How to test 3 units of single phase energy meters using TS33 Test System?

CALMET
Smart Calibration Devices

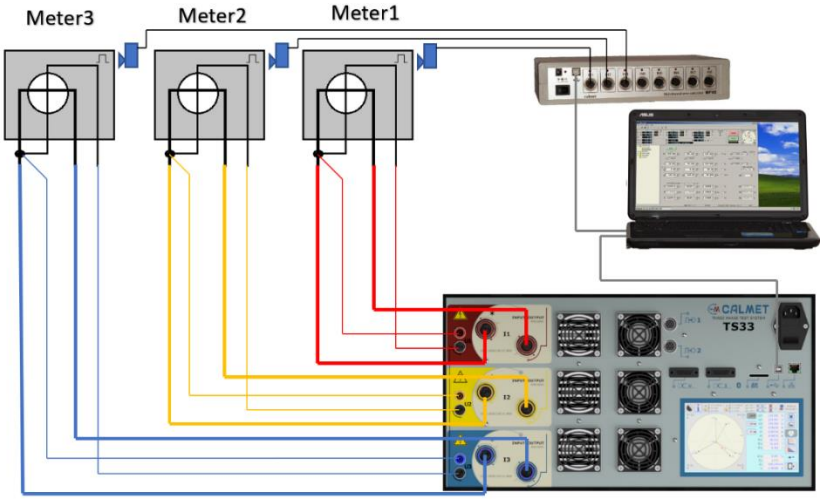
Application Note No07

The measurement system consists of:

- **TS33** Three-phase Test System with Reference Standard and Integrated Current and Voltage Source;
- **MPX8** Eight-channel Meter Error Calculator;
- Laptop with installed **TB PC-Soft** Software;
- Devices under test – 3 units of single-phase meters.

The test is performed in a measurement system where each energy meter under test (DUT) is connected to the TS33 Test System separately on each phase, respectively: DUT1 to L1, DUT2 to L2, and DUT3 to L3, as presented below:

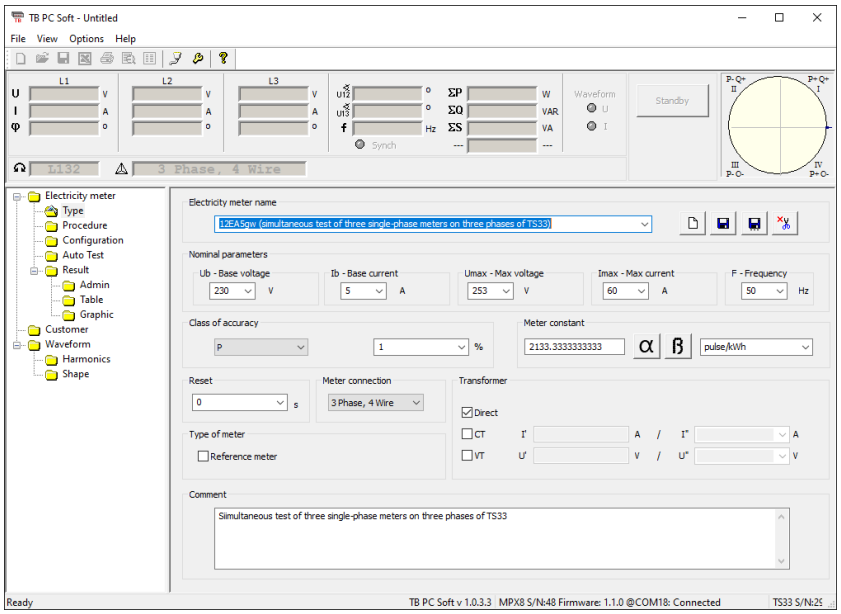
Front plate of meters under test



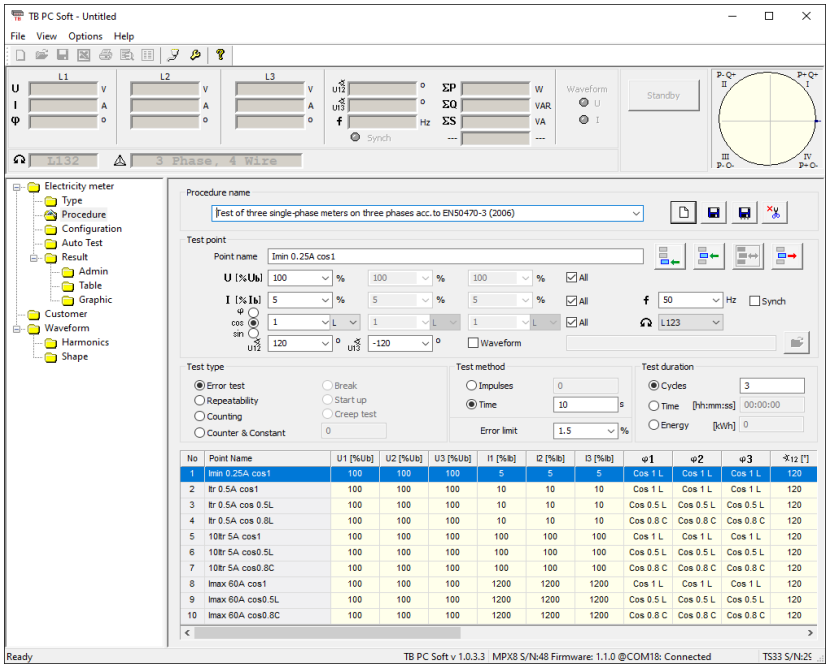
The TS33 Test System works as three-phase voltage, current source and reference meter.

