**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 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 %  for  cos phi = 1  U ≤ 230 V | WI 7.6.1-1  № E-MK-01/20 |
| 0,025 %  for  cos phi = 1  U > 230 V  and for  cos phi = 0,5 i/ cos phi = 0,8 c  U ≤ 230 V  I ≤ 12 A |
| 0,030 %  for  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 %  for  sin phi = 1  U ≤ 230 V | WI 7.6.1-1  № Е-МК-01/20 |
| 0,030 %  for sin phi = 1  U > 230 V  and for  sin phi = 0,25 i/c  U ≤ 230 V  I ≤ 12 A |
| 0,035 %  for  sin phi = 0,25 i/c  I > 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 Ws  Voltage (U) from  50 V to 300 V  Current (I) from 0,05 A to 120 A  Power Factor  1 to 0,5 lagging, or from 1 to 0,8 leading  Time  from 1 s to 600 s | 0,020 %  for cos phi = 1  U ≤ 230 V | WI 7.6.1-4  № ЕУ-МК-04/20 |
| 0,025 %  for  cos phi = 1  U > 230 V  and for  cos phi = 0,5 i/ cos phi = 0,8 c  U ≤ 230 V  I ≤ 12 A |
| 0,030 %  for  cos 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 vars  Voltage (U) from  50 V to 300 V  Current (I) from 0,05 A to 120 A  Power Factor  1 to 0,25 lagging, or leading  Time  from 1 s to 600 s | 0,025 %  for sin phi = 1  U ≤ 230 V |
| 0,030 %  for sin phi = 1  U > 230 V  and for  sin phi = 0,25 i/c  U ≤ 230 V  I ≤ 12 A |
| 0,035 %  for  sin phi = 0,25 i/c  I > 12 A |
| 4 | Flow Rate Meters and Portable Flow Rate Meter Stations, Using Water as Operating Fluid  With range from 0,006 m3/h  to 70,0 m3/h | Volume, m3 | From 0,001 m3  to 0,3 m3  For range:  from 0,006 m3/h  to 30,0 m3/h  For 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 № 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.