



VEBKO ONLINE HELP

CVT Ratio2

Category	tester
Section	capacitor voltage transformer
Language	English
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In this tab, CVT turn ratio test is performed where the voltage is given to the CVT primary and measured from the secondary. By dividing the primary and secondary values, turn ratio is obtained and the obtained value can be compared with the nominal value on the plate. For medium and high-voltage CVTs it is possible to perform this test by applying a low voltage or approximately 400 volts to the primary. If there are multiple measuring and protection secondary, it is necessary to measure voltages of all secondaries and obtain all their turn ratios.

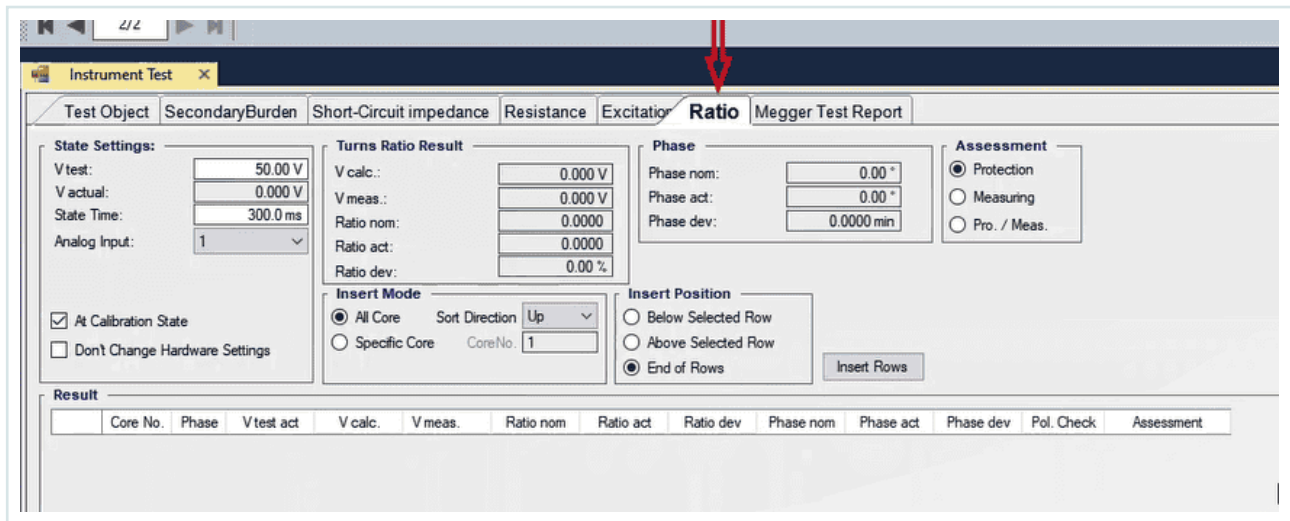


Figure 1

According to the IEC 60044-2 standard, the allowed error percentage is set in accordance with the accuracy class of the CVT. The first column of this accuracy class table and the turn ratio error percentage accuracy column are also available. In the following table, the mentioned error percentages are for cases where the voltage is higher than 2 percent of the nominal voltage. In accordance with the table related to protection CVTs, for example, if the accuracy class is 3P, its allowed error percentage in 2 percent of the nominal voltage is 6 percent and in 100 percent of the nominal voltage is 3 percent.

