**SCOPE 23 ЛК**

**Sofia, 28.07.2025**

**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:** F*ixed* | | | | | |
| --- | --- | --- | --- | --- | --- |
| **№** | **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  at frequency 50 Hz | 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 ind, or from 1 to 0,8 cap  Time interval  from 1 s to 600 s | 0,020 %  at  cos φ = 1  U ≤ 230 V | WI 7.6.1-1  № E-MK-01/20 |
| 0,025 %  at  cos φ = 1  U>230 V  and at  cos φ =0,5 ind/ cos φ =0,8 cap  U ≤ 230 V  I ≤ 12 A |
| 0,030 % at  cos φ = 0,5 ind/  cos φ = 0,8 cap  I > 12 A |
| 2. | Standard Electricity Meters, Electronic, Single-Phase and Three-Phase for Reactive Energy  at frequency 50Hz | 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, ind or cap  Time interval  From 1s to 600s | 0,025 %  at  sin φ =1  U ≤ 230 V | WI 7.6.1-1  № E-MK-01/20 |
| 0,030 %  at  sin φ =1  U > 230 V,  and at  sin φ =0,25 ind/cap  U ≤ 230 V  I ≤ 12 A |
| 0,035 %  at  sin φ =0,25  ind/cap  I > 12 A |
| 3. | Test Benches with an Electronic Standard Electricity Meter for Metrological Verification of Electricity Meters, Single-Phase and Three-Phase, for Active and Reactive Energy  at frequency 50Hz | 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 ind, or from 1 to 0,8 cap  Time interval  from 1 s to 600 s | 0,020 % at  cos φ =1  U ≤ 230 V | WI 7.6.1-4  № EУ-МК-04/25 |
| 0,025 %  at cos φ =1  U > 230 V  and at  cos φ =0,5 ind/  cos φ =0,8 cap  U ≤ 230 V  I ≤ 12 A |
| 0,030 %  at  cos φ =0,5 ind/  cos φ =0,8 cap  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 ind or cap  Time interval  from 1 s to 600 s | 0,025 %  at  sin φ = 1  U ≤ 230 V |
| 0,030 %  at  sin φ = 1  U > 230 V  and at  sin φ = 0,25 ind/cap  U ≤ 230 V  I≤ 12 A |
| 0.035 %  at  sin φ =0,25 ind/cap  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. WI 7.6.1-1 № E-MK-01/20 Calibration Methodology for Standard Electronic Electricity Meters, validated on 17.07.2020;

2. WI 7.6.1-4 № ЕУ-МК-04/25 Calibration Methodology for Test Benches with an Electronic Standard Electricity Meter for Metrological Verification of single-phase and three-phase electricity meters for active and reactive energy, validated on 22.05.2025;

3. WI 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.*