



ORDER

№ A 297

Sofia, 11.05.2022

Pursuant to Art. 10, para. 1, item 4, Art. 28, para. 1 of the Law on National Accreditation of Conformity Assessment Bodies and item 6 of the BAS QR 2 Accreditation Procedure, in connection with an open procedure reg. № 39/14 ЛК/ПА/05.08.2021, assessment report reg. № 39/14 ЛК/ПА/5/В/17.02.2022, and Statement of the Accreditation Commission reg. № 39/14 ЛК/ПА/6/В/21.04.2022, I hereby

RE-ACCREDIT

**MICROSYST LTD,
Calibration Laboratory of Measuring Equipment**

Management address: 4002 Plovdiv, 57 Trakia Str.
Laboratory address: 4002 Plovdiv, 4 Murgash Str.

To perform calibrating of:

Range type: fixed					
№	Measuring instrument	Measured value, unit of measure	Measurement Range	Uncertainty of measurement	Calibration method
1	2	3	4	5	6
1	Calibrators and voltmeters for DC voltage	Electric voltage, volt (V)	0 V to 0,1 V	3,5.10 ⁻⁶ V to 8,5.10 ⁻⁶ V	MK 7.02 01-01:2020 direct and comparative method
			0,1 V to 10 V	8,5.10 ⁻⁶ V to 0,1.10 ⁻³ V	
			10 V to 750 V	0,1.10 ⁻³ V to 15.10 ⁻³ V	
	Calibrators and voltmeters for AC voltage, at industrial frequency		0,01 V to 10 V	15.10 ⁻⁶ V to 1,5.10 ⁻³ V	
			10 V to 750 V	1,5.10 ⁻³ V to 0,15 V	
	Calibrators and voltmeters for AC voltage at 1 kHz frequency		0,01 V to 10 V	33.10 ⁻⁶ V to 7.10 ⁻³ V	
			10 V to 750 V	7.10 ⁻³ V to 0,15 V	
2	Calibrators and Ammeters for DC Current.	Electric current, ampere (A)	0 A to 1.10 ⁻³ A	25.10 ⁻⁹ A to 0,1.10 ⁻⁶ A	MK 7.02 01-02:2020 direct and comparative method
			1.10 ⁻³ A to 0,1 A	0,1.10 ⁻⁶ A to 9.10 ⁻⁶ A	
			0,1 A to 2 A	9.10 ⁻⁶ A to 0,3.10 ⁻³ A	

Range type: fixed					
№	Measuring instrument	Measured value, unit of measure	Measurement Range	Uncertainty of measurement	Calibration method
1	2	3	4	5	6
	Calibrators and ammeters for AC Current, at industrial frequency		2.10 ⁻³ A to 0,1 A	3.10 ⁻⁶ A to 35.10 ⁻⁶ A	
			0,1 A to 2 A	35.10 ⁻⁶ A to 3.10 ⁻³ A	
	Calibrators and ammeters for AC Current, at 1kHz frequency		2.10 ⁻³ A to 0,1 A	4.10 ⁻⁶ A to 55.10 ⁻⁶ A	
			0,1 A to 2 A	55.10 ⁻⁶ A to 3.10 ⁻³ A	
3	DC resistance standards, DC resistance calibrators and DC resistance decade boxes	Electrical resistance, ohm (Ω)	0,01 Ω to 100 Ω	4.10 ⁻³ Ω to 12.10 ⁻³ Ω	MK 7.02 01-03:2018 direct method
			0,1 kΩ to 100 kΩ	12.10 ⁻⁶ kΩ to 3.10 ⁻³ kΩ	
			0,1 MΩ to 100 MΩ	от 3.10 ⁻⁶ MΩ to 0,2 MΩ	
4	Ohmmeters	Electrical resistance, ohm (Ω)	0,01 Ω to 100 kΩ	2.10 ⁻³ Ω to 7. 10 ⁻³ kΩ	MK 7.02 01-04:2020 direct method
			1 MΩ	0,4.10 ⁻³ MΩ	
			10 MΩ	2.10 ⁻³ MΩ	
			100 MΩ	0,24 MΩ	
5*	Converters with DCU and R input /temperature indicators/	Temperature, degrees Celsius (°C)	For thermistors: input: 0,01 Ω to 100 kΩ output: -200°C to 850 °C	0,06 °C	MK 7.02 01-05:2020 direct method
			For thermocouples: input: -50 mV to 150 mV output: -200 °C to 1 850 °C	0,2 °C	
	Converters with DCU input, DCI for temperature, relative humidity, pH, pressure /indicators with uniform input signal/	Temperature, degrees Celsius (°C)	-200 °C to 1 850 °C	0,2 °C	
		Relative humidity, %RH	0 % rh to 100 % rh	0,1 %rh	
		pH-hydrogen index	0 pH to 14 pH	0,001 pH	
		Pressure bar (bar)	-1 bar to 1 000 bar	1.10 ⁻⁵ bar to 1.10 ⁻³ bar	
	Secondary converters	Electric voltage, volt	input: 0 V DC to	15.10 ⁻⁶ V DC to 0,5.10 ⁻³ V DC	

