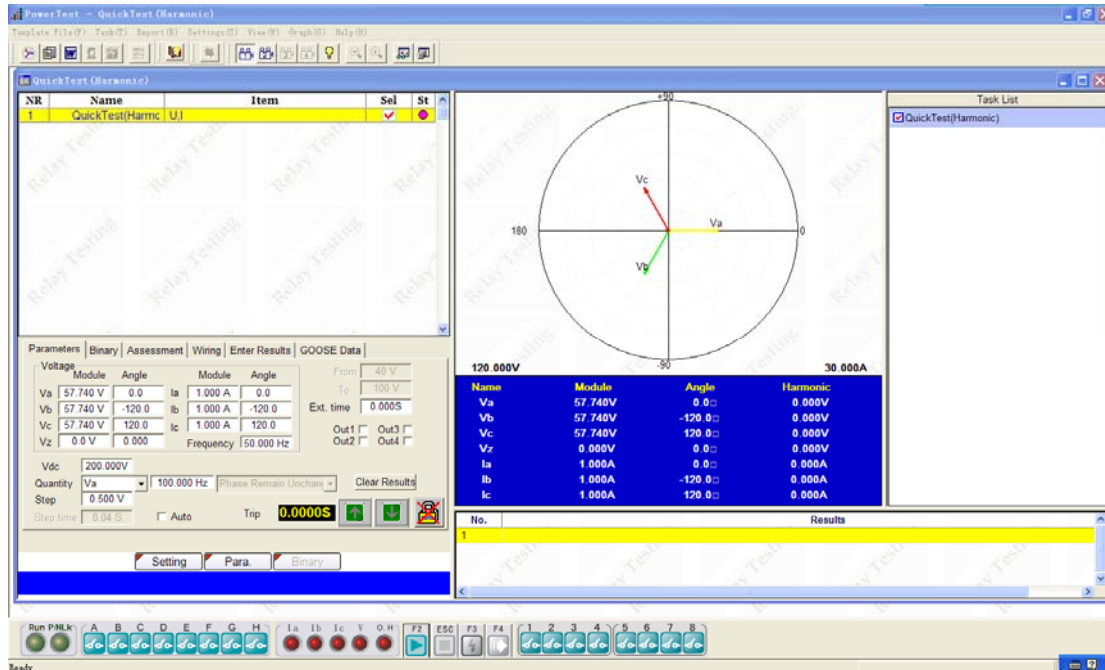


QuickTest (Harmonic)

This module aims to automatically and manually superposition harmonics (The frequency is self-defined.)



Manual test mode

In this mode we can manually control all sources to change with set steps.

Voltage

	Module	Angle
Va	57.740 V	0.0
Vb	57.740 V	-120.0
Vc	57.740 V	120.0
Vz	0.0 V	0.000

	Module	Angle
Ia	1.000 A	0.0
Ib	1.000 A	-120.0
Ic	1.000 A	120.0

Vdc

200.000V

Quantity

Ia,Ib,Ic

100.000 Hz

Phase Remain Unchan

Clear Results

Step

0.500 A

Step time

0.04 S

Auto

Trip

0.0000S

Select variable to control

Following variables can be selected to control

Va	Control Va
Vb	Control Vb
Vc	Control Vc
Va,Vb	Control Va,Vb at same time
Vb,Vc	Control Vb,Vc at same time
Vc,Va	Control Vc,Va at same time
Va,Vb,Vc	Control Va,Vb,Vc at same time
Ia	Control Ia
Ib	Control Ib
Ic	Control Ic
Ia,Ib	Control Ia,Ib at same time
Ib,Ic	Control Ib,Ic at same time
Ic,Ia	Control Ic,Ia at same time
Ia,Ib,Ic	Control Ia,Ib,Ic at same time

Sources available to control

We have the following sources available to control.

Voltage

	Module	Angle
Va	57.740 V	0.0
Vb	57.740 V	-120.0
Vc	57.740 V	120.0
Vz	0.0 V	0.000

	Module	Angle
Ia	1.000 A	0.0
Ib	1.000 A	-120.0
Ic	1.000 A	120.0

Frequency

50.000 Hz

We can control the amplitude, phase angle and frequency of voltage and current sources.

Set frequency of output harmonic (0-1000Hz)

Sequence of three phase harmonic

Note: in case **Vdc** is not used to supply auxiliary DC voltage to drive relay we can also control it here.

Phase Remain Unchanging	Keep the same with current/voltage output phase in the interface
Positive Sequence	Positive output harmonic
Negative Sequence	Negative sequence harmonic
Zero Sequence	Zero sequence harmonic

Select control step

Here we can set the control step

Step 0.500V

Set outputs as DC

Set Vdc output value

Ext. time

When this time is set here the output time will be extended even after relay trips.

Ext. time 0.100s

This time setting is normally used in the test application where we need to consider the circuit breaker mechanism operation time.

Set binary output

Here we can control the binary output at any time during the test process by selecting the selection box.

Out1 ☒ Out2 ☐
Out3 ☐ Out4 ☐

Trip time display

If relay trips we can see the trip time here

Trip time 0.0000s

Output control button

When test is started we can use these two buttons to control the variable of the selected quantity with set step.



Lock control button

This control button is designed to test the relay tripping time in manual mode.



Before test is started this button is not activated

Example: test the relay tripping time with **Lock** button in manual mode

Step 1:

Make wiring, connecting voltage and current outputs to relay and connect relay tripping output to binary input 1

Step 2:

Set normal voltages and currents for a health system

Step 3:

Start output and the button becomes



Step 4:

Press **Lock** button



Step 5:

Modify voltages and currents to faulty status

Step 6:

Press **Lock** button to release the lock.



At the same time the internal timer will start. When relay trips the timer will stop and the tripping time will be displayed.

Auto test mode

In this mode we can select different way to control the output automatically.

Following control modes are available for selection.

from-to	Test pickup
from-to-from	Test pickup and drop-off

In auto test mode some more test parameters will be allowed to set

Voltage

	Module	Angle	Module	Angle
Va	57.740 V	0.0	Ia	1.000 A
Vb	57.740 V	-120.0	Ib	1.000 A
Vc	57.740 V	120.0	Ic	1.000 A
Vz	0.0 V	0.000		

From 30.000 A
To 30.000 A
Ext. time 0.000S
Out1 ☐ Out3 ☐
Out2 ☐ Out4 ☐

Vdc 200.000V
Quantity Ia,Ib,Ic 100.000 Hz Zero Sequence
Step 0.500 A
Step time 0.04 S ☒ Auto Trip 0.0000S

Clear Results

to: the stop point. If relay does not trip during the ramping process the test will terminate at this point

Note: the 'from' value must be set in the way that relay will not trip at this setting. For some type of relay, such as low voltage relay, the 'from' setting is larger than 'to' setting

Set step time
Here we can set the control step

Time 2 S

Set start and end value
In Auto mode the selected variable will ramp with the set start and stop value.

From 30.000 A
To 30.000 A

Note: due to communication requirement between test set and external computer the step time can not be set less than 2s in order to test the trip time

from: the start point from where the variable will ramp