EA MLA Signatory
Český institut pro akreditaci, o.p.s.
Olšanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

CERTIFICATE OF ACCREDITATION

No. **325/2024**

MEROS, spol. s r.o.
with registered office Starozuberská 1453, 756 54 Zubří,
Company Registration No. 42866014

for the Calibration Laboratory No. **2249**
MEROS Calibration Laboratory

Scope of accreditation:

Calibration in the fields of length, speed, pressure, temperature, air humidity, electrical quantities, optical quantities, time and frequency to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2018

In its activities performed within the scope and for the period of validity of this Certificate, the Conformity Assessment Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Accredited Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 236/2023 of 11. 5. 2023, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **8. 7. 2029**

Prague: 8. 7. 2024

Český institut pro akreditaci, o.p.s. -3-

Jan Velíšek
Director of the Department
of Testing and Calibration Laboratories
Czech Accreditation Institute

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

MEROS, spol. s r.o.
CAB number 2249, MEROS Calibration Laboratory
Starozuberská 1453, 756 54 Zubří

CMC for the field of measured quantity: Length

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
1	Parallel gauge blocks	0.5	mm	to 100	mm		(1 L + 0.1) µm	Mechanical comparison with a standard using a comparator	MKGD KM.2	
2	Slide gauges	0	mm	to 500	mm		(8 L + 10) µm	Comparison with parallel gauge blocks and rings	MKGD PM.2	
3	Micrometers	0	mm	to 100	mm		(1 L + 2.5) µm	Comparison with parallel gauge blocks	MKGD MM.2	
4	Deviation meters	0	mm	to 30	mm	division 0.01 mm	(1 L + 2.5) µm	Direct measurement on a calibration instrument for indicators	MKGD UM.2	
		0	mm	to 30	mm	division 0.001 mm	(1 L + 1) µm			
5	Cylindrical gauges	0.5	mm	to 50	mm		(1 L + 2.5) µm	Direct measurement by a passameter	MKGD VK.1	
6	Feeler gauges	0.02	mm	to 2	mm		(1 L + 2.5) µm	Direct measurement by a micrometer	MKGD LS.1	
7	Steel tape measures	0	mm	to 3,000	mm		(20 L + 100) µm	Comparison with a steel rule	MKGD SM.1	
		3,000	mm	to 5,000	mm		(50 L + 200) µm			
	Steel rules	0	mm	to 1,000	mm		(20 L + 100) µm			
8	Tape measures	0	mm	to 5,000	mm		0.4 mm	Comparison with a tape measure	MKGD SM.1	
		5,000	mm	to 20,000	mm		0.6 mm			
		20,000	mm	to 30,000	mm		0.8 mm			

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[2] The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

[3] If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

L = length in metres

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CMC for the field of measured quantity: Rotational speed

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit		max	unit	Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
1*	Analogue, digital and proximity revolution counters, induction revolution counters, rpm sensors, stroboscopes	1 min^{-1}		to	100,000 min^{-1}			$1.0 \cdot 10^{-6}$	Simulation by AC voltage	MKF-O1	
		1 min^{-1}		to	60 min^{-1}			0.00020 min^{-1}	Simulation by an optical transducer	MKF-O1	
		60 min^{-1}		to	100,000 min^{-1}			$1.5 \cdot 10^{-6}$			
		1 min^{-1}		to	5 min^{-1}			0.25 %	Direct generation by a speed standard – contact and non-contact method	MKF-O1	
		5 min^{-1}		to	20 min^{-1}			0.070 %			
		20 min^{-1}		to	10,000 min^{-1}			0.0060 %			
		1 min^{-1}		to	60 min^{-1}		measurement time at least 4 min	0.11 %	Comparison with a reference stopwatch	MKF-O1	

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CMC for the field of measured quantity: Pressure, mechanical stress

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit		Nominal range max	unit	Parameter(s) of the measurand		Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
1*	Deformation and digital manometers, pressure transducers, differential pressure measuring chains	0 kPa	to		1 kPa		Gauge pressure	gas	0.1 % + 0.0015 kPa	Comparison with a digital manometer	MKMP TL.2	
		1 kPa	to		10 kPa				0.04 % + 0.004 kPa			
		10 kPa	to		200 kPa				0.05 % + 0.03 kPa			
		200 kPa	to		600 kPa				0.06 % + 0.05 kPa			
		600 kPa	to		2,000 kPa				0.07 % + 0.11 kPa			
		0 kPa	to		1 kPa		Vacuum	gas	0.1 % + 1.5 Pa			
		1 kPa	to		90 kPa				0.05 % + 13 Pa			
		0 MPa	to		2 MPa		Gauge pressure	liquid	0.05 % + 0.3 kPa			
		2 MPa	to		10 MPa				0.06 % + 1 kPa			
		10 MPa	to		25 MPa				0.05 % + 5 kPa			
		25 MPa	to		60 MPa				0.06 % + 9 kPa			
		5 kPa	to		2,000 kPa		Absolute pressure	gas	0.05 % + 0.3 kPa			
		2,000 kPa	to		10,000 kPa		Absolute pressure	liquid	0.07 % + 1.2 kPa			
		10,000 kPa	to		25,000 kPa				0.06 % + 4 kPa			
		500 hPa	to		1,100 hPa		Barometric pressure		0.4 hPa			

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CMC for the field of measured quantity: Temperature

