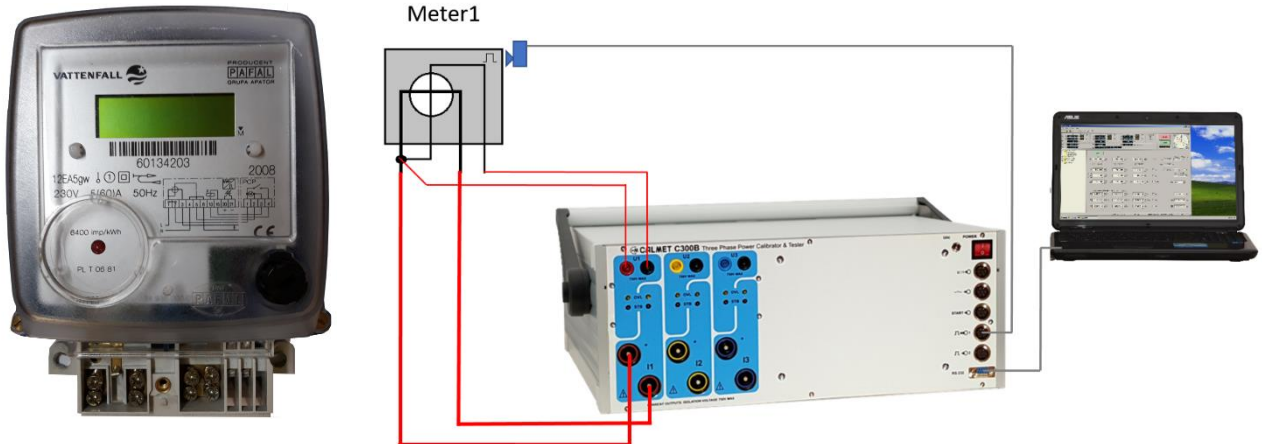


How to test 1 unit of single-phase energy meter using C300B Calibrator?

The measurement system consists of:

- **C300B** Three-phase power calibrator & tester;
- Laptop with installed **Calpro300** Software;
- Device under test – 1 unit of single-phase meter.

The test is performed in the measurement system presented below, where the energy meter under test (DUT) is connected to phase L1 of the C300B Calibrator:

