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. **64/2024**

M & B Calibr, spol. s r.o.
with registered office Krumlovská 1454/26, 664 91 Ivančice,
Company Registration No. 43389783

for the Calibration Laboratory No. **2301**
Calibration Laboratory

Scope of accreditation:

Calibration of meters of length, plane angle, weight, speed, hardness, roughness, force, pressure, temperature, electrical quantities, time quantities and humidity 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.: 21/2024 of 22. 1. 2024, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **19. 7. 2024**

Prague: 14. 2. 2024

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

The Appendix is an integral part of
Certificate of Accreditation No. 64/2024 of 14/02/2024

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

M & B Calibr, spol. s r.o.
CAB number 2301, Calibration Laboratory
Krumlovská 1454/26, 664 91 Ivančice

Calibration laboratory locations:

1. **Calibration Laboratory** Krumlovská 1454/26, 664 91 Ivančice
2. **Calibration Laboratory** Strojírenská 259/16, Zličín, 155 21 Praha 5

CMC for the field of measured quantity: Length

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1	Steel parallels	0.5 mm		to	1,000 mm			(2·L + 0.2) µm	Comparative measurement using steel parallels	KP D1	1
2*	Steel length gauges	0 m		to	2 m			60 µm	Comparative measurement using steel parallels	KP D2	1,2
		2 m		to	5 m			180 µm			
	Steel tape measures	0 m		to	2 m			0.14 mm	Comparative measurement on a reference track		
		2 m		to	3 m			0.28 mm			
		3 m		to	5 m			0.42 mm			
		5 m		to	8 m			0.70 mm			
		8 m		to	10 m			0.98 mm			
3	Tape measures	0 m		to	10 m			0.4 mm	Comparative measurement on a reference track	KP D3	1,2
		10 m		to	20 m			0.6 mm			
		20 m		to	50 m			1.0 mm			
		50 m		to	100 m			2.2 mm			
	Laser distance meters	0 m		to	5 m			0.2 mm			
4	Limit and end measuring rings	1 mm		to	100 mm			(2·L + 0.5) µm	Direct and comparative measurement by a distance meter	KP D4	1
		100 mm		to	500 mm			(2·L + 2.4) µm			
		1 mm		to	200 mm			(4·L + 1.3) µm			2