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
1*	Resistance thermometers	-80 °C	to	-30 °C			0.12 °C	Comparison with a resistance temperature sensor in a liquid bath	MKTT OT.2	
		-30 °C	to	0 °C			0.08 °C			
				0 °C			0.05 °C			
		0 °C	to	150 °C			0.07 °C			
		150 °C	to	260 °C			0.08 °C			
		260 °C	to	420 °C			0.4 °C	Comparison with a resistance temperature sensor in a calibrating oven		
		420 °C	to	660 °C			0.65 °C			
2	Thermocouple temperature sensors	-80 °C	to	420 °C			0.5 °C	Comparison with a resistance temperature sensor in a calibrating oven	MKTT TE.2	
		420 °C	to	660 °C			0.7 °C			
		660 °C	to	1,100 °C			1.5 °C	Comparison with thermoelectric temperature sensor in a horizontal furnace		
		1,100 °C	to	1,300 °C			2.0 °C			
3	Electronic thermometers	-80 °C	to	-20 °C			0.12 °C	Comparison with a resistance temperature sensor in a liquid bath	MKTT ET.2	
		-20 °C	to	0 °C			0.08 °C			
				0 °C			0.05 °C			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
		0 °C	to	150 °C			0.07 °C			
		150 °C	to	260 °C			0.08 °C			
		260 °C	to	420 °C			0.4 °C	Comparison with a resistance temperature sensor in a calibrating oven		
		420 °C	to	660 °C			0.65 °C			
		660 °C	to	1,000 °C			1.4 °C	Comparison with thermoelectric temperature sensor in a horizontal furnace	MKTT ET.2	
		1,000 °C	to	1,100 °C			1.5 °C			
		1,100 °C	to	1,300 °C			2.0 °C			
4	Glass thermometers	-40 °C	to	-20 °C			0.12 °C	Comparison with a resistance temperature sensor in a liquid bath	MKTT ST.2	
		-20 °C	to	200 °C			0.07 °C			
		200 °C	to	300 °C			0.15 °C			
5	Non-contact thermometers	-20 °C	to	300 °C			1.2 °C	Comparison with a standard black body	MKTT PR.1	
		300 °C	to	1,100 °C			0.6 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
6	Temperature measuring chains with thermocouple type B, C, D, E, J, K, N, R, T, S, resistance thermometers, voltage and current output of transducers	-200 °C -100 °C 100 °C	to to to	-100 °C 100 °C 1,800 °C			0.1 % 0.1 °C 0.1 %	Comparison with a calibrator or electrical measurement with a multimeter	MKTT TX.1	

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CMC for the field of measured quantity: Air humidity

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
1*	Relative humidity / Humidity meters	5 % RH	to	10 % RH		(18 to 28) °C	2.4 % RH	Comparison with a humidity meter in a climatic chamber	MKRV.I	
		10 % RH	to	30 % RH			1.2 % RH			
		30 % RH	to	70 % RH			1.3 % RH			
		70 % RH	to	95 % RH			1.4 % RH			
		5 % RH	to	50 % RH		(10 to 18) and (28 to 40) °C	1.8 % RH			
		50 % RH	to	95 % RH			2.4 % RH			
		5 % RH	to	50 % RH		(40 to 70) °C	2.8 % RH			
		50 % RH	to	95 % RH			3.6 % RH			

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CMC for the field of measured quantity: Electrical quantities

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
1*	DC Voltage / Power supplies, calibrators, inspection instruments	0 mV	to	1 mV			0.50 µV	Direct measurement using a multimeter	MKE-USS1, MKE-SRP.1	
		1 mV	to	10 mV			0.032 %			
		10 mV	to	100 mV			0.0040 %			
		100 mV	to	1 V			0.0008 %			
		1 V	to	1.9 V			0.0005 %			
		1.9 V	to	7 V			0.0007 %			
		7 V	to	19 V			0.0005 %			
		19 V	to	50 V			0.0008 %			
		50 V	to	190 V			0.0007 %			
		190 V	to	1,000 V			0.0009 %			
				1,000 V			0.0007 %			
2*	Direct-current voltage/ voltmeters, multimeters and inspection equipment	1 mV	to	10 mV			0.060 %	Direct generation with a calibrator	MKE-USS1, MKE-SRP.1	
		10 mV	to	100 mV			0.0065 %			
		100 mV	to	220 mV			0.0015 %			
		220 mV	to	2.2 V			0.0012 %			
		2.2 V	to	22 V			0.0007 %			
		22 V	to	1,000 V			0.0010 %			
3*	AC Voltage / Power supplies, calibrators, inspection instruments	2 mV	to	10 mV		10 Hz to 10 kHz	0.40 %	Direct measurement using a multimeter	MKE-UST.1, MKE-SRP.1	
						10 kHz to 30 kHz	0.80 %			
						30 kHz to 100 kHz	1.7 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
		10 mV	to	20 mV		10 Hz to 100 Hz	0.080 %			
						100 Hz to 2 kHz	0.065 %			
						2 kHz to 10 kHz	0.080 %			
						10 kHz to 30 kHz	0.14 %			
						30 kHz to 100 kHz	0.32 %			
		20 mV	to	50 mV		10 Hz to 100 Hz	0.050 %			
						100 Hz to 2 kHz	0.045 %			
						2 kHz to 10 kHz	0.050 %			
						10 kHz to 30 kHz	0.090 %			
						30 kHz to 100 kHz	0.20 %			
		50 mV	to	100 mV		10 Hz to 100 Hz	0.035 %			
						100 Hz to 10 kHz	0.030 %			
						10k Hz to 30 kHz	0.060 %			
						30 kHz to 100 kHz	0.13 %			
		100 mV	to	190 mV		10 Hz to 100 Hz	0.030 %			
						100 Hz to 10 kHz	0.025 %			
						10 kHz to 30 kHz	0.050 %			
						30 kHz to 100 kHz	0.11 %			
		190 mV	to	500 mV		10 Hz to 40 Hz	0.026 %			
						40 Hz to 100 Hz	0.023 %			
						100 Hz to 2 kHz	0.020 %			
						2 kHz to 10 kHz	0.022 %			
						10 kHz to 30 kHz	0.047 %			
						30 kHz to 100 kHz	0.17 %			
						100 kHz to 300 kHz	1.4 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
		500 mV	to	1 V		10 Hz to 40 Hz	0.019 %			
						40 Hz to 100 Hz	0.015 %			
						100 Hz to 2 kHz	0.013 %			
						2 kHz to 10 kHz	0.014 %			
						10 kHz to 30 kHz	0.030 %			
						30 kHz to 100 kHz	0.10 %			
						100 kHz to 300 kHz	0.75 %			
		1 V	to	1.9 V		10 Hz to 40 Hz	0.016 %			
						40 Hz to 100 Hz	0.013 %			
						100 Hz to 2 kHz	0.010 %			
						2 kHz to 10 kHz	0.012 %			
						10 kHz to 30 kHz	0.026 %			
						30 kHz to 100 kHz	0.082 %			
						100 kHz to 300 kHz	0.55 %			
		1.9 V	to	5 V		10 Hz to 40 Hz	0.026 %			
						40 Hz to 100 Hz	0.022 %			
						100 Hz to 2 kHz	0.019 %			
						2 kHz to 10 kHz	0.022 %			
						10 kHz to 30 kHz	0.045 %			
						30 kHz to 100 kHz	0.17 %			
						100 kHz to 300 kHz	1.4 %			
		5 V	to	10 V		10 Hz to 40 Hz	0.018 %			
						40 Hz to 100 Hz	0.015 %			
						100 Hz to 2 kHz	0.013 %			
						2 kHz to 10 kHz	0.017 %			
						10 kHz to 30 kHz	0.032 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
						30 kHz to 100 kHz	0.11 %			
						100 kHz to 300 kHz	0.80 %			
		10 V		to	19 V	10 Hz to 40 Hz	0.016 %			
						40 Hz to 100 Hz	0.013 %			
						100 Hz to 2 kHz	0.010 %			
						2 kHz to 10 kHz	0.013 %			
						10 kHz to 30 kHz	0.027 %			
						30 kHz to 100 kHz	0.080 %			
						100 kHz to 300 kHz	0.55 %			
		19 V		to	50 V	10 Hz to 40 Hz	0.026 %			
						40 Hz to 100 Hz	0.022 %			
						100 Hz to 2 kHz	0.020 %			
						2 kHz to 10 kHz	0.021 %			
						10 kHz to 30 kHz	0.045 %			
						30 kHz to 100 kHz	0.16 %			
		50 V		to	100 V	10 Hz to 40 Hz	0.019 %			
						40 Hz to 100 Hz	0.015 %			
						100 Hz to 2 kHz	0.013 %			
						2 kHz to 10 kHz	0.015 %			
						10 kHz to 30 kHz	0.031 %			
						30 kHz to 100 kHz	0.11 %			
		100 V		to	190 V	10 Hz to 40 Hz	0.017 %			
						40 Hz to 100 Hz	0.013 %			
						100 Hz to 2 kHz	0.011 %			
						2 kHz to 10 kHz	0.012 %			
						10 kHz to 30 kHz	0.026 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
						30 kHz to 100 kHz	0.078 %			
		190 V	to	500 V		40 Hz to 10 kHz	0.032 %			
						10 kHz to 30 kHz	0.070 %			
				500 V		40 Hz to 10 kHz	0.023 %			
						10 kHz to 30 kHz	0.055 %			
		500 V	to	1,000 V		40 Hz to 10 kHz	0.040 %			
						10 kHz to 30 kHz	0.16 %			
4*	Alternating-current voltage / Voltmeters, multimeters, inspection equipment	1 mV	to	2.2 mV		10 Hz to 50 kHz	0.60 %	Direct generation with a calibrator	MKE-UST1, MKE-SRP.1	
						50 kHz to 100 kHz	0.80 %			
		2.2 mV	to	10 mV		10 Hz to 100 kHz	0.32 %			
		10 mV	to	22 mV		10 Hz to 40 Hz	0.090 %			
						40 Hz to 20 kHz	0.067 %			
						20 kHz to 50 kHz	0.082 %			
						50 kHz to 100 kHz	0.13 %			
		22 mV	to	100 mV		10 Hz to 40 Hz	0.095 %			
						40 Hz to 20 kHz	0.050 %			
						20 kHz to 50 kHz	0.066 %			
						50 kHz to 100 kHz	0.15 %			
						100 kHz to 300 kHz	0.23 %			
		100 mV	to	220 mV		10 Hz to 40 Hz	0.048 %			
						40 Hz to 20 kHz	0.019 %			
						20 kHz to 50 kHz	0.033 %			
						50 kHz to 100 kHz	0.076 %			
						100 kHz to 300 kHz	0.14 %			

