**SCOPE 23 ЛК**

**Sofia, 25.01.2024**

**of EMSYST-6 LTD.**

**CALIBRATION LABORATORY EMSYST**

**Management and Laboratory address:**

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): from50 V to 300 VCurrent (I):from 0,05 Ato 120 APower Factor: from1 to 0,5 lagging, or from 1 to 0,8 leadingTimefrom 1 s to 600 s | 0,020 %forcos phi = 1U ≤ 230 V | WI 7.6.1-1№ E-MK-01/20 |
| 0,025 %forcos phi = 1U > 230 Vand forcos phi = 0,5 i/ cos phi = 0,8 cU ≤ 230 VI ≤ 12 A |
| 0,030 %forcos 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 from1 to 0,25 lagging, or leadingTime from 1 sto 600 s | 0,025 %forsin phi = 1U ≤ 230 V | WI 7.6.1-1№ Е-МК-01/20 |
| 0,030 %for sin phi = 1U > 230 Vand forsin phi = 0,25 i/cU ≤ 230 VI ≤ 12 A |
| 0,035 %forsin phi = 0,25 i/cI > 12 A |
| 3 | Fixtures with Standard Electronic 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 | Electrical Energy, Active per phase from 1,25 Ws to 21,6.106 WsVoltage (U) from50 V to 300 VCurrent (I) from 0,05 A to 120 APower Factor1 to 0,5 lagging, or from 1 to 0,8 leadingTimefrom 1 s to 600 s | 0,020 %for cos phi = 1U ≤ 230 V | WI 7.6.1-4№ ЕУ-МК-04/20 |
| 0,025 %forcos phi = 1U > 230 Vand forcos phi = 0,5 i/ cos phi = 0,8 c U ≤ 230 VI ≤ 12 A |
| 0,030 %forcos phi = 0,5 i/ cos phi = 0,8 c I > 12 A |
| Electrical Energy, Reactive per phase From 0.625 vars to 21,6.106 varsVoltage (U) from50 V to 300 VCurrent (I) from 0,05 A to 120 APower Factor1 to 0,25 lagging, or leadingTimefrom 1 s to 600 s | 0,025 %for sin phi = 1U ≤ 230 V |
| 0,030 %for sin phi = 1U > 230 Vand forsin phi = 0,25 i/cU ≤ 230 VI ≤ 12 A |
| 0,035 %forsin phi = 0,25 i/cI > 12 A |
| 4 | Flow Rate Meters and Portable Flow Rate Meter Stations, Using Water as Operating FluidWith range from 0,006 m3/hto 70,0 m3/h | Volume, m3 | From 0,001 m3to 0,3 m3For range:from 0,006 m3/hto 30,0 m3/hFor range:from 30,0 m3/hto 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 № EУ-МК-04/20 Calibration Methodology for Fixtures with a Standard Electricity Meter for Metrological Verification of single-phase and three-phase electricity meters for active and reactive energy, validated on 17.07.2020.
3. WI 7.6.1–2 № P-MK-01/20 Calibration Methodology for Flow Rate Meters and Portable Flow Rate Meter Stations, validated on 03.09.2020.

**Notes:**

For measurement instruments of positions 1, 2 and 3, the calibrations shall be carried out in the laboratory premises, and on the customer’s site.

For measurement instruments of position 4, the calibrations shall be carried out only in the laboratory premises.