

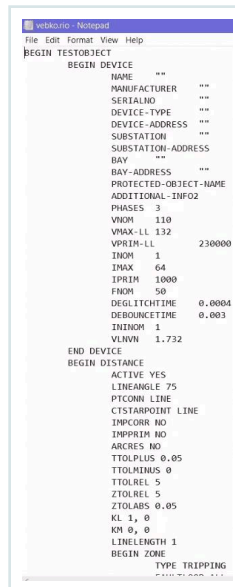


VEBKO ONLINE HELP

Introducing the “RIO”

Category	tester
Section	Modules Toolbar and Statusbar
Language	English
Generated	2026-10-18

By opening a "Rio" file in notepad, you see that the specifications of the relay are <mentioned> in this file. For example, between "BEGIN DEVICE" and "END DEVICE" section, information and nominal specifications of the relay are mentioned. Or, in the "BEGIN DEVICE" section to the "END DISTANCE", the information regarding the distance function and in the "BEGIN ZONE" section, the information regarding the relay zones are. Similarly, all the relay information is mentioned in this file.



```

BEGIN TESTOBJECT
BEGIN DEVICE
NAME ""
MANUFACTURER ""
SERIALNO ""
DEVICE-TYPE ""
DEVICE-ADDRESS ""
SUBSTATION ""
SUBSTATION-ADDRESS ""
BAY ""
BAY-ADDRESS ""
PROTECTED-OBJECT-NAME ""
ADDITIONAL-INFO2 ""
PHASES 3
VDRN 110
VMAX-LL 132
VPRIM-LL 230000
INOM 1
INAX 64
IPRIM 1000
FNOM 50
DEGLITCHTIME 0.0004
DEBOUNCE TIME 0.003
ININOM 1
VLNOM 1.732
END DEVICE
BEGIN DISTANCE
ACTIVE YES
LINEANGLE 75
PTCORR LINE
CTSTARPOINT LINE
IMPCORR NO
IMPRIM NO
ARCRES NO
TTOLPLUS 0.05
TTOLMINUS 0
TTOLREL 5
ZTOLREL 5
ZTOLABS 0.05
KL 1, 0
KM 0, 0
LINELENGTH 1
BEGIN ZONE
TYPE TRIPPING
  
```

Figure 1

By having a "Rio" file, you can "Load" this file in "Test Object" through "File" option. After loading, all of the information existing in the Rio file is displayed. So, the second method for entering information of relays whose software gives a "Rio" output file, is loading "Rio" file in "Test Object". This is how the relay information is loaded in the software.

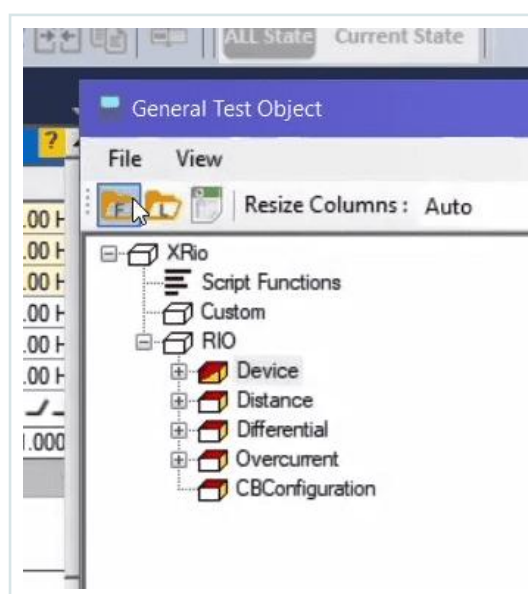


Figure 2

The point is that the information in a "Rio" file is fixed, meaning that it is not possible to add or delete a new block or parameter in the "Device" block. In fact, "Rio" is a fixed file and much of the "Test Object" design is related to the "Rio" file design. The purpose of "Rio" file is that, for example, each "Distance" relay be end to "Device" and "Distance" blocks and contain a series of nominal specifications, zones and a series of times. However, it is possible that the "Distance" relay itself contains thousands of parameters and not all of these parameters exist in the "Rio" file but ultimately the "Rio" output file of the "Distance" relay contains information mentioned in "Device" and "Distance" blocks. This is, also, true for "Differential" and "Overcurrent" relays. So, the "Rio" file is a fixed part of the relay settings and includes information related to "Device" block and protective functions. Also, the "CB Configuration" block is added to "Rio" files for simulation of power key operation. It is possible to add other blocks to "Rio" file. For example, by opening "AMT Distance" room from "Test Object" window it is possible to add another block, if necessary, by right-clicking on "Rio" and selecting the "Add Block" option.