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		min	unit	max	unit					
		220 mV	to	1 V		10 Hz to 40 Hz	0.053 %			
						40 Hz to 20 kHz	0.011 %			
						20 kHz to 50 kHz	0.016 %			
						50 kHz to 100 kHz	0.033 %			
						100 kHz to 300 kHz	0.093 %			
		1 V	to	2.2 V		10 Hz to 40 Hz	0.039 %			
						40 Hz to 20 kHz	0.008 %			
						20 kHz to 50 kHz	0.012 %			
						50 kHz to 100 kHz	0.019 %			
						100 kHz to 300 kHz	0.070 %			
		2.2 V	to	22 V		10 Hz to 40 Hz	0.060 %			
						40 Hz to 20 kHz	0.008 %			
						20 kHz to 50 kHz	0.015 %			
						50 kHz to 100 kHz	0.023 %			
						100 kHz to 300 kHz	0.065 %			
		22 V	to	220 V		10 Hz to 40 Hz	0.055 %			
						40 Hz to 20 kHz	0.010 %			
						20 kHz to 50 kHz	0.015 %			
						50 kHz to 100 kHz	0.031 %			
		220 V	to	1,000 V		50 Hz to 1 kHz	0.011 %			
5*	Peak-to-peak value of square wave AC voltage / Oscilloscopes					10 Hz to 100 kHz		Direct generation with a calibrator	MKE-UST1	
		1 mV	to	2 mV			0.30 % + 10 µV			
		2 mV	to	100 mV			0.20 % + 10 µV			
		100 mV	to	220 V			0.15 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
6*	AC current / Power supplies, calibrators, inspection instruments	1 nA	to	2 nA			0.40 %	Direct measurement with a picoammeter	MKE-ISS1, MKE-SRP.1	
		2 nA	to	50 nA			0.30 %			
		50 nA	to	200 nA			0.20 %			
		200 nA	to	1 µA			0.25 %			
		1 µA	to	20 µA			0.011 %	Direct measurement with a multimeter or indirect measurement with a shunt multimeter	MKE-ISS1, MKE-SRP.1	
		20 µA	to	20 mA			0.0040 %			
		20 mA	to	0.1 A			0.011 %			
		0.1 A	to	1 A			0.0040 %			
		1 A	to	2 A			0.0060 %			
		2 A	to	60 A			0.011 %			
		60 A	to	200 A			0.015 %			
		200 A	to	600 A			0.040 %			
		600 A	to	2,000 A			0.10 %			
7*	DC current / Ammeters, multimeters, clamp meters, inspection instruments	1 nA	to	2 nA			0.40 %	Direct comparison with a picoammeter	MKE-ISS1, MKE-SRP.1	
		2 nA	to	50 nA			0.30 %			
		50 nA	to	200 nA			0.20 %			
		200 nA	to	1 µA			0.25 %			
		1 µA	to	20 µA			0.011 %	Direct comparison using a multimeter or indirect comparison	MKE-ISS1, MKE-SRP.1	