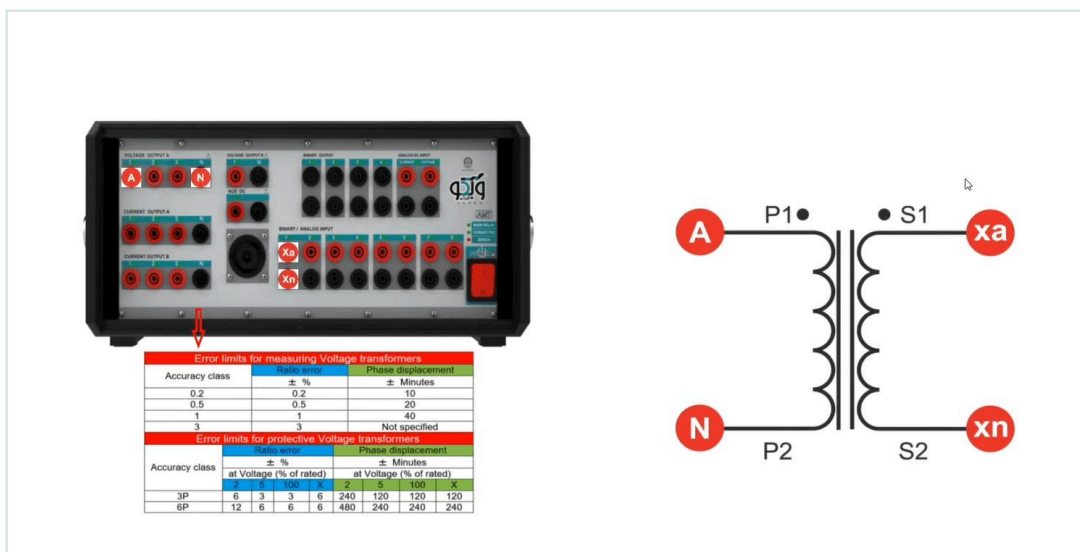


Figure 2

To perform this test, first, fields of "State Settings" section are introduced. In "V test", "V actual", "State Time" and "Analog Input" fields, the amount of test voltage, the actual applied voltage, the duration of the test and the input intended for transformer secondary voltage measurement are specified, respectively. It should be mentioned that inputs number 1 to 8 and input10 are used for voltage measurement.

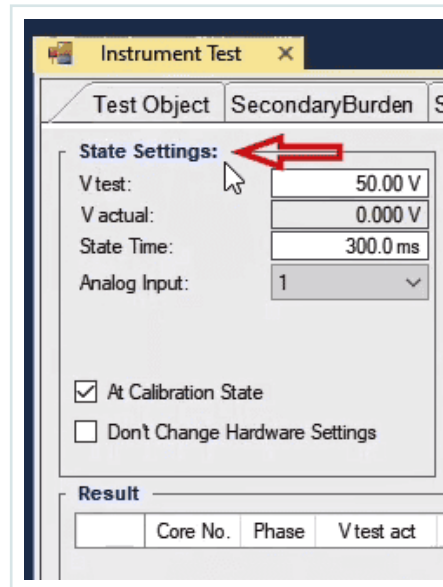


Figure 3

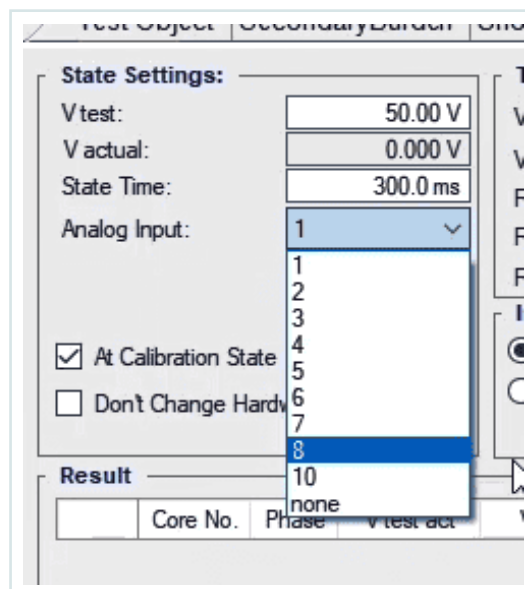
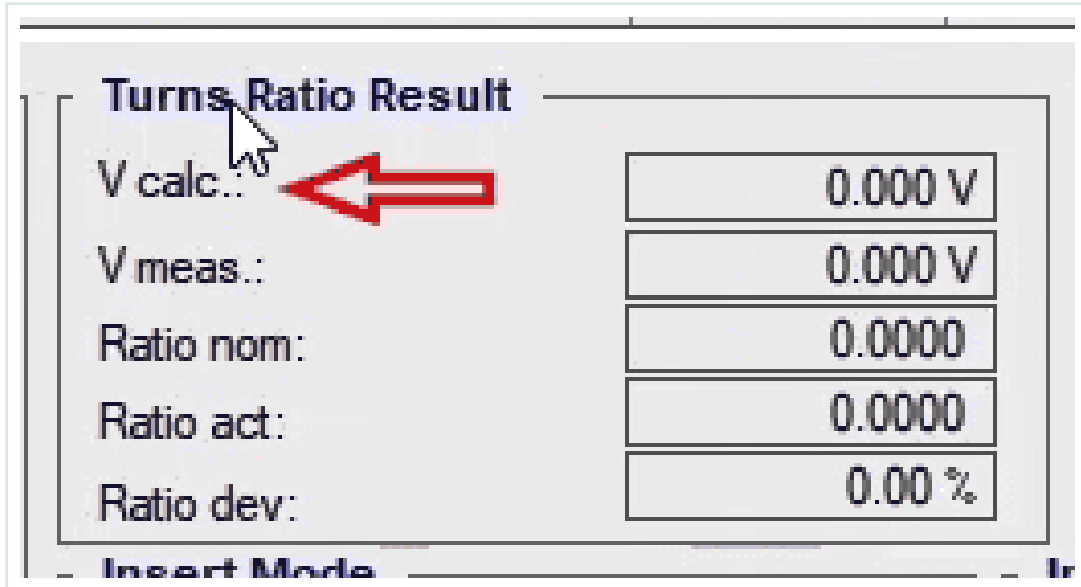