Range type: fixed					
Nº	Measuring instrument	Measured value, unit of measure	Measurement Range	Uncertainty of measurement	Calibration method
1	2	3	4	5	6
	with input DCU, DCI, R and ACU, ACI at industrial frequency and with output DCU, DCI	(V)	750 V DC output: 0 V DC to 11 V DC		
		Electric current, ampere (A)	input: 0 V DC to 750 V DC output: 0 mA DC to 100 mA DC	4. 10^{-3} mA DC to 15. 10^{-3} mA DC	
		Electric voltage, volt (V)	input: 0.01 V AC to 750 VAC output: 0 V DC to 11 V DC	25. 10^{-6} V DC to 0,5. 10^{-3} V DC	
		Electric current, ampere (A)	input: 0.01 V AC to 750 V AC output: 0 mA DC to 100 mA DC	1. 10^{-3} mA DC to 0,2 mA DC	
		Electric voltage, volt (V)	input: 0 A DC to 2 A DC output: 0 V DC to 11 V DC	15. 10^{-6} V DC to 0,5. 10^{-3} V DC	
		Electric current, ampere (A)	input: 0 A DC to 2 A DC output: 0 mA DC to 100 mA DC	4. 10^{-3} mA DC to 15. 10^{-3} mA DC	
		Electric voltage, volt (V)	input: 2. 10^{-3} A AC to 2 A AC output: 0 V DC to 11 V DC	25. 10^{-6} V DC to 0,5. 10^{-3} V DC	
		Electric current, ampere (A)	input: 2. 10^{-3} A AC to 2 A AC output: 0 mA DC to 100 mA DC	2. 10^{-3} mA DC to 0,2 mA DC	
		Electric voltage, volt (V)	input: 0,01 Ω to 100 k Ω output: 0 V DC to 11 V DC	18. 10^{-6} V DC to 0,5. 10^{-3} V DC	
		Electric current, ampere (A)	input: 0,01 Ω to 100 k Ω output: 0 mA DC to 100 mA DC	0,1. 10^{-3} mA DC to 9. 10^{-3} mA DC	
	DCU, DCI and R calibrators for non-electrical values simulation	Electric voltage, volt (V)	0 V to 11 V DC	3,5. 10^{-6} V DC to 0,15. 10^{-3} V DC	
		Electric current, ampere (A)	0 A to 0,1 A DC	25. 10^{-9} A DC to 9. 10^{-6} A DC	