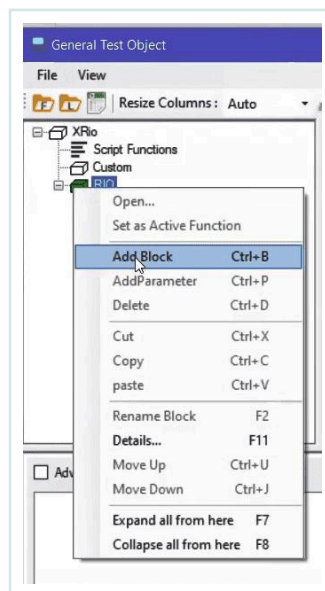


Figure 3

After making a new block, it is possible to rename it by right-clicking on the block. Assume that a relay has two functions of "Distance" and "Under Excitation". These functions are tested by the impedance method. So it is necessary that there are two "Distance" blocks in this section. After adding a new block, by right-clicking on it and selecting "Rename Block", its name is changed to "Under Excitation". By double-clicking on "Under Excitation" block and selecting "Zone Setting" tab on this page, a "Quad" zone is defined for this block according to the described settings. After that, click on "OK".

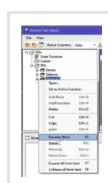


Figure 4

Now that there are two "Distance" blocks, one of them should be active. If the cube next to the block is colored, it means that it is active; if it white, it means that it is not active. Now, if you click on "OK", the information of the active distance block is displayed. Here, the "Mho" characteristic is active. Now, for activating the second distance block it is necessary to right-click on the intended block in the "Test Object" window and select "Set as Active Function". By doing this, the intended block is activated and the previous block is deactivated and by clicking on "OK" the characteristics of "Distance" and "Under Excitation" blocks that are from the "Quad" type are displayed in the "Impedance View". Also, in the advanced mode, it is possible to mix these two blocks. By right-clicking on each block of "Rio" file, it is possible to delete it.

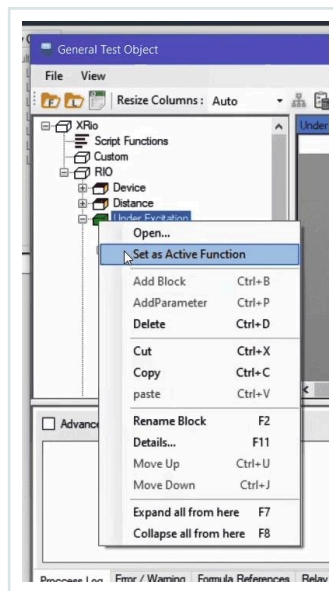


Figure 5

Column Description: Each of these parameters has some information in their row. In the "State" column, by double-clicking on each cell, "Rio Parameter Viewer" page is opened. In the "Enabled" section, you can activate or deactivate this parameter. By deactivating a parameter, the status of its "state" changes. In the "Name" column, the name of the intended parameter is provided. In the "ID" column, there is a unique name selected for each parameter. In the "Description" column, there is an additional description provided for the intended parameter.

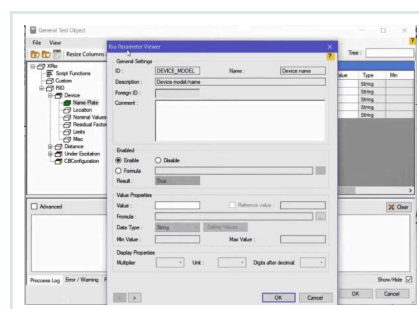


Figure 6

In the "Value" column, the user can select a value for the intended parameter. In the "Type" column, the type of the inserted data for the parameter is specified. In the "Min" and "Max" columns, the minimum and maximum allowed value for the parameter are specified. The "Formula" column is an indicator of that whether this parameter is derived from a formula or is dependent on another parameter. More will be said about this column in the "XRio" section.