Figure 4

In noisy environments, there is some voltage on the inputs of the device and to increase accuracy, by selecting "At calibration state" option, at the beginning of the test, another state with zero as its value

is created and in the end, this measured voltage will be reduced from the final result.

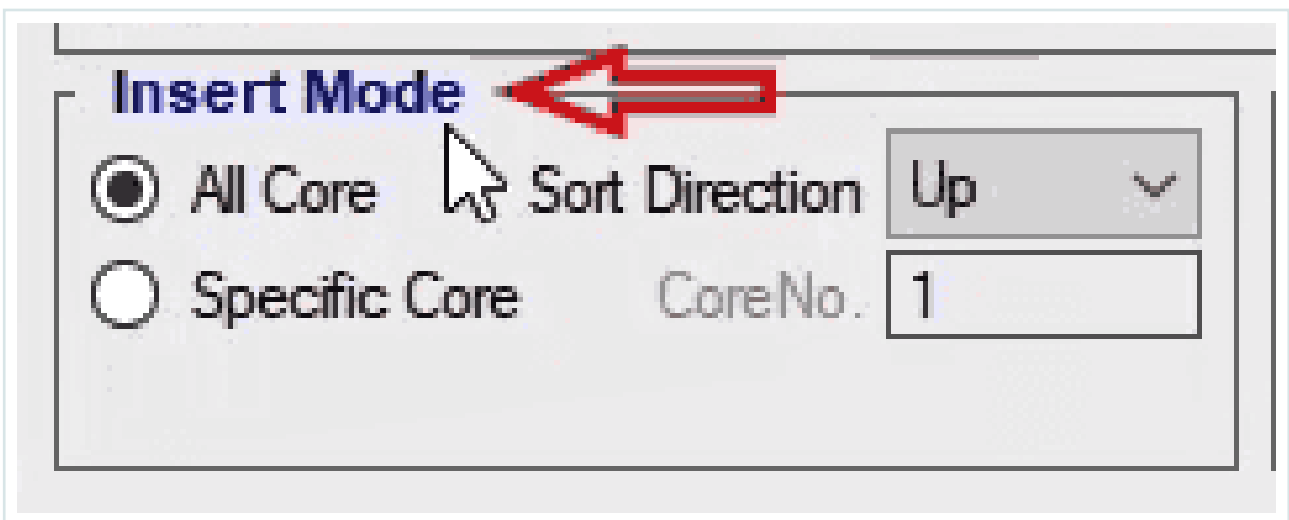
In "Turns Ratio Result", the results of turn ratio test of every core are displayed after performing the test. In "V calc" field, the secondary voltage is calculated by the software in accordance with the values entered in "Test Object" and in "V test" field. In "V meas", "Ratio Nom." and "Ratio Act.", the voltage measured by the input, the nominal turn ratio and the actual turn ratio are calculated by the software, respectively.



Turns Ratio Result	
V calc..	0.000 V
V meas.:	0.000 V
Ratio nom:	0.0000
Ratio act:	0.0000
Ratio dev:	0.00 %