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
	Limit snap gauges	1 mm		to	100 mm			(2·L + 0.5) µm			1,2
		100 mm		to	500 mm			(2·L + 2.4) µm			
	Feeler gauges Limit cylindrical gauges	0.02 mm		to	100 mm			(2·L + 0.5) µm			
		100 mm		to	500 mm			(2·L + 2.4) µm			
5*	Feeler gauges, Limit cylindrical gauges.	1 mm		to	125 mm			(2·L + 2.4) µm	Direct measurement by a micropasameter	KP D4	1
6	Limit plug gauges	1 mm		to	200 mm			(3·L + 3) µm	Direct measurement by a distance meter	KP D5	1,2
		1 mm		to	160 mm			(1·L + 4) µm	Direct measurement on MasterScanner XP 16060		1
	Threaded rings	1 mm		to	3 mm			(3·L + 3) µm	Comparison by a wear pin gauge		1
		2.5 mm		to	200 mm			(3·L + 3) µm	Comparative measurement by a distance meter		
		3 mm		to	160 mm			(1·L + 4) µm	Direct measurement on MasterScanner XP 16060		
7*	Limit plug gauges	1 mm		to	125 mm			(3·L + 3.5) µm	Direct measurement by a micropasameter	KP D5	1
8*	Slide gauges: slide rules, depth gauges, height gauges	0 mm		to	1,000 mm			12 µm	Comparative measurement using steel parallels	KP D6	1,2
		1,000 mm		to	3,000 mm			20 µm			
9*	Micrometer gauges: micrometers, pasameters, micropasameters, micrometer heads, micrometer depth gauges	0 mm		to	25 mm		Division 0.0001 mm	0.7 µm	Comparative measurement using steel parallels	KP D7	1,2
		0 mm		to	100 mm			1.4 µm			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
		100 mm		to	1,000 mm			2.5 µm			
		1,000 mm		to	1,500 mm			4.1 µm			
10*	Inside micrometers Three contact internal gauges	2 mm		to	100 mm			2.0 µm	Comparative measurement using setting rings	KP D8	1,2
		100 mm		to	300 mm			4.0 µm			1
		100 mm		to	200 mm			4.0 µm			2
11	Inside micrometer gauges	10 mm		to	3,000 mm			(3·L + 2.2) µm	Direct measurement by a distance meter	KP D9	1
		10 mm		to	1000 mm			(3·L + 2.2) µm			2
12*	Electromagnetic, ultrasonic thickness gauges	0 mm		to	1.5 mm			(1·L + 1.3) µm	Comparative measurement by a thickness reference standard	KP D10	1
		1.5 mm		to	500 mm			(1·L + 2.3) µm			
13	Direct and lever dial indicators	0 mm		to	100 mm			0.3 µm	Direct measurement by a special measuring device	KP D11	1,2
	Two-contact internal gauges	2 mm		to	205 mm			0.3 µm			
		205 mm		to	1 000 mm			(3·L + 2.2) µm	Direct measurement by a length gauge		2
14	Gauges, jigs, templates, meters of plane and angle	0 mm		to	2,000 mm			(4.5·L + 1.7) µm	Measurement by a 3D CMM	KP D12	1
15*	Profile projectors, measuring microscopes	0 mm		to	300 mm			(1·L + 2.6) µm	Comparative measurement using a rule	KP D13	1
16*	Measurement of straightness, linear sensing, measurement of flatness of engineering gauges	0 m		to	20 m			(1·L + 0.1) µm	Direct measurement by a laser interferometer	KP D14	1
		0 m		to	20 m			1.5 µm/m²			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
17	Gauges, jigs, templates, meters	0 mm		to	600 mm			(2.5·L + 1.2) µm (0.8.L + 0.5) µm	Measurement by a linear height gauge	KP D15	1
18*	Linear height gauges	0 mm		to	600 mm			(1·L + 3.0) µm	Comparative measurement by a calibration comb	KP D16	1
		600 mm		to	1,000 mm			(1·L + 2.6) µm	Comparative measurement by a calibration comb and steel parallels		
19*	Contourographs	0 mm		to	100 mm			(2·L + 0.2) µm	Comparative measurement using end standards	KP D17	1
20*	Length measuring instruments	0 mm		to	1,000 mm			(2·L + 0.2) µm	Direct measurement by a laser interferometer	KP D18	1
21*	3D coordinate measuring machines	0 mm		to	600 mm			(2·L + 0.2) µm	Comparative measurement by a calibration comb	KP D19	1
		600 mm		to	1,000 mm			(1·L + 0.1) µm	Comparative measurement by a calibration comb and steel parallels		
		0 mm		to	10,000 mm			(2·L + 3.5) µm	Direct measurement by a laser interferometer		
22	Gauges, meters, jigs, templates, rules	0 mm		to	330 mm			(2·L + 3.5) µm	Direct measurement by a 2D microscope	KP D20	1
		0 mm		to	300 mm			(5·L + 2) µm			2
23	Blade and surface rules	0 mm		to	2,000 mm			(5·L + 12) µm	Direct measurement on a plate	KP D21	1
		2,000 mm		to	3,000 mm			(5·L + 12) µm	Measurement on a bed		
		0 mm		to	1,000 mm			(5·L + 12) µm	Direct measurement on a plate		2
		1,000 mm		to	1,500 mm			(2.5·L + 1.2) µm			
24*	Roughness meters	0.01 µm		to	6,000 µm			5 %	Comparative measurement by a roughness reference standard	KP DR1	1
25	Roughness standards	0.01 µm		to	6,000 µm			5 %	Direct measurement by a roughness meter	KP DR1	1