To initiate the test, the user should perform the following steps in *TB PC-Soft*:

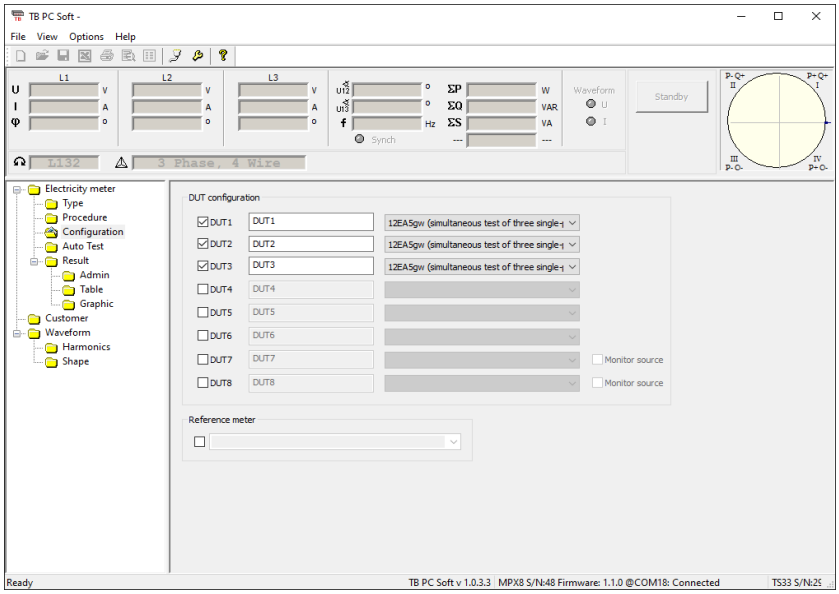
1. In *Type* function – set all parameters of the tested energy meters.
   Attention: Because the TS33 generates energy in three phases and the *Meter connection* field is set to *3 Phase, 4 wire,* the value of impulse constant entered in the *Meter constant* field must be divided by 3 (instead of 6400 imp/kWh, 2133.333333 imp/kWh is entered).



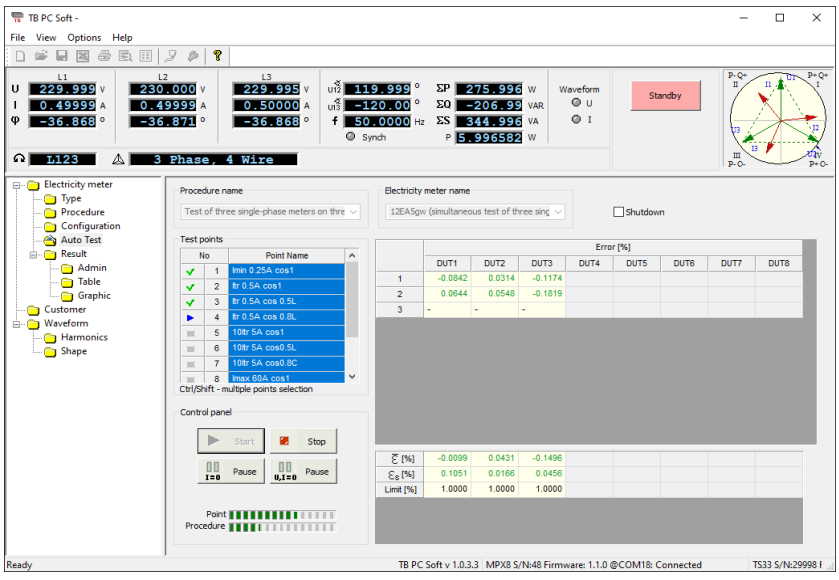
2. The *Procedure* function allows the user to prepare a set of load points acc. to requirements of standard (in this case acc. to EN 50470-3) or acc. to the individual requirements of the user.