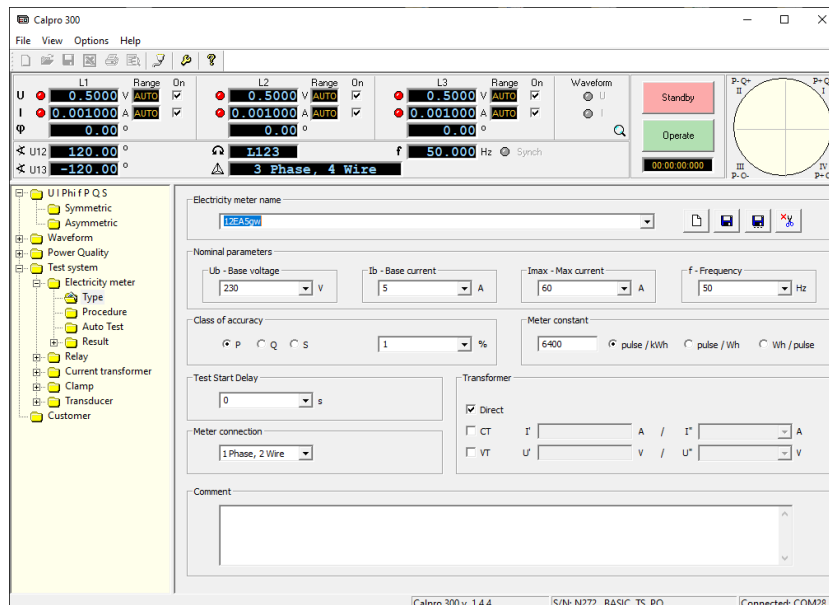


Front plate of meter under test

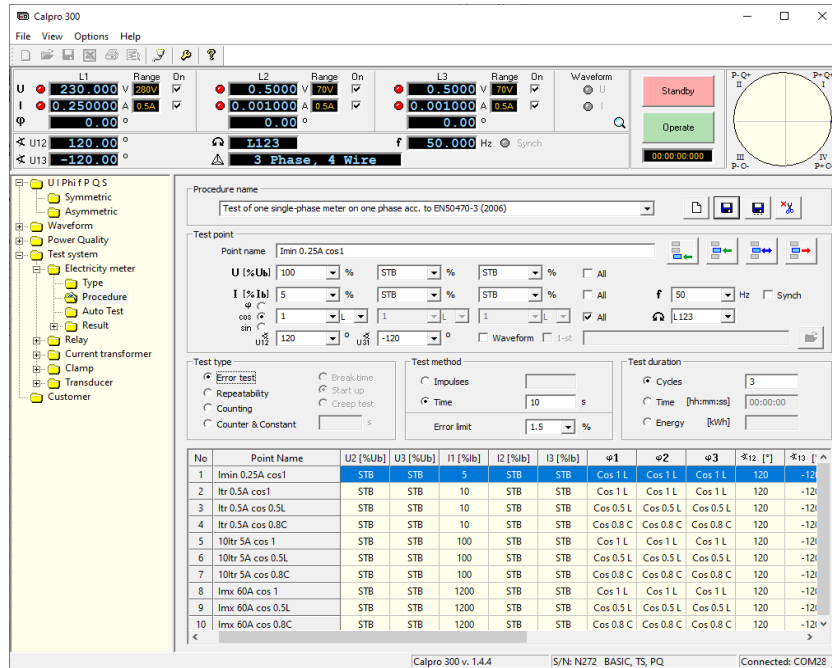
The C300B Calibrator works as three-phase voltage, current source and reference meter.

To initiate this test, the user should perform the following steps in *Calpro300* Software:

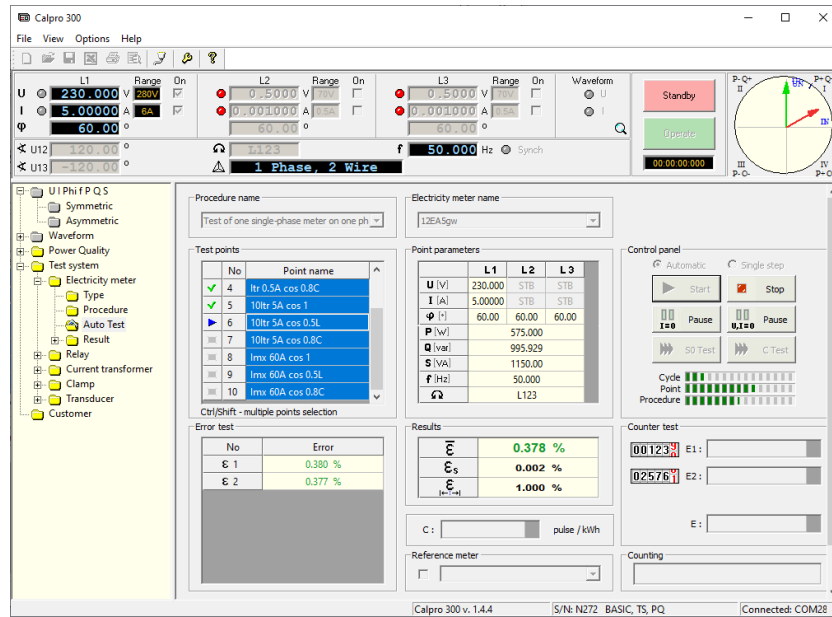
1. In *Type* function – set all parameters of the tested energy meter, such as: base voltage U_b , base current I_b , maximum current I_{max} , frequency f , class of accuracy, meter constant).
Attention: Because the DUT is a single-phase energy meter, please set the *Meter connection* field to *1 Phase, 2 Wire* (phase L2 and L3 will be in a stand-by state during the test).