Range type: <i>fixed</i>					
Nº	Measuring instrument	Measured value, unit of measure	Measurement Range	Uncertainty of measurement	Calibration method
1	2	3	4	5	6
		Electric resistance, ohm (Ω)	1 Ω to 4 $\cdot 10^3 \Omega$	5 $\cdot 10^{-3} \Omega$ to 0,11 Ω	
6	Digital thermometers	Temperature, degrees Celsius ($^{\circ}\text{C}$)	-45 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$	0,05 $^{\circ}\text{C}$	MK 7.02 01-06:2018 comparative method
			150 $^{\circ}\text{C}$ to 300 $^{\circ}\text{C}$	0,05 $^{\circ}\text{C}$ to 0,15 $^{\circ}\text{C}$	
			300 $^{\circ}\text{C}$ to 650 $^{\circ}\text{C}$	0,15 $^{\circ}\text{C}$ to 0,7 $^{\circ}\text{C}$	
7	Relative humidity meters (hygrometers).	Relative humidity, (%RH)	10 %rh to 90 %rh	1,5 %rh to 1,8 %rh	MK 7.02 01-07:2019 comparative method
8	Thermometers (analogue and liquid)	Temperature, degrees Celsius ($^{\circ}\text{C}$)	-45 $^{\circ}\text{C}$ to 650 $^{\circ}\text{C}$	0,1 $^{\circ}\text{C}$ to 0,7 $^{\circ}\text{C}$	MK 7.02 01-08:2018 comparative method
9	Thermocouples	Temperature, degrees Celsius ($^{\circ}\text{C}$)	-45 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$	0,4 $^{\circ}\text{C}$	MK 7.02 01-09:2018 direct method
			150 $^{\circ}\text{C}$ to 300 $^{\circ}\text{C}$	0,4 $^{\circ}\text{C}$ to 0,6 $^{\circ}\text{C}$	
			300 $^{\circ}\text{C}$ to 650 $^{\circ}\text{C}$	0,6 $^{\circ}\text{C}$ to 0,9 $^{\circ}\text{C}$	
10	Platinum resistance thermometers	Temperature, degrees Celsius ($^{\circ}\text{C}$)	-45 $^{\circ}\text{C}$ to 150 $^{\circ}\text{C}$	0,05 $^{\circ}\text{C}$	MK 7.02 01-10:2018 direct method
			150 $^{\circ}\text{C}$ to 300 $^{\circ}\text{C}$	0,05 $^{\circ}\text{C}$ to 0,15 $^{\circ}\text{C}$	
			300 $^{\circ}\text{C}$ to 650 $^{\circ}\text{C}$	0,15 $^{\circ}\text{C}$ to 0,7 $^{\circ}\text{C}$	
11*	Pressure gauges, vacuum gauges, pressure-vacuum gauges, calibrators, pressure transmitters with uniform output signal.	Pressure bar (bar) operation medium - gas	-0,95 bar to 1,5 bar	1 $\cdot 10^{-3}$ bar	MK 7.02 01-11:2020 direct and comparative method
			0 bar to 35 bar	5 $\cdot 10^{-3}$ bar to 15 $\cdot 10^{-3}$ bar	
		Pressure bar (bar) operation medium - fluid	0 bar to 400 bar	0,2 bar	

* At the calibration of converters with unified input or output signal under item 5 and item 11, electrical signals are used:

- for DCI in the range: 0 mA DC to 20 mA DC
- for DCU in the range: 0 V DC to 10 V DC

**The calibration of measuring instruments is carried out in the calibration laboratory premises or on-site at the customer.

References:

- 1.MK 7.02 01-01:2020 - Procedure for calibration of voltmeters and calibrators for DC and AC voltage.
- 2.MK 7.02 01-02:2020 - Procedure for calibration of ammeters and calibrators for DC and AC current
- 3.MK 7.02 01-03:2018 - Procedure for calibration of DC resistance standards, DC resistance calibrators and DC resistance decade boxes.

- 4.MK 7.02 01-04:2020 - Procedure for calibration of ohmmeters.
5.MK 7.02 01-05 :2020 - Procedure for calibration of secondary converters with DCU, ACU, DCI, ACI and resistance input, and with DCU, DCI and resistance output.
6.MK 7.02 01-06:2018 - Procedure for calibration of digital thermometers.
7.MK 7.02 01-07:2019 - Procedure for calibration of Relative humidity meters, sensor-transmitters for relative humidity in an air chamber.
8.MK 7.02 01-08:2018 - Procedure for calibration of analogue and liquid thermometers.
9.MK 7.02 01-09:2018 - Procedure for calibration of thermocouples.
10.MK 7.02 01-10:2018 - Procedure for calibration of Platinum resistance thermometers.
11.MK 7.02 01-11:2020 - Procedure for calibration of pressure measuring and generating devices (vacuum gauges, manometers, pressure transmitters, pressure calibrators)

I ORDER

To issue the Certificate of accreditation reg. № 14 ЛК of 11.05.2022 valid until 11.05.2026 and this order enclosed as an integral part of it.

The Certificate of accreditation with the enclosure should be obtained from the manager of MICROSYST Ltd., the head of Calibration Laboratory at MICROSYST Ltd. or other authorized person in the office of EA BAS.

Upon receipt of the certificate issued and enclosure, the accredited CAB is obliged to return to EA BAS the originals of Certificate of accreditation reg. № 14 ЛК/15.12.2020 and its enclosure, EA BAS order reg. № A 768/15.12.2020.

This order shall be notified to the legal entity within 3 (three) days from its issuance.

Eng. Irena Borislavova

Executive Director of EA BAS