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
								using a shunt multimeter		
		20 µA	to	20 mA			0.0040 %			
		20 mA	to	0.1 A			0.011 %			
		0.1 A	to	1 A			0.0040 %			
		1 A	to	2 A			0.0060 %			
		2 A	to	60 A			0.011 %			
		60 A	to	200 A			0.015 %			
		200 A	to	600 A			0.040 %			
		600 A	to	2,000 A			0.10 %			
8*	DC current / Ammeters, multimeters, clamp meters, inspection instruments							Direct generation with a calibrator	MKE-ISS1, MKE-SRP.1	
		22 µA	to	100 µA			0.040 %			
		100 µA	to	2.2 mA			0.0090 %			
		2.2 mA	to	22 mA			0.0070 %			
		22 mA	to	220 mA			0.0090 %			
		220 mA	to	2.2 A			0.016 %			
9*	DC current / Clamp meters, inspection instruments							Indirect measurement with a current coil	MKE-ISS1, MKE-SRP.1	
		200 A	to	2,000 A			0.2 %			
10*	AC current / Power supplies, calibrators, inspection instruments							Direct measurement using a multimeter	MKE-IST1	
		10 µA	to	200 µA		40 Hz to 1 kHz	0.050 % + 22 nA			
								Direct measurement using a multimeter	MKE-IST1, MKE-SRP.1	
		200 µA	to	2 mA		40 Hz to 1 kHz	0.035 % + 0.22 µA			
		2 mA	to	20 mA		40 Hz to 1 kHz	0.038 % + 2.2 µA			
		20 mA	to	200 mA		40 Hz to 1 kHz	0.037 % + 20 µA			

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		min	unit	max	unit					
		200 mA	to	2 A		40 Hz to 1 kHz	0.082 % + 0.2 mA			
		2 A	to	20 A		40 Hz to 1 kHz	0.12 % + 2 mA			
		200 mA	to	200 A		50 to 60 Hz	0.10 %	Indirect measurement using a current transformer and multimeter	MKE-IST1, MKE-SRP.1	
		200 A	to	2,500 A		50 Hz	0.20 %			
	AC current / Ammeters, multimeters, inspection instruments	22 µA	to	100 µA		40 Hz to 1 kHz	0.060 %	Direct generation with a calibrator	MKE-IST1, MKE-SRP.1	
		100 µA	to	5 mA		40 Hz to 1 kHz	0.035 %			
		5 mA	to	22 mA		40 Hz to 1 kHz	0.025 %			
		22 mA	to	220 mA		40 Hz to 1 kHz	0.028 %			
		220 mA	to	2.2 A		40 Hz to 1 kHz	0.050 %			
		2.2 A	to	20 A		40 Hz to 1 kHz	0.06 % + 1 mA			
11*	DC power / Wattmeters, network analyzers, inspection instruments (30 V to 500 V, 0.02 A to 200 A)	1 W	to	105 kW			0.060 %	Direct measurement with multimeters or indirect measurement with a shunt and multimeter	MKE-W1	
	AC power / Power supplies, calibrators (30 V to 500 V, 0.02 A to 200 A, 50 Hz to 60 Hz, cosφ 0.5 to 1)	1 W	to	105 kW			0.060 %	Direct measurement with an energy meter	MKE-W1	
	AC power / Wattmeters, network analyzers, inspection instruments (30 V to 500 V, 0.02 A to 200 A, 50 Hz to 60 Hz, cosφ 0.5 to 1)	1 W	to	105 kW			0.060 %	Direct comparison with an energy meter	MKE-W1	

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12*	DC resistance / Multimeters, resistors, ohmmeters, resistance boxes, calibrators, inspection instruments							Direct generation by resistance standards	MKE-RSS1	
				0.1	mΩ		0.0080 %			
				1	mΩ		0.0020 %			
				0.01	Ω		0.0025 %			
				0.1	Ω		0.0025 %			
				1	Ω		0.0020 %			
				1.9	Ω		0.010 %			
				10	Ω		0.0026 %			
				19	Ω		0.0026 %			
				100	Ω		0.0014 %			
				190	Ω		0.0014 %			
				1	kΩ		0.0011 %			
				1.9	kΩ		0.0011 %			
				10	kΩ		0.0011 %			
				19	kΩ		0.0011 %			
				100	kΩ		0.0015 %			
				190	kΩ		0.0015 %			
				1	MΩ		0.0026 %			
				1.9	MΩ		0.0026 %			
				10	MΩ		0.0050 %			
				19	MΩ		0.0050 %			
				100	MΩ		0.0050 %			
				1	GΩ		0,010 %			

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		0.1	mΩ	to	0.2	mΩ		0.040 %	Indirect measurement using a shunt and multimeter	MKE-RSS1 MKE-SRP.1	
		0.2	mΩ	to	0.5	mΩ		0.0080 %			
		0.5	mΩ	to	0.9	mΩ		0.0060 %			
		0,9	mΩ	to	5	Ω		0.0040 %			
		5	Ω	to	200	kΩ		0.0030 %	Direct measurement using a multimeter	MKE-RSS1, MKE-SRP.1	
		200	kΩ	to	2	MΩ		0.0040 %			
		2	MΩ	to	20	MΩ		0.0060 %			
		20	MΩ	to	200	MΩ		0.040 %			
		200	MΩ	to	300	MΩ		0.070 %			
		300	MΩ	to	500	MΩ		0.050 %			
		500	MΩ	to	1	GΩ		0.035 %			
		1	GΩ	to	2	GΩ		0.020 %			
		2	GΩ	to	10	GΩ		0.65 %			
		10	GΩ	to	20	GΩ		0.20 %			
		20	GΩ	to	250	GΩ	do 10000 V	0.50 %	Indirect measurement using a picoammeter and HF voltmeter	MKE-RSS, MKE-SRP.1	
		250	GΩ	to	1	TΩ		0.70 %			
13*	Impedance module / Resistance standards, resistance boxes, resistance meters, clamp meters, inspection meters	0.1	mΩ	to	0.1	Ω	50 Hz to 60 Hz	0.2 %	VA method	MKE-Z2, MKE-SRP.1	
		0.1	Ω	to	10	Ω	50 Hz to 1 kHz	0.2 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit	max	unit	Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
14*	Impedance module, AC resistance / resistance standards, meters, RLC bridges			100 mΩ		20 Hz to 50 Hz 50 Hz to 10 kHz	0.30 % 0.14 %	Comparison by substitution or direct measurement of impedance standard	MKE-Z2	
				1 Ω		20 Hz to 100 Hz 100 Hz 100 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz 10 kHz to 100 kHz	0.035 % 0.015 % 0.020 % 0.015 % 0.025 % 0.020 % 0.090 %			
				10 Ω		20 Hz to 100 Hz 100 Hz 100 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz 10 kHz to 100 kHz 100 kHz 100 kHz to 1 MHz	0.016 % 0.011 % 0.016 % 0.011 % 0.016 % 0.011 % 0.045 % 0.040 % 0.15 %			
				100 Ω		20 Hz to 100 Hz 100 Hz 100 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz	0.016 % 0.011 % 0.016 % 0.011 % 0.016 % 0.011 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
						10 kHz to 100 kHz	0.040 %			
						100 kHz	0.035 %			
						100 kHz to 1 MHz	0.15 %			
				1 kΩ		20 Hz to 100 Hz	0.016 %			
						100 Hz	0.011 %			
						100 Hz to 1 kHz	0.016 %			
						1 kHz	0.011 %			
						1 kHz to 10 kHz	0.016 %			
						10 kHz	0.011 %			
						10 kHz to 100 kHz	0.040 %			
						100 kHz	0.035 %			
						100 kHz to 1 MHz	0.15 %			
				10 kΩ		20 Hz to 100 Hz	0.016 %			
						100 Hz	0.011 %			
						100 Hz to 1 kHz	0.016 %			
						1 kHz	0.011 %			
						1 kHz to 10 kHz	0.016 %			
						10 kHz	0.011 %			
						10 kHz to 100 kHz	0.040 %			
						100 kHz	0.035 %			
						100 kHz to 1 MHz	0.15 %			
				100 kΩ		20 Hz to 100 Hz	0.020 %			
						100 Hz	0.011 %			
						100 Hz to 1 kHz	0.016 %			
						1 kHz	0.011 %			
						1 kHz to 10 kHz	0.020 %			