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
26	Angles	0 °		to	180 °		Length up to 3 m	(4.5·L + 2) µm	Direct measurement by a 3D CMM	KP R2	1
							Length up to 0.6 m	(20·L + 2) µm	Direct measurement on special equipment		2

[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:
CMM – coordinate measuring machine
L – nominal length in metres

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CMC for the field of measured quantity: Plane angle

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1	Levels – builder's, liquid, machine	-52	mm/m	to	52	mm/m	Division sensitivity from 0.01 mm/m	0.005mm/m	Direct measurement by a small angle generator	KP R1	1,2
	Clinometers	-180	°	to	180	°	Division from 0.01°	0.15°			
2	Angle gauges	0	°	to	360	°		5′	Direct measurement using angle gauges	KP R2	1,2

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CMC for the field of measured quantity: Mass

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1*	Non-automatic weighing instruments								Comparative measurement using a reference weight	KP VA1	1
		0.001 g		to	2000 g			$2.7 \cdot 10^{-6}$	E2 class weight		
		2 kg		to	20 kg			$1.4 \cdot 10^{-5}$	F2 class weight		
		20 kg		to	1000 kg			$5.0 \cdot 10^{-5}$	M1 class weight		
2	Weights and other objects				1 g			0.4 mg	Comparison with a class F2 reference weight	KP VA2	1
					2 g			0.5 mg			
					5 g			0.6 mg			
					10 g			0.7 mg			
					20 g			0.9 mg			
					50 g			1.2 mg			
					100 g			1.9 mg			
					200 g			2.8 mg			
					500 g			5.1mg			
					1 kg			10 mg			
					2 kg			17 mg			
					5 kg			31 mg			
					10 kg			60 mg			
					20 kg			90 mg			

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Explanatory notes: The lowest expanded measurement uncertainty is stated without accounting for the effect of the calibrated meter.

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CMC for the field of measured quantity: Rotational speed

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
		min.	unit	max.	unit					
1*	Revolution meters	30	min^{-1}	to 40000	min^{-1}		(1.1 % + 0.5d)	Direct measurement by a revolution generator	KP OT1	1

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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).

Explanatory notes:

d - division of the scale of the calibrated gauge

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CMC for the field of measured quantity: Hardness

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min	unit.		max	unit.	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1	Rockwell hardness plates and samples	70 HRA		to	85 HRA			0.40 HRA	Direct measurement	KP TV1	1
		60 HRB		to	100 HRB			0.40 HRB			
		20 HRC		to	70 HRC			0.40 HRC			
	Shore A hardness plates	0 ShA		to	100 ShA			2.0 ShA			
	Shore D hardness plates	0 ShD		to	100 ShD			2.0 ShD			
	Brinell hardness plates	8 HBW		to	650 HBW			1.0 %			
	Vickers hardness plates	10 HV		to	2900 HV		HV2 to HV50	1.0 %			
2*	Rockwell hardness meters for metals	70 HRA		to	85 HRA			0.50 HRA	Direct measurement using reference hardness plates		
		60 HRB		to	100 HRB			0.50 HRB			
		20 HRC		to	70 HRC			0.50 HRC			
	Vickers hardness meters for metals	10 HV		to	2000 HV			0.50 %			
	Brinell hardness meters for metals	10 HBW		to	650 HBW			0.50 %			
	Shore hardness meters, type A,D,E,C	1 Sh		to	100 Sh			0.50 Sh			

[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).