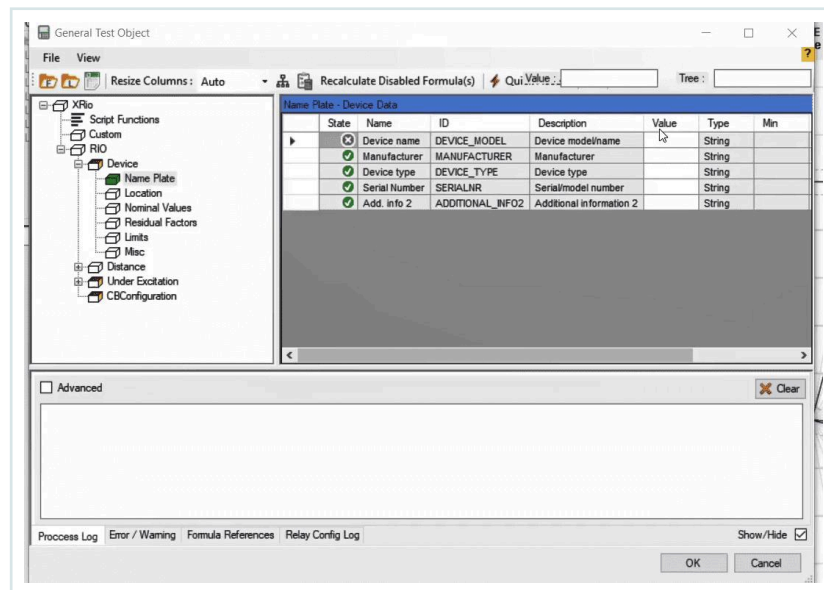


Figure 7

How to make a Rio file by Excel: The point is that there is a series of relays that do not provide a "Rio" file as an output. To get a "Rio" file from this type of relays, click on the "Excel to Rio Files" icon on the "Rio Converter Excel" page. Then, select your intended relay from the list. In this list, you can find the name of relays whose "Excel" file exists in the created software. After selecting the relay, its related "Excel" file opens. On this page, you can enter information about the relay and after entering the information, by clicking on the "Save Rio File" option, a "Rio" file is created from the intended relay. This "Rio" file can be imported by using the "Import from File" icon and after that you can save the relay information. By selecting "Advanced" from the "View" menu, a new row is added to this toolbar page so you can add or delete new blocks or parameters manually if you decide to do that.

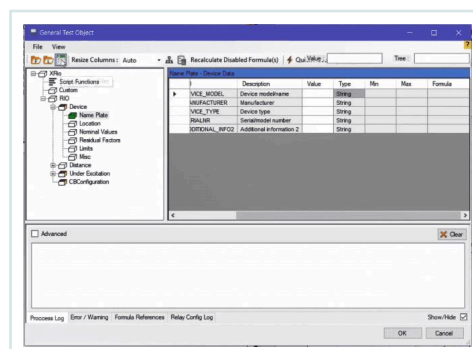


Figure 8

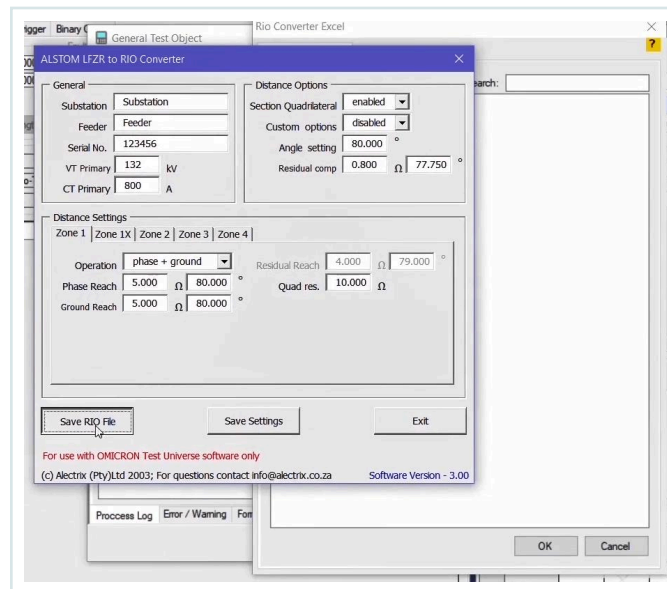


Figure 9

[ig1]Introducing_the_Rio