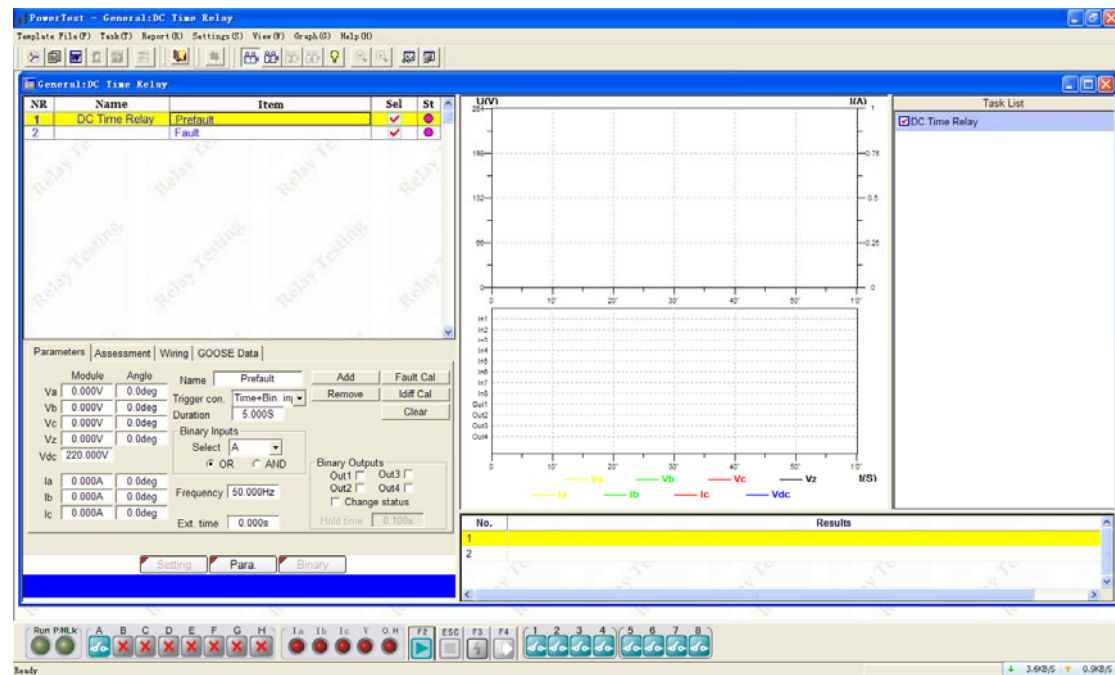


DC Time Relay

This module is used to test trip time of DC relay by Vdc. There are two statuses: pre-fault status and fault status. The test status can be added.



Please refer to the State Sequence (4V, 3I) for detailed testing method.

The amplitude, phase angle, frequency and corresponding trigger conditions for each state can be defined.

Module	Angle	Name	Add	Fault Cal
Va	0.000V 0.0deg	Prefault	Add	Fault Cal
Vb	0.000V 0.0deg	Trigger con. Time+Bin. in	Remove	Idiff Cal
Vc	0.000V 0.0deg	Duration 5.000S		Clear
Vz	0.000V 0.0deg	Binary Inputs		
Vdc	220.000V	Select A		
Ia	0.000A 0.0deg	OR AND		
Ib	0.000A 0.0deg	Binary Outputs		
Ic	0.000A 0.0deg	Out1 Out3		
		Out2 Out4		
		Change status		
		Frequency 50.000Hz		
		Ext. time 0.000s		
		Hold time 0.100s		

Trigger condition

We can define trigger condition for each test state and when this trigger condition is met the current test state will be switched to the next one.

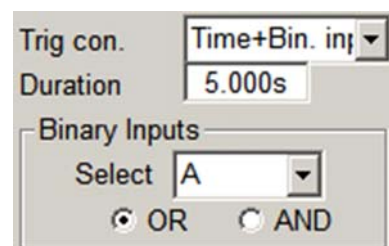
Common trigger condition includes.

Time



Test state will last for the time defined here and when this time is over the current test state will be switched to the next one.