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CMC for the field of measured quantity: Force, mechanical tests

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min unit.		max unit.	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1*	Torque wrenches	0,1 Nm	to	1100 Nm		0,65 %	Comparative measurement by a reference torque sensor	KP S1	1
		1100 Nm	to	3000 Nm		0,90 %			
	Torque measuring devices, torque drivers, torque sensors	0,1 Nm	až	500 Nm		0,40 %			
2	Force meters and extensometric sensors	0 N	to	5 kN		0,20 %	Comparative measurement by a reference force sensor	KP S2	1
		5 kN	to	30 kN		0.30 %			
3*	Force meters and extensometric sensors	0 N	to	5 kN		0.20 %	Comparative measurement by a reference force sensor		
		5 kN	to	20 kN		0.30 %			

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[2] The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02 M, 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 value measured. If the calibration is carried out outside the laboratory premises, the measurement uncertainty may be affected.

[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).

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CMC for the field of measured quantity: Pressure

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity		Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1*	Deformation manometers, tyre pressure gauges, electromechanical pressure gauges (digital pressure gauges, pressure transducers with digital output of the measured quantity)	-100 kPa	to		0 kPa		Gas	Overpressure/ underpressure	130 Pa	Comparative measurement by a pressure reference standard	KP T1, KP T2	1
		0 kPa	to		35 kPa				18 Pa			
		35 kPa	to		160 kPa				130 Pa			
		160 kPa	to		2000 kPa				0.1%			
		25 kPa	to		600 kPa		Liquids	Overpressure	180 Pa			
		0.6 MPa	to		6 MPa				0.03 %			
		6 MPa	to		60 MPa				0.05 %			
		60 MPa	to		70 MPa				0.1 %			
		70 MPa	to		140 MPa				0.2 %			

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CMC for the field of measured quantity: Temperature

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1*	Direct-indicating thermometers	-30 °C		to	0 °C			0.06 °C	Comparison with a reference digital thermometer in a dry block calibrator	KP TE1	1
		0 °C		to	100 °C			0.05 °C	Comparison with a reference digital thermometer in a liquid bath		
		100 °C		to	200 °C			0.06 °C	Comparison with a reference digital thermometer in a dry block calibrator		
		200 °C		to	300 °C			0.09 °C			
		300 °C		to	400 °C			0.4 °C			
		400 °C		to	500 °C			0.5 °C			
		500 °C		to	650 °C			0.6 °C			
		650 °C		to	1,100 °C			1.5 °C	Comparison with a reference digital thermometer in an air oven		
	Contactless thermometers	-10 °C		to	200 °C			3.0 °C	Comparison with a reference pyrometer on target-type or cavity-type black body		
		200 °C		to	500 °C			6.0 °C			
		500 °C		to	800 °C			10.0 °C			
2*	Thermoelectric temperature sensors	-30 °C		to	0 °C			0.7 °C	Comparison with a reference digital thermometer in a dry block calibrator	KP TE2	1
		0 °C		to	100 °C			0.7 °C	Comparison with a reference digital thermometer in a liquid bath		
		100 °C		to	550 °C			0.9 °C	Comparison with a reference digital thermometer in a dry block calibrator		
		550 °C		to	800 °C			2.3 °C	Comparison with a reference digital thermometer in an air oven		

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
3*	Resistance temperature sensors	-30	°C	to	0	°C		0.15 °C	Comparison with a reference digital thermometer in an oven	KP TE3	1
		0	°C	to	100	°C		0.13 °C	Comparison with a reference digital thermometer in a liquid bath		
		100	°C	to	400	°C		0.45 °C	Comparison with a reference digital thermometer in an oven		

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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).