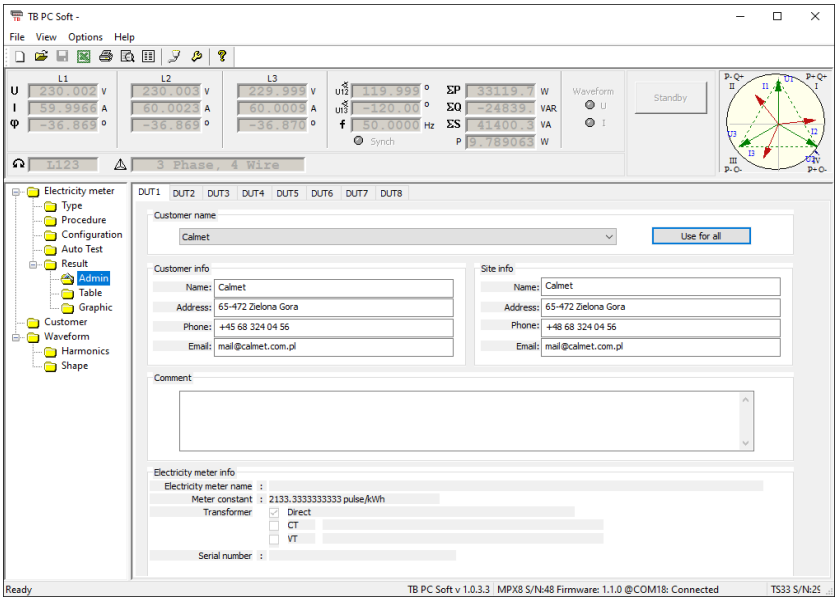
3. In *Configuration* function the specific type of energy meter, defined earlier, is assigned to the specific input of the MPX8 Multiplexer.



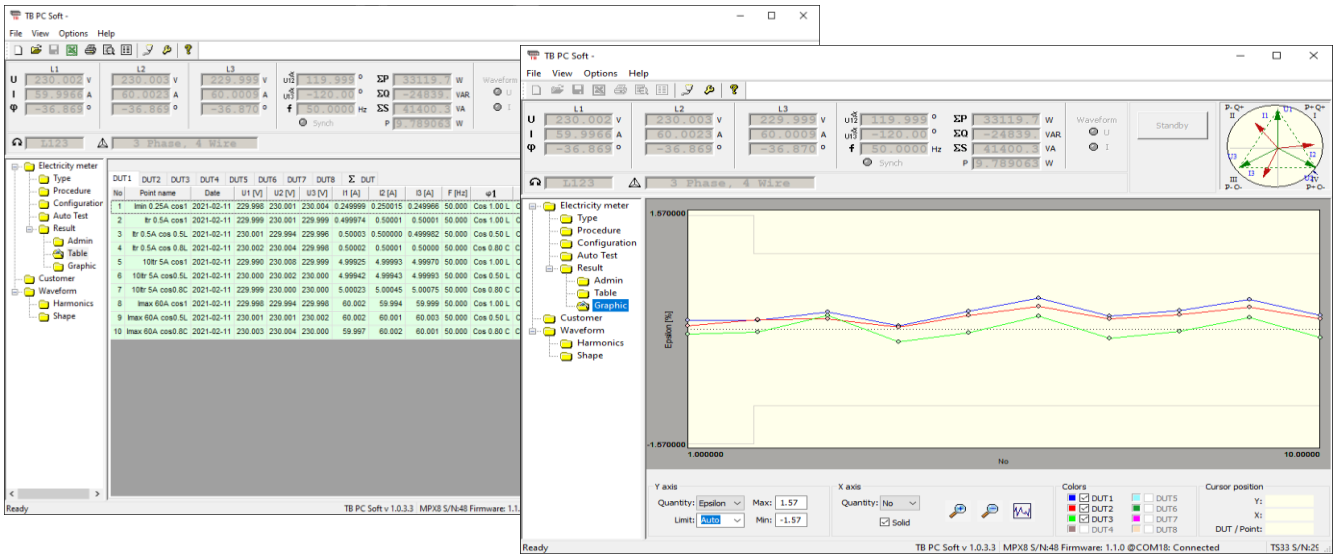
4. The *AutoTest* function takes the load points set acc. to the procedure and generates them automatically. For each load point, the accuracy of the energy meter under test is calculated.



5. In the *Result* function the administrative data for a measurement report is entered,



and the achieved results are presented in the form of a table and diagram.



6. The administrative data and results for each DUT can be exported to MS Excel in order to prepare a measurement report.