**SCOPE 23 ЛК**

**Sofia, 30.08.2024**

**EMSYST-6 LTD.**

**CALIBRATION LABORATORY EMSYST**

**Management and Laboratory address:**

Bulgaria, 1784 Sofia, 133 Tsarigradsko Shosse Blvd, BIC IZOT, Office 304

**To perform calibrating of:**

| **Type of the scope:** *Fixed* | | | | | |
| --- | --- | --- | --- | --- | --- |
| **№** | **Measuring Instrument** | **Measure and, Measure**  **ment Unit** | **Measurement Range** | **Measurement**  **Uncertainty** | **Calibration Method** |
| **1** | **2** | **3** | **4** | **5** | **6** |
| 1. | Standard Electricity Meters, Electronic,  Single-Phase and Three-Phase  for Active Energy | Electrical Energy,  Active,  kWh | Per phase  From 1,25 Ws to 21,6.106 Ws  Voltage (U):  From 50 V to 300 V  Current (I):  from 0,05 A to 120 A  Power Factor:  From 1 to 0,5 lagging,  or from 1 to 0,8 leading  Time  from 1 s to 600 s | 0,020 %  at  cos phi=1  U ≤ 230 V | WI 7.6.1-1  № E-MK-01/20 |
| 0,025 %  at  cos phi=1  U > 230 V  and at  cos phi=0,5 i/  cos phi=0,8 c  U ≤ 230 V  I ≤ 12 A |
| 0,030 %  at  cos phi=0,5 i/  cos phi=0,8 c  I > 12 A |
| 2. | Standard Electricity Meters, Electronic,  Single-Phase and Three-Phase  for Reactive Energy | Electrical Energy, Reactive,  kvarh | Per phase  From 0,625 vars to 21,6.106 vars  Voltage (U)  from 50 V to 300 V  Current (I)  from 0,05 A to 120 A  Power Factor  From 1 to 0,25 lagging, or leading  Time from 1 s  to 600 s | 0,025 %  at  sin phi=1  U ≤ 230 V | WI 7.6.1-1  № Е-МК-01/20 |
| 0,030 %  at sin phi=1  U > 230 V  and at  sin phi=0,25 i/c  U ≤ 230 V  I ≤ 12 A |
| 0,035 %  at  sin phi=0,25 i/c  I > 12 A |
| 3. | Test Benches with Standard Electricity Meter for Metrological Verification of Electricity Meters, Single-Phase and  Three-Phase,  for Active and Reactive Energy | Electrical Energy,  Active,  kWh,  and Reactive, kvarh | For active energy, per phase  from 1,25 Ws to  21,6.106 Ws  Voltage (U)  From 50 V to 300 V  Current (I)  from 0,05 A to 120 A  Power Factor  from 1 to 0,5 lagging,  or from 1 to 0,8 leading  Time  from 1 s to 600 s | 0,020 %  at cos phi=1  U ≤ 230 V | WI 7.6.1-4  № ЕУ-МК-04/20 |
| 0,025 %  at  cos phi=1  U > 230 V  and at  cos phi=0,5 i/  cos phi=0,8 c  U ≤ 230 V  I ≤ 12 A |
| 0,030 %  at  cos phi=0,5 i/  cos phi=0,8 c  I > 12 A |
| For reactive energy per phase  From 0,625 vars to 21,6.106 vars  Voltage (U)  From 50 V to 300 V  Current (I)  from 0,05 A  to 120 A  Power Factor  from 1 to 0,25 lagging, or leading  Time  from 1 s to 600 s | 0,025 %  at sin phi=1  U ≤ 230 V |
| 0,030 %  at sin phi=1  U > 230 V  and at  sin phi=0,25 i/c  U ≤ 230 V  I ≤ 12 A |
| 0,035 %  at  sin phi=0,25 i/c  I > 12 A |
| 4. | Flow Meters and Portable Flow Meter Stations, Calibrated with Operating Fluid Water in the range from 0,006 m3/h to 70,00 m3/h | Volume, m3 | From 0,001 m3  to 0,3 m3  (at the range  from 0,006 m3/h  to 30,0 m3/h)  (at the range  from 30,0 m3/h  to 70,0 m3/h) | 0,10 %  0,20% | WI 7.6.1–2  № P-MK-01/20 |

**References:**

1. Wl 7.6.1-1 № E-MK-01/20 Calibration Methodology for Standard Electronic Electricity Meters, validated on 17.07.2020;

2. Wl 7.6.1-4 № ЕУ-МК-04/20 Calibration Methodology for Test Benches with a Standard Electricity Meter for Metrological Verification of single-phase and three-phase electricity meters for active and reactive energy, validated on 18.06.2024;

3. Wl 7.6.1-2 № P-MK-01/20 Calibration Methodology for Flow Meters and Portable Flow Meter Stations, validated on 03.09.2020.

***Note:***

*The calibrations of measurement instruments for positions 1, 2 and 3 shall be carried out in the Laboratory premises, and on the customer’s site.*

*The calibrations of measurement instruments for position 4 shall be carried out only in the Laboratory premises.*