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M & B Calibr, spol. s r.o.
CAB number 2301, Calibration Laboratory
Krumlovská 1454/26, 664 91 Ivančice

CMC for the field of measured quantity: Electrical quantities

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
1	DC voltage sources								Direct measurement by a standard multimeter	KP EL2	1
		0 mV		to	100 mV			0.0062 % + 6,1 µV			
		0,1 V		to	1 V			0,0047 % + 16 µV			
		1 V		to	10 V			0,0047 % + 0,14 mV			
		10 V		to	100 V			0,0079 % + 2,0 mV			
		100 V		to	1000 V			0,0079 % + 20 mV			
	DC voltage meters								Direct generation with a standard calibrator	KP EL1	
		0 mV		to	200 mV			0,0053 % + 7,7 µV			
		0,2 V		to	2 V			0,0028 % + 15 µV			
		2 V		to	20 V			0,0028 % + 0,15 mV			
		20 V		to	200 V			0,0028 % + 1,5 mV			
		200 V		to	1000 V			0,0035 % + 17 mV			
2	Direct current sources								Direct measurement by a standard multimeter	KP EL2	1
		0 µA		to	10 µA			0,050 % + 6,1 nA			
		10 µA		to	100 µA			0,074 % + 17 nA			
		0,1 mA		to	1 mA			0,075 % + 0,16 µA			
		1 mA		to	10 mA			0,034 % + 1,2 µA			
		10 mA		to	100 mA			0,034 % + 12 µA			
		100 mA		to	1 A			0,068 % + 0,15 mA			
		1 A		to	3 A			0,061 % + 1,1 mA			
	Direct current meters								Direct generation with a standard calibrator	KP EL1	
		0 µA		to	200 µA			0,020 % + 73 nA			
		0,2 mA		to	2 mA			0,016 % + 0,13 µA			
		2 mA		to	20 mA			0,009 % + 0,94 µA			
		20 mA		to	200 mA			0,012 % + 9,7 µA			
		0,2 A		to	2 A			0,018 % + 0,13 mA			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
		2 A		to	30 A			0,069 % + 2,5 mA			
		0 A		to	1500 A			0,42 % + 0,13 A	Simulation using current coil		
3	AC voltage sources	0,1 mV		to	100 mV		10 Hz to 20 kHz	0,086 % + 36 µV	Direct measurement by a standard multimeter	KP EL2	1
							20 kHz to 50 kHz	0,16 % + 59 µV			
							50 kHz to 100 kHz	0,69 % + 93 µV			
		0,1 V		to	1 V		10 Hz to 20 kHz	0,076 % + 0,43 mV			
							20 kHz to 50 kHz	0,14 % + 0,73 mV			
							50 kHz to 100 kHz	0,71 % + 0,81 mV			
		1 V		to	10 V		10 Hz to 20 kHz	0,076 % + 4,4 mV			
							20 kHz to 50 kHz	0,14 % + 7,3 mV			
							50 kHz to 100 kHz	0,71 % + 17 mV			
		10 V		to	100 V		10 Hz to 20 kHz	0,076 % + 44 mV			
							20 kHz to 50 kHz	0,14 % + 73 mV			
							50 kHz to 100 kHz	0,71 % + 81 mV			
		100 V		to	750 V		10 Hz to 20 kHz	0,07 % + 0,35 V			
							20 kHz to 50 kHz	0,14 % + 0,59 V			
							50 kHz to 100 kHz	0,61 % + 1,5 V			
	AC voltage meters	0,1 mV		to	200 mV		10 Hz to 45 Hz	0,16 % + 64 µV	Direct generation with a standard calibrator	KP EL1	
							45 Hz to 10 kHz	0,049 % + 69 µV			
							10 kHz to 20 kHz	0,12 % + 86 µV			
							20 kHz to 50 kHz	0,20 % + 98 µV			
		0,2 V		to	2 V		10 Hz to 45 Hz	0,082 % + 0,38 mV			