Figure 5

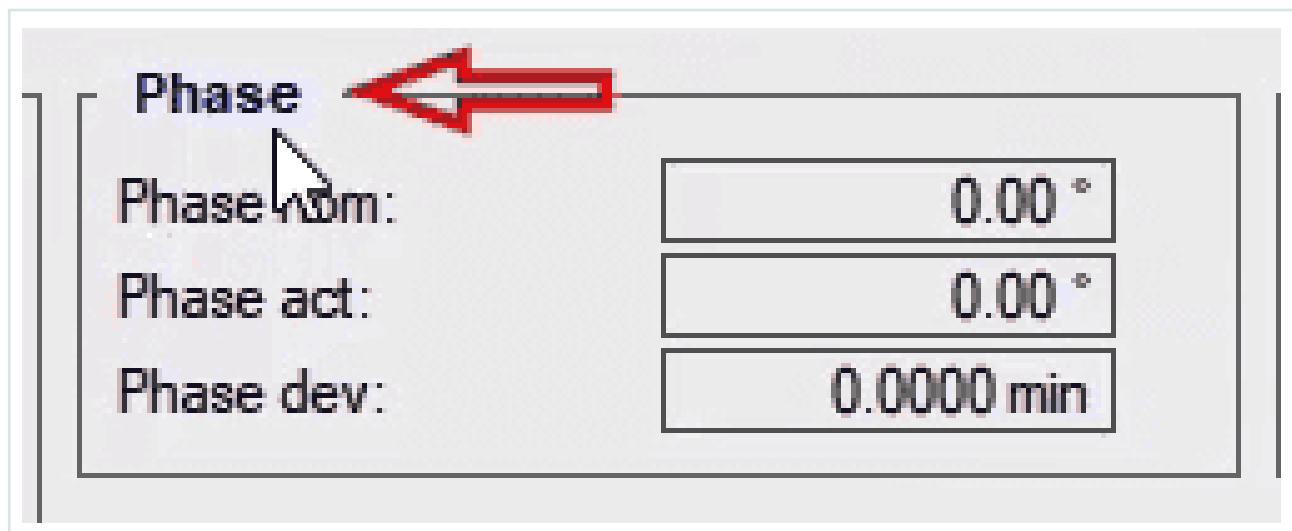
The insertion position of the cores is specified in "Insert Mode" in a way that by selecting "All Core", all cores are added to the "Result" table based on the selection between "Up" or "Down". Also, by selecting "Specific core", a specific core is added to the table in accordance with the choice of the user.



Insert Mode	
☒ All Core	Sort Direction: Up
☐ Specific Core	CoreNo.: 1

Figure 6

In "Phase" section, in "Phase Nom" field, the amount of applied voltage to the CVT and in "Phase Act" the phase difference between the two sides of the transformer are displayed. In "Phase Dev" the deviation of the measured phase in relation to the applied phase is recorded in terms of minutes (one degree equals 60 minutes). Finally, the results of the evaluation are determined in accordance with the type of the core which can be protection, measurement or protection/measurement and also in accordance with what the user selects in "Assessment".



Phase

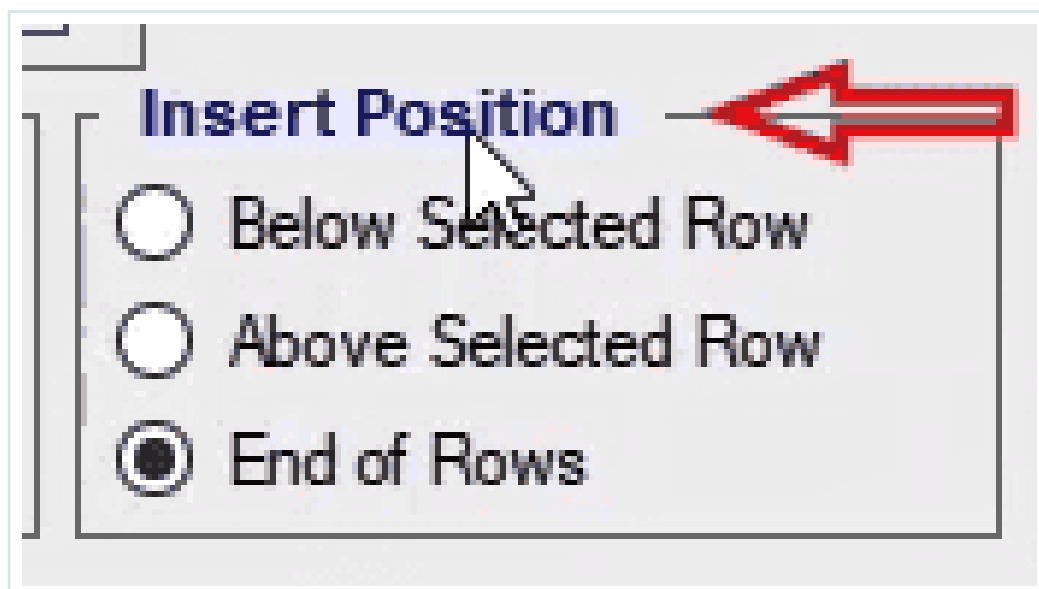
Phase nom: 0.00 °

Phase act: 0.00 °

Phase dev: 0.0000 min

Figure 7

The insertion position of the cores in the table is specified by selecting the options available in "Insert Position". Tables can be added by pressing "Insert Rows" button.



Insert Position

☐ Below Selected Row

☐ Above Selected Row

☒ End of Rows

Figure 8



Figure 9

[jg1]Ratio_Tab