**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 phaseFrom 1,25 Ws to 21,6.106 WsVoltage (U): From 50 V to 300 VCurrent (I):from 0,05 A to 120 APower Factor: From 1 to 0,5 lagging, or from 1 to 0,8 leadingTimefrom 1 s to 600 s | 0,020 %atcos phi=1U ≤ 230 V | WI 7.6.1-1№ E-MK-01/20 |
| 0,025 %atcos phi=1U > 230 Vand atcos phi=0,5 i/ cos phi=0,8 cU ≤ 230 VI ≤ 12 A |
| 0,030 %atcos phi=0,5 i/ cos phi=0,8 cI > 12 A |
| 2. | Standard Electricity Meters, Electronic, Single-Phase and Three-Phase for Reactive Energy | Electrical Energy, Reactive, kvarh | Per phaseFrom 0,625 vars to 21,6.106 varsVoltage (U) from 50 V to 300 VCurrent (I) from 0,05 A to 120 APower Factor From 1 to 0,25 lagging, or leadingTime from 1 sto 600 s | 0,025 %atsin phi=1U ≤ 230 V | WI 7.6.1-1№ Е-МК-01/20 |
| 0,030 %at sin phi=1U > 230 Vand atsin phi=0,25 i/cU ≤ 230 VI ≤ 12 A |
| 0,035 %atsin phi=0,25 i/cI > 12 A |
| 3. | Test Benches with Standard Electricity Meter for Metrological Verification of Electricity Meters, Single-Phase andThree-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 WsVoltage (U) From 50 V to 300 VCurrent (I) from 0,05 A to 120 APower Factorfrom 1 to 0,5 lagging, or from 1 to 0,8 leadingTimefrom 1 s to 600 s | 0,020 %at cos phi=1U ≤ 230 V | WI 7.6.1-4№ ЕУ-МК-04/20 |
| 0,025 %atcos phi=1U > 230 Vand atcos phi=0,5 i/ cos phi=0,8 c U ≤ 230 VI ≤ 12 A |
| 0,030 %atcos 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 varsVoltage (U) From 50 V to 300 VCurrent (I) from 0,05 A to 120 APower Factorfrom 1 to 0,25 lagging, or leadingTimefrom 1 s to 600 s | 0,025 %at sin phi=1U ≤ 230 V |
| 0,030 %at sin phi=1U > 230 Vand atsin phi=0,25 i/cU ≤ 230 VI ≤ 12 A |
| 0,035 %atsin phi=0,25 i/cI > 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 m3to 0,3 m3(at the rangefrom 0,006 m3/hto 30,0 m3/h)(at the rangefrom 30,0 m3/hto 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.*