							45 Hz to 10 kHz	0,042 % + 0,29 mV			
							10 kHz to 20 kHz	0,12 % + 0,46 mV			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
							20 kHz to 50 kHz	0,17 % + 0,73 mV			
		2 V		to	20 V		10 Hz to 45 Hz	0,084 % + 3,8 mV			
							45 Hz to 10 kHz	0,042 % + 2,7 mV			
							10 kHz to 20 kHz	0,12 % + 4,7 mV			
							20 kHz to 50 kHz	0,17 % + 5,6 mV			
		20 V		to	200 V		30 Hz to 45 Hz	0,082 % + 31 mV			
							45 Hz to 10 kHz	0,10 % + 43 mV			
							10 kHz to 20 kHz	0,14 % + 56 mV			
							20 kHz to 40 kHz	0,17 % + 61 mV			
		200 V		to	1000 V		30 Hz to 45 Hz	0,082 % + 0,45 V			
							45 Hz to 1 kHz	0,09 % + 0,28 V			
							1 kHz to 5 kHz	0,14 % + 0,38 V			
							5 kHz to 10 kHz	0,16 % + 0,49 V			
4	Alternating current sources								Direct measurement by a standard multimeter	KP EL2	1
		0,1 µA		to	100 µA		10 Hz to 1 kHz	0,15 % + 7,3 nA			
		0,1 mA		to	1 mA		10 Hz to 5 kHz	0,10 % + 0,51 µA			
		1 mA		to	10 mA		10 Hz to 5 kHz	0,093 % + 5,1 µA			
		10 mA		to	100 mA		10 Hz to 5 kHz	0,093 % + 51 µA			
		0,1 A		to	1 A		10 Hz to 5 kHz	0,095 % + 0,51 mA			
		1 A		to	3 A		10 Hz to 5 kHz	0,11 % + 3,4 mA			
	Alternating current meters								Direct generation with a standard calibrator	KP EL1	
		20 µA		to	200 µA		10 Hz to 45 Hz	0,12 % + 71 nA			
							45 Hz to 1 kHz	0,02 % + 40 nA			
							1 kHz to 10 kHz	0,17 % + 0,10 µA			
							10 kHz to 30 kHz	0,35 % + 0,18 µA			
		0,2 mA		to	2 mA		10 Hz to 45 Hz	0,13 % + 0,15 µA			
							45 Hz to 1 kHz	0,019 % + 90 nA			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range min.	unit		max.	unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
							1 kHz to 10 kHz	0,087 % + 0,33 µA			
							10 kHz to 30 kHz	0,20 % + 0,57 µA			
		2 mA		to	20 mA		10 Hz to 45 Hz	0,057 % + 1,6 µA			
							45 Hz to 1 kHz	0,048 % + 0,82 µA			
							1 kHz to 10 kHz	0,064 % + 1,8 µA			
							10 kHz to 30 kHz	0,11 % + 3,5 µA			
		20 mA		to	200 mA		10 Hz to 45 Hz	0,13 % + 16 µA			
							45 Hz to 1 kHz	0,019 % + 8,0 µA			
							1 kHz to 10 kHz	0,087 % + 35 µA			
							10 kHz to 30 kHz	0,14 % + 39 µA			
		0,2 A		to	2 A		10 Hz to 45 Hz	0,13 % + 0,16 mA			
							45 Hz to 1 kHz	0,024 % + 82 µA			
							1 kHz to 5 kHz	0,088 % + 0,35 mA			
							5 kHz to 10 kHz	0,26 % + 2,1 mA			
							10 kHz to 30 kHz	0,50 % + 3,0 mA			
		2 A		to	30 A		30 Hz to 45 Hz	0,053 % + 1,6 mA			
							45 Hz to 100 Hz	0,042 % + 0,89 mA			
							100 Hz to 1 kHz	0,10 % + 3,0 mA			
							1 kHz to 5 kHz	0,12 % + 3,5 mA			
							5 kHz to 10 kHz	0,64 % + 15 mA			
		0 A		to	1500 A		30 Hz to 60 Hz	0,42 % + 0,13 A	Simulation using current coil		
5	DC resistance / DC resistance meters				0,1 Ω			8,7 mΩ	Direct generation with a standard calibrator	KP EL 1	1
					1 Ω			8,9 