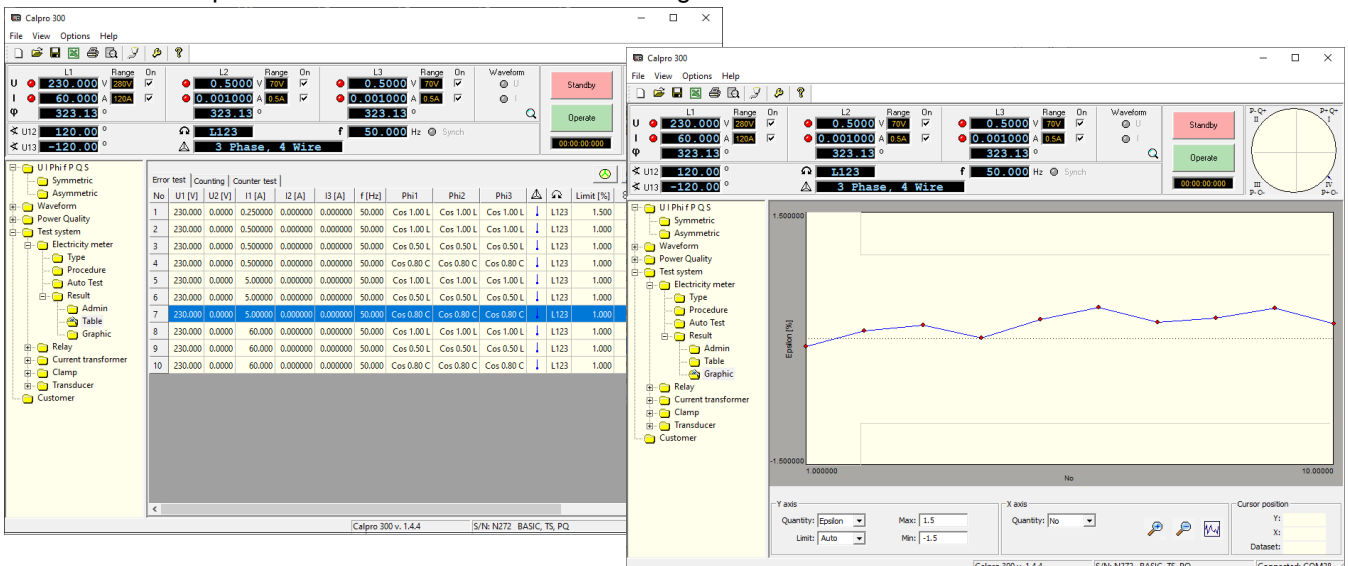
2. The *Procedure* function allows the user to prepare a set of load points acc. to requirements of standard (in this case acc. to EN 50470-3) or acc. to the individual requirements of the user.



3. 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.



4. 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.



- The administrative data and the results can be exported to MS Excel in order to prepare a measurement report.

The image shows two overlapping Excel spreadsheets. The background spreadsheet is titled 'Customer info' and contains the following data:

1	Customer info	
2	Name:	Calmet
3	Address:	65-472 Zielona Góra
4	Phone:	+45 68 324 04 56
5	Email:	mail@calmet.com.pl
6		
7	Site info	
8	Name:	Calmet
9	Address:	65-472 Zielona Góra
10	Phone:	+48 68 324 04 56
11	Email:	mail@calmet.com.pl
12		
13	Comment:	
14		
15	Electricity meter name:	12EA5gw
16	Meter connection:	Direct
17	Meter constant:	6400.0 pulse / kWh
18	Serial number:	12345
19		
20		

The foreground spreadsheet is titled 'Epsilon [%]' and contains the following data table:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
1	No	Date	U1 [V]	I1 [A]	f [Hz]	Phi1	Connection	Rotation	Limit [%]	Epsilon [%]	Epsilon0 [%]	U3 [V]	S [VA]	OK	e1 [%]	e2 [%]	e3 [%]
2	1	2021-02-22	230	0,25	50	Cos 1.00 L	1 Phase, 2 Wire	L123	1,5	-0,093	0,053	0	57,5	+	-0,046	-0,151	-0,082
3	2	2021-02-22	230	0,5	50	Cos 1.00 L	1 Phase, 2 Wire	L123	1	0,094	0,031	0	115	+	0,129	0,072	0,081
4	3	2021-02-22	230	0,5	50	Cos 0.50 L	1 Phase, 2 Wire	L123	1	0,161	0,039	0	115	+	0,117	0,176	0,19
5	4	2021-02-22	230	0,5	50	Cos 0.80 C	1 Phase, 2 Wire	L123	1	0,012	0,098	0	115	+	0,014	0,109	-0,086
6	5	2021-02-22	230	5	50	Cos 1.00 L	1 Phase, 2 Wire	L123	1	0,233	0,003	0	1150	+	0,23	0,234	0,235
7	6	2021-02-22	230	5	50	Cos 0.50 L	1 Phase, 2 Wire	L123	1	0,377	0,003	0	1150	+	0,38	0,377	0,373
8	7	2021-02-22	230	5	50	Cos 0.80 C	1 Phase, 2 Wire	L123	1	0,195	0,014	0	1150	+	0,208	0,18	0,197
9	8	2021-02-22	230	60	50	Cos 1.00 L	1 Phase, 2 Wire	L123	1	0,252	0,012	0	13800	+	0,257	0,261	0,239
10	9	2021-02-22	230	60	50	Cos 0.50 L	1 Phase, 2 Wire	L123	1	0,368	0,003	0	13800	+	0,366	0,372	0,367
11	10	2021-02-22	230	60	50	Cos 0.80 C	1 Phase, 2 Wire	L123	1	0,18	0,005	0	13800	+	0,178	0,185	0,176
12																	