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				10 kHz	0.015 %			
				10 kHz to 100 kHz	0.20 %			
			1 MΩ	20 Hz to 100 Hz	0.035 %			
				100 Hz	0.018 %			
				100 Hz to 1 kHz	0.025 %			
				1 kHz	0.018 %			
				1 kHz to 10 kHz	0.060 %			
				10 kHz	0.050 %			
				10 kHz to 100 kHz	0.50 %			
			10 MΩ	20 Hz to 100 Hz	0,10 %			
				100 Hz	0,050 %			
				100 Hz to 1 kHz	0,055 %			
				1 kHz	0,050 %			
				1 kHz to 10 kHz	0,18 %			
			100 MΩ	20 Hz to 100 Hz	0,40 %			
				100 Hz to 1 kHz	0,50 %			
15*	Impedance module, AC resistance / Resistance standards, boxes, meters, clamp meters, inspection meters, RLC bridges	10 mΩ to	100 mΩ	20 Hz to 50 Hz	4 mΩ	Direct measurement or comparison by substitution with a reference RLC bridge	MKE-Z2	
				50 Hz to 100 Hz	3 mΩ			
				100 Hz to 500 Hz	2.2 mΩ			
				500 Hz to 5 kHz	1.5 mΩ			
				5 kHz to 500 kHz	1 mΩ			
				500 kHz to 1 MHz	2 mΩ			

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		min	unit	max	unit					
		100 mΩ	to	1000 mΩ		20 Hz to 50 Hz	7 mΩ			
						50 Hz to 100 Hz	6 mΩ			
						100 Hz to 500 Hz	4 mΩ			
						500 Hz to 5 kHz	3.5 mΩ			
						5 kHz to 500 kHz	3 mΩ			
						500 kHz to 1 MHz	7 mΩ			
		1 Ω	to	10 Ω		20 Hz to 50 Hz	0.25 % + 0.007 Ω			
						50 Hz to 100 Hz	0.20 % + 0.007 Ω			
						100 Hz to 500 Hz	0.20 % + 0.003 Ω			
						500 Hz to 5 kHz	0.17 % + 0.003 Ω			
						5 kHz to 100 kHz	0.17 % + 0.002 Ω			
						100 kHz to 500 kHz	0.20 % + 0.002 Ω			
						500 kHz to 1 MHz	0.45 % + 0.002 Ω			
		10 Ω	to	100 Ω		20 Hz to 100 Hz	0.15 % + 0.02 Ω			
						100 Hz to 500 Hz	0.08 % + 0.02 Ω			
						500 Hz to 100 kHz	0.10 % + 0.02 Ω			
						100 kHz to 500 kHz	0.13 % + 0.02 Ω			
						500 kHz to 1 MHz	0.36 % + 0.02 Ω			
		100 Ω	to	1 kΩ		20 Hz to 100 Hz	0.16 %			
						100 Hz to 500 Hz	0.10 %			
						500 Hz to 5 kHz	0.11 %			
						5 kHz to 100 kHz	0.12 %			
						100 kHz to 1 MHz	0.17 %			
						1 MHz	0.35 %			
		1 kΩ	to	10 kΩ		20 Hz to 100 Hz	0.16 %			
						100 Hz to 5 kHz	0.10 %			

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		min	unit	max	unit					
						5 kHz to 100 kHz	0.12 %			
						100 kHz to 1 MHz	0.27 %			
						1 MHz	0.55 %			
		10 kΩ	to	100 kΩ		20 Hz to 100 Hz	0.17 %			
						100 Hz to 5 kHz	0.10 %			
						5 kHz to 10 kHz	0.18 %			
						10 kHz to 100 kHz	0.22 %			
						100 kHz to 1 MHz	0.33 %			
						1 MHz	0.65 %			
		0.1 MΩ	to	1 MΩ		20 Hz to 50 Hz	(R/5 + 0.20) %			
						50 Hz to 100 Hz	(R/6 + 0.15) %			
						100 Hz to 500 Hz	(R/8 + 0.10) %			
						500 Hz to 1 kHz	(R/10 + 0.10) %			
						1 kHz to 5 kHz	(R/12 + 0.10) %			
						5 kHz to 10 kHz	(R/12 + 0.16) %			
						10 kHz to 100 kHz	(R/15 + 0.26) %			
						100 kHz to 1 MHz	(R/1.6 + 0.30) %			
						1 MHz	(R/0.8 + 0.60) %			
		1 MΩ	to	10 MΩ		50 Hz to 100 Hz	(R/6 + 0.15) %			
						100 Hz to 500 Hz	(R/8 + 0.10) %			
						500 Hz to 1 kHz	(R/10 + 0.10) %			
						1 kHz to 5 kHz	(R/12 + 0.10) %			
						5 kHz to 10 kHz	(R/12 + 0.15) %			
						10 kHz to 100 kHz	(R/15 + 0.26) %			
						100 kHz to 1 MHz	(R/1.6 + 0.30) %			
						1 MHz	(R/0.8 + 0.60) %			