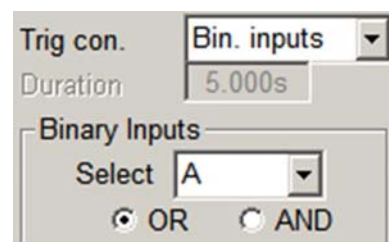
Time or Binary Input



Test state will be switched to the next one if one of the condition is met

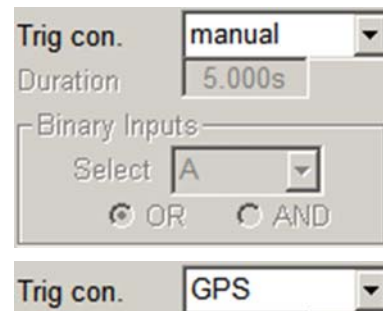
Time: if the set time is over
Binary input: if selected binary input is activated

Binary Input



Test state will be switched to the next one if binary input is triggered.

Manually



the next one



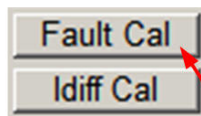
Test state will be switched to the next one if GPS pulse signal is received. In this case the

Note: Optional PGPS-02 GPS

synchronization device should be used for this application

Short circuit calculation

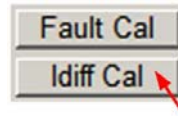
To easy the setting when testing impedance relay a short-circuit calculation tool is provided.



Click here for short-circuit calculation

Differential calculation

To easy the setting when testing differential relay a differential current calculation tool is provided.



Click here for differential current calculation

The calculation page is shown bellow

A screenshot of the 'Fault Calculation' dialog box. It contains several input fields and dropdown menus. 'Fault type' is set to 'Single phase'. 'KE given as' has a dropdown set to 'KE'. 'Type' is set to 'KE', 'Module' is '0.670', and 'Angle' is '0.0deg'. Under 'Z, Phi' or 'R, X', 'Z' is '1.000ohm' and '90.0deg', while 'R, X' is '0.000ohm' and '1.000ohm'. 'Test mode' is 'I const.', 'I Load' is '0.000A', 'Power Angle' is '0.0deg', 'I Test' is '5.000A', 'V Test' is '0.000V', and '|ZS/ZL|' is '0.000'. 'OK' and 'Cancel' buttons are at the bottom.A screenshot of the 'Idiff Calculating' dialog box. It contains several input fields and dropdown menus. 'Id' is '1.000A', 'IR' is '1.000A', 'Phase' is 'A', 'Tap/Iref(HV Side)' is '1.000', 'Trans.' is 'Y/Y-12', 'Tap/Iref(M, LV Side)' is '1.000', 'CT Connect.' is 'Y/Y', 'Diff. Equ.' is 'Id=I1+I2', 'Reference' is 'HV', 'Bias. Equ.' is 'IR=(|I1-I2|)/2', and 'Tap Cal.' is 'No Wiring Factor'. 'OK' and 'Cancel' buttons are at the bottom.

Based on the setting here the required voltage , current and phase angle setting will be set for the current test state automatically.

Based on the differential relay settings the actual test currents will be set automatically.

Binary output control

For each test state we can control the binary output in two ways.

Case 1:

Binary Outputs

Out1 ☒ Out3 ☐

Out2 ☐ Out4 ☐

☐ Change status

Hold time

The selected binary output will keep its status during the whole process of the current test state.

Case 2:

Binary Outputs

Out1 ☒ Out3 ☐

Out2 ☐ Out4 ☐

☒ Change status

Hold time 0.100s

If **Change status** box is selected the selected binary output will last for a time set in **Hold time**.

Example:

In the above example the binary output 1 will be closed for 0.1s for the current test state

GOOSE publish setting

If the optional IEC61850 application facility is equipped we can set GOOSE publishing setting here.

GOOSE
Publish DataSet

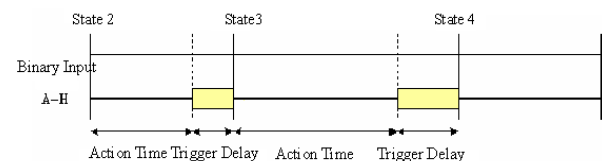
Edit

{True,[1000000000000]}

Note: for more information about **optional** IEC61850 test application please contact the manufacture

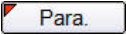
Hold time

The current test state will be extended to the time defined here.



In the above diagram the yellow marked part is the extension time defined by **Hold time**.

Set group parameters

Click  button to enter into group parameter page. Group test parameter page along with default settings is shown below

Name	Value	Variable
Ref. State	No1	JudgeCondition

Ref. State

Here we define the binary input trigger

condition for the current test state.

No 1: we compare the current binary input status with the one of the first test state. The trigger will happen if they have different status.

priev: we compare the current binary input status with the one of the last test state. The trigger will happen if they have different status.