “Rate Value per Second”, the number of steps specified in the “Step Values” table is determined as value per second. For example, L1 phase should increase by 1 volt every second. According to the specified “Step Time”, every second, there will be two 500millivolts step.



State Type

State Type: State Name:

Set Mode and FaultType

Set Mode:

Start Value

☐ Con. in Frea Step

Signal	Amplitude	Phase	Freque...
VL1-E: VL1-E	5.000 V	0.00 °	50.00 Hz
VL2-E: VL2-E	10.00 V	-120.00 °	50.00 Hz
VL3-E: VL3-E	15.00 V	120.00 °	50.00 Hz
IL1: IL1	1.000 A	0.00 °	50.00 Hz
IL2: IL2	1.000 A	-120.00 °	50.00 Hz
IL3: IL3	1.000 A	120.00 °	50.00 Hz

Step Ramp Setting

Step Time: Ramp Type: ☐ Step Value ☒ Rate Value per second

☐ Enable Reset

Reset Time:

Ramp Description(Errors)

Number Of Step Ramps: 31
Total Time: 15.50 s
No Error In Step Ramp

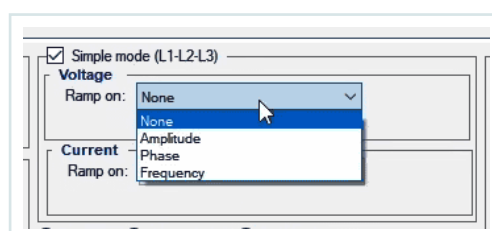
Step Values

Signal	Amplitude	Phase	Freque...
VL1-E: VL1-E	1.000 V/s	0.00 °/s	0.000 Hz/s
VL2-E: VL2-E	2.000 V/s	0.00 °/s	0.000 Hz/s
VL3-E: VL3-E	3.000 V/s	0.00 °/s	0.000 Hz/s
IL1: IL1	0.000 A/s	0.00 °/s	0.000 Hz/s
IL2: IL2	0.000 A/s	0.00 °/s	0.000 Hz/s
IL3: IL3	0.000 A/s	0.00 °/s	0.000 Hz/s

Figure 10

In “Ramp Description (Errors)” section, steps of the “Ramp”, the total time of the “State” and the errors are described. By using the “Simple Mode” option, it is possible to specify the value of steps of the “Ramp” and the final value of the “Ramp” more easily. By checking the “Simple Mode” option, the settings of “Step Values” and “Final Values” table are disabled and a new section including voltage and current sections are opened.

In these sections, first, the parameter is selected from the slider bar. This slider bar includes amplitude, phase and frequency options. After selecting the parameter, two options are displayed. In the “Step Value” and “Final Value” fields, the step value of the “Ramp” and the final value of the “Ramp” are specified respectively. The difference between this option and the previous state is that in this state all three phases change simultaneously.



☒ Simple mode (L1-L2-L3)

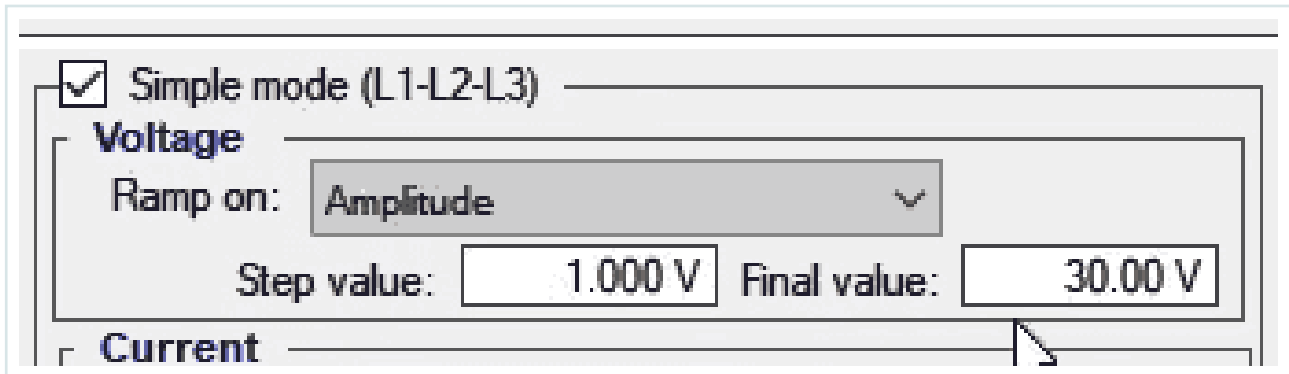
Voltage

Ramp on:

Current

Ramp on:

Figure 11



☒ Simple mode (L1-L2-L3)

Voltage

Ramp on: Amplitude

Step value: 1.000 V Final value: 30.00 V

Current

Figure 12

An important point in “Ramp” on frequency is that there will be signal jump. So, it is possible that while testing the frequency relays, an appropriate response is not received from the relay; while “Ramping” on a frequency, to keep the signal steady, it is necessary to check the “Continuous in Frequency Step”. By specifying 2Hz as the start value of frequency and 3Hz as the “Step Ramp” and 50Hz as the final value, there will be a frequency jump in the output signal. To view this frequency jump, first, the output signal must be set on “Inst”. As you can see, by checking “Continuous in Frequency Step”, this frequency jump disappears.

[jg1]Step_Ramp_Type