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		10 MΩ to		100 MΩ		100 Hz to 500 Hz 500 Hz to 1 kHz 1 kHz to 100 kHz	(R/8 + 0.10) % (R/10 + 0.10) % (R/12 + 0.10) %			
16*	Capacity / Capacity standards, capacity meters, RLC bridges,			10 pF		50 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz 10 kHz to 100 kHz 100kHz to 1 MHz	0.15 % 0.075 % 0.080 % 0.040 % 0.050 % 0.15 %	Comparison by substitution or direct measurement of capacity standard	MKE-Z2	
				100 pF		50 Hz to 100 Hz 100 Hz 100 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz 10 kHz to 100 kHz 100 kHz 100 kHz to 1 MHz	0.080 % 0.050 % 0.060 % 0.035 % 0.040 % 0.035 % 0.050 % 0.040 % 0.15 %			
				1 nF		50 Hz to 100 Hz 100 Hz 100 Hz to 1 kHz 1 kHz 1 kHz to 10 kHz 10 kHz	0.040 % 0.035 % 0.040 % 0.030 % 0.040 % 0.030 %			

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						10 kHz to 100 kHz	0.050 %			
						100 kHz	0.040 %			
						100 kHz to 1 MHz	0.15 %			
				10 nF		50 Hz to 100 Hz	0.050 %			
						100 Hz	0.035 %			
						100 Hz to 1 kHz	0.040 %			
						1 kHz	0.035 %			
						1 kHz to 10 kHz	0.040 %			
						10 kHz	0.035 %			
						10 kHz to 100 kHz	0.060 %			
						100 kHz to 1 MHz	0.15 %			
				100 nF		50 Hz to 100 Hz	0.040 %			
						100 Hz	0.035 %			
						100 Hz to 1 kHz	0.040 %			
						1 kHz	0.035 %			
						1 kHz to 10 kHz	0.040 %			
						10 kHz	0.035 %			
						10 kHz to 100 kHz	0.060 %			
						100 kHz to 1 MHz	0.85 %			
				1 µF		20 Hz to 100 Hz	0.050 %			
						100 Hz	0.035 %			
						100 Hz to 1 kHz	0.040 %			
						1 kHz	0.035 %			
						1 kHz to 10 kHz	0.040 %			
						10 kHz	0.035 %			
						10 kHz to 100 kHz	0.090 %			

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				10 µF		20 Hz to 1 kHz 1 kHz to 10 kHz	0.15 % 0.20 %			
				100 µF		20 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 10 kHz	0.15 % 0.20 % 0.40 %			
17*	Capacity / Capacity standards, boxes, meters, RLC bridges	1 pF	to	10 pF		1 kHz to 2 kHz 2 kHz to 5 kHz 5 kHz to 10 kHz 10 kHz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 500 kHz 500 kHz to 1 MHz	0.10 % + 0.135 pF 0.10 % + 0.062 pF 0.10 % + 0.023 pF 0.17 % + 0.011 pF 0.22 % + 0.002 pF 0.28 % + 0.010 pF 0.40 % + 0.005 pF 0.55 % + 0.002 pF	Direct measurement or comparison by substitution with a reference RLC bridge	MKE-Z2	
		10 pF	to	100 pF		500 Hz to 1 kHz 1 kHz to 2 kHz 2 kHz to 5 kHz 5 kHz to 10 kHz 10 kHz to 50 kHz 50 kHz to 500 kHz 500 kHz to 1 MHz	0.10 % + 0.30 pF 0.10 % + 0.15 pF 0.10 % + 0.07 pF 0.10 % + 0.03 pF 0.15 % + 0.015 pF 0.15 % + 0.030 pF 0.40 % + 0.020 pF			
		100 pF	to	1,000 pF		100 Hz to 200 Hz 200 Hz to 500 Hz 500 Hz to 1 kHz	0.10 % + 2 pF 0.10 % + 0.85 pF 0.10 % + 0.30 pF			

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		min	unit	max	unit					
						1 kHz to 2 kHz	0.10 % + 0.15 pF			
						2 kHz to 500 kHz	0.15 %			
						500 kHz to 1 MH	0.35 %			
		1 nF	to	10 nF		50 Hz to 100 Hz	0.15 % + 0.005 nF			
						100 Hz to 500 Hz	0.10 % + 0.002 pF			
						500 Hz to 5 kHz	0.10 %			
						5 kHz to 100 kHz	0.12 %			
						100 kHz to 200 kHz	0.13 %			
						200 kHz to 500 kHz	0.15 %			
						500 kHz to 1 MHz	0.50 %			
		10 nF	to	100 nF		50 Hz to 100 Hz	0.20 %			
						100 Hz to 5 kHz	0.10 %			
						5 kHz to 50 kHz	0.12 %			
						50 kHz to 200 kHz	0.20 %			
						200 kHz to 500 kHz	0.25 %			
						500 kHz to 1 MHz	0.55 %			
		100 nF	to	1,000 nF		50 Hz to 100 Hz	0.17 %			
						100 Hz to 500 Hz	0.10 %			
						500 Hz to 5 kHz	0.12 %			
						5 kHz to 50 kHz	0.20 %			
						50 kHz to 100 kHz	0.25 %			
						100 kHz to 200 kHz	0.30 %			
						200 kHz to 1 MHz	0.45 %			
		1 µF	to	10 µF		20 Hz to 100 Hz	0.16 %			
						100 Hz to 500 Hz	0.10 %			
						500 Hz to 2 kHz	0.20 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min unit	Nominal range max unit	Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
				2 kHz to 5 kHz	0.22 %			
				5 kHz to 10 kHz	0.25 %			
				10 kHz to 20 kHz	0.30 %			
				20 kHz to 100 kHz	(C/40 + 0.20) %			
		10 µF	100 µF	20 Hz to 50 Hz	0.17 %			
				50 Hz to 200 Hz	0.20 %			
				200 Hz to 500 Hz	0.25 %			
				500 Hz to 1 kHz	0.30 %			
				1 kHz to 2 kHz	0.35 %			
				2 kHz to 5 kHz	(C/500 + 0.25) %			
				5 kHz to 10 kHz	(C/250 + 0.25) %			
				10 kHz to 20 kHz	(C/120 + 0.25) %			
		100 µF	1,000 µF	20 Hz to 200 Hz	(C/3500 + 0.15) %			
				200 Hz to 500 Hz	(C/2800 + 0.20) %			
				500 Hz to 1 kHz	(C/1900 + 0.30) %			
				1 kHz to 2 kHz	(C/1000 + 0.30) %			
				2 kHz to 5 kHz	(C/500 + 0.30) %			
		1,000 µF	10,000 µF	20 Hz to 50 Hz	(C/12000 + 0.30) %			
				50 Hz to 100 Hz	(C/9000 + 0.30) %			
				100 Hz to 200 Hz	(C/5000 + 0.20) %			
18*	Inductance / Inductance standards, meters, RLC bridges		10 µH	100 Hz	0.30 %	Comparison by substitution or direct measurement of inductance standard	MKE-Z2	
				1 kHz	0.040 %			
				10 kHz	0.030 %			

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			100 µH	100 Hz	0.070 %			
				1 kHz	0.020 %			
				10 kHz	0.020 %			
			1 mH	100 Hz	0.030 %			
				1 kHz	0.020 %			
				10 kHz	0.020 %			
			2 mH	1 kHz	0.020 %			
			10 mH	1 kHz	0.020 %			
			100 mH	1 kHz	0.020 %			
			1 H	1 kHz	0.020 %			
			10 H	1 kHz	0,030 %			
19*	Inductance / Inductance standards, meters, boxes, RLC bridges					Direct measurement or comparison by substitution with a reference RLC bridge	MKE-Z2	
		1 µH to	10 µH	1 kHz to 2 kHz	0.25 % + 0.147 µH			
				2 kHz to 5 kHz	0.25 % + 0.063 µH			
				5 kHz to 10 kHz	0.25 % + 0.022 µH			
				10 kHz to 20 kHz	0,25 % + 0.010 µH			
				20 kHz to 50 kHz	0.25 % + 0.005 µH			
				50 kHz to 100 kHz	0.25 % + 0.002 µH			
				100 kHz to 200 kHz	0.32 %			
				200 kHz to 500 kHz	0.28 %			
		10 µH to	100 µH	500 Hz to 1 kHz	0.25 % + 0.35 µH			
				1 kHz to 2 kHz	0.25 % + 0.15 µH			
				2 kHz to 5 kHz	0.25 % + 0.06 µH			
				5 kHz to 10 kHz	0.25 % + 0.02 µH			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
						10 kHz to 20 kHz	0.18 % + 0.02 µH			
						20 kHz to 50 kHz	0.18 % + 0.01 µH			
						50 kHz to 500 kHz	0.20 %			
		100 µH	to	1,000 µH		100 Hz to 200 Hz	0.30 % + 3.0 µH			
						200 Hz to 500 Hz	0.30 % + 1.2 µH			
						500 Hz to 1 kHz	0.30 % + 0.3 µH			
						1 kHz to 2 kHz	0.20 % + 0.25 µH			
						2 kHz to 5 kHz	0,17 % + 0.15 µH			
						5 kHz to 10 kHz	0.22 %			
						10 kHz to 50 kHz	0.20 %			
						50 kHz to 200 kHz	0.13 %			
						200 kHz to 500 kHz	0.15 %			
		1 mH	to	10 mH		50 Hz to 100 Hz	0.45 % + 0.007 mH			
						100 Hz to 200 Hz	0.30 % + 0.003 mH			
						200 Hz to 500 Hz	0.15 % + 0.003 mH			
						500 Hz to 2 kHz	0.23 %			
						2 kHz to 5 kHz	0.20 %			
						5 kHz to 10 kHz	0.15 %			
						10 kHz to 100 kHz	0.12 %			
						100 kHz to 200 kHz	0.20 %			
						200 kHz to 500 kHz	0.25 %			
		10 mH	to	100 mH		50 Hz to 100 Hz	0.20 % + 0.03 mH			
						100 Hz to 200 Hz	0.22 %			
						200 Hz to 500 Hz	0.18 %			
						500 Hz to 1 kHz	0.10 %			
						1 kHz to 20 kHz	0.12 %			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit	to	max	unit	Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
							20 kHz to 50 kHz	0.15 %			
							50 kHz to 100 kHz	0.30 %			
							100 kHz to 500 kHz	0.50 %			
		0.1	H	to	1	H	50 Hz to 100 Hz	0.17 %			
							100 Hz to 5 kHz	0.10 %			
							5 kHz to 10 kHz	0.11 %			
							10 kHz to 20 kHz	0.20 %			
							20 kHz to 50 kHz	0.25 %			
							50 kHz to 100 kHz	(L/2 + 0.25) %			
		1	H	to	10	H	50 Hz to 100 Hz	0.16 %			
							100 Hz to 1 kHz	0.10 %			
							1 kHz to 5 kHz	0.12 %			
							5 kHz to 10 kHz	0.22 %			
							10 kHz to 20 kHz	(L/200 + 0.20) %			
							20 kHz to 50 kHz	(L/40 + 0.20) %			
		10	H	to	100	H	50 Hz to 100 Hz	0.16 %			
							100 Hz to 200 Hz	0.12 %			
							200 Hz to 1 kHz	0.15 %			
							1 kHz to 2 kHz	0.20 %			
							2 kHz to 5 kHz	(L/400 + 0.10) %			
							5 kHz to 10 kHz	(L/240 + 0.20) %			
							10 kHz to 20 kHz	(L/110 + 0.20) %			
							20 kHz to 50 kHz	(L/45 + 0.20) %			
20*	HF voltage peak-to-peak value / HF voltage meters, oscilloscopes, HF								Direct generation in the plane of the connecting BNC connector of 50 Ω	MKE-UVF1	

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		min	unit	max	unit					
	millivoltmeters, frequency analyzers									
		5 mV	to	5 V		100 kHz to 300 MHz	3.7 %			
						300 MHz to 550 MHz	4.2 %			
		5 mV	to	3 V		550 MHz to 1,1 GHz	5.2 %			
						1,1 GHz to 2,5 GHz	5.9 %			
		5 mV	to	2 V		2,5 GHz to 3,2 GHz	5.9 %			
21*	HF voltage effective value / HF voltage meters, oscilloscopes, HF millivoltmeters, frequency analyzers, function generators, signal generators							Direct measurement, comparison with a HF millivoltmeter in the plane of N connector of 50 Ω	MKE-UVF1	
		1 mV	to	2 mV		100 kHz to 100 MHz	3.6 %			
		2 mV	to	10 mV			2.8 %			
		10 mV	to	10 V			2.5 %			
		1 mV	to	2 mV		100 MHz to 200 MHz	4.2 %			
		2 mV	to	10 mV			3.4 %			
		10 mV	to	1 V			3.0 %			
		1 V	to	10 V			4.2 %			
		1 mV	to	2 mV		200 MHz to 500 MHz	4.5 %			
		2 mV	to	10 mV			3.7 %			
		10 mV	to	1 V			3.3 %			
		1 V	to	10 V			4.9 %			
22*	High DC voltage / Power supplies, inspection instruments	1 kV	to	100 kV			0.20 %	Direct measurement with a HV probe	MKE-UVNSS1, MKE-SRP.1	

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
		min	unit	max	unit					
	High DC voltage / Meters, inspection instruments	1 kV	to	80 kV			0.20 %	Direct generation, comparison with a HV probe	MKE-UVNSS1, MKE-SRP.1	
23*	High AC voltage / Meters, inspection instruments	1 kV 30 kV	to to	30 kV 100 kV		50 Hz	0.16 % 1.3 %	Direct measurement with a HV probe	MKE-UVNST1, MKE-SRP.1	
	High AC voltage / Power supplies, inspection instruments	1 kV 30 kV	to to	30 kV 50 kV		50 Hz	0.16 % 1.3 %	Direct generation, comparison with a HV probe	MKE-UVNST1, MKE-SRP.1	

[1] Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

[2] The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M a part of CMC and it is the lowest value of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95 %. If not stated otherwise, the uncertainty values stated without a unit are relative to the measured value. The uncertainty value stated herein is based on the best conditions achievable by the laboratory; the uncertainty value of a specific calibration may be higher depending on the conditions of such a calibration. For identical extreme values of adjacent ranges, the lower uncertainty value always applies.

[3] If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).

Explanatory notes:

R ..... Resistance in MΩ

C ..... Capacity in µF

L ..... Inductance in H

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CMC for the field of measured quantity: Optical quantities

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the measurand	Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
		min	unit	max	unit					
1	Illumination / Luxmeters	1 Lx	to	30,000 Lx			2.5 %	Comparison with a luxmeter	MK-LUX1	

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CMC for the field of measured quantity: Time and frequency quantities

Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit		max	unit	Parameter(s) of the measurand		Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Loca-tion
1*	Frequency / Frequency meters, counters, frequency analyzers, function generators, signal generators, frequency references, reference oscillators, multimeters, calibrators	0.001 Hz	to		50 MHz			$U \geq 2.2$ V TTL/50 Ω	$3.5 \cdot 10^{-11}$	Direct generation by a GPS receiver or generator	MKF-f1	
		50 MHz	to		1 GHz			$U \geq 1$ V sine / 50 Ω	$1.0 \cdot 10^{-10}$			
		1 GHz	to		3.2 GHz			$U \geq 2$ $V_{ŠŠ}$ / 50 Ω	$3.0 \cdot 10^{-10}$			
					1 MHz		$U_{vst} \geq 1$ V_{ef}, signal to noise ratio ≥ 60 dB	τ from 100 s to 200 s	$4.0 \cdot 10^{-11}$	Indirect measurement with a GPS receiver and counter	MKF-f1	
								τ from 200 s to 2,000 s	$6.0 \cdot 10^{-12}$			
					5 MHz		$U_{vst} \geq 1$ V_{ef}, signal to noise ratio ≥ 60 dB	τ from 100 s to 200 s	$4.0 \cdot 10^{-11}$			
								τ from 200 s to 2,000 s	$6.0 \cdot 10^{-12}$			
					10 MHz		$U_{vst} \geq 1$ V_{ef}, signal to noise ratio ≥ 60 dB	τ from 100 s to 200 s	$4.0 \cdot 10^{-11}$			
								τ from 200 s to 2,000 s	$6.0 \cdot 10^{-12}$			

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Ord. nr.[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit		max	unit	Parameter(s) of the measurand		Lowest stated expanded measurement uncertainty[2]	Calibration principle	Calibration procedure identification[3]	Location
							pulse signals			Direct measurement by a counter	MKF-f1, MKE-SRP.1	
		0.001 Hz	to		100 Hz			τ over 10 s	$8.0 \cdot 10^{-11}$			
		100 Hz	to		350 MHz			τ over 1 s	$8.0 \cdot 10^{-11}$			
		1 Hz	to		30 Hz		$U_{vst} \geq 1$ V_{ef}, signal to noise ratio ≥ 60 dB	τ over 10 s	$5 \cdot 10^{-5}$ Hz			
		30 Hz	to		300 Hz			τ over 1 s	$3 \cdot 10^{-4}$ Hz			
		300 Hz	to		100 kHz				$5 \cdot 10^{-5}$ Hz			
		100 kHz	to		300 kHz				$4.0 \cdot 10^{-10}$	Direct measurement by a counter	MKF-f1	
		300 kHz	to		600 kHz				$2.0 \cdot 10^{-10}$			
		600 kHz	to		6 GHz				$1.0 \cdot 10^{-10}$			
2*	Time interval / Time interval meters, counters, oscilloscopes, function generators, pulse generators, digital and mechanical stopwatches, timers, inspection instruments									Direct generation with a calibrator	MKF-t1	
		1 ns	to		4 ns		$U_{ss} \geq 1$ V	50 Ω	0.70 ns			
		4 ns	to		10 ns				4.5% + 0.5 ns			
		10 ns	to		100 ns				5.5% + 0.5 ns			
		100 ns	to		1 µs		U ≥ 2.2 V TTL	50 Ω	2.0 ns	Direct generation by a GPS receiver		
		1 µs	to		100 s				4.0 ns			
		100 s	to		10^5 s				$3.5 \cdot 10^{-11}$			

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		min	unit	max	unit						
3	Pulse signal period / Time interval meters, counters, oscilloscopes, function generators, pulse generators, digital and mechanical stopwatches, timers, inspection instruments	2.85 ns 10 ms	to to	10 ms 1,000 s		$U_{inp} \geq 1$ V	τ over 10 s τ over 1 s	$8.0 \cdot 10^{-11}$ $8.0 \cdot 10^{-11}$	Direct measurement by a counter	MKF-t1	
4	Pulse signal duration / Time interval meters, counters, oscilloscopes, function generators, pulse generators, digital and mechanical stopwatches, timers, inspection instruments	5 ns 10 s	to to	10 s 10^5 s		$U_{inp} \geq 1$ V		1.0 ns $8.0 \cdot 10^{-11}$	Direct measurement by a counter	MKF-t1, MKE-SRP.1	
		10^5 s	to	$4 \cdot 10^5$ s				$3.6 \cdot 10^{-8}$	Direct comparison with a calibrator	MKF-t1	

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[3] If the document identifying the calibration procedure is dated only these specific procedures are used. If the document identifying the calibration procedure is not dated, the latest edition of the specified procedure is used (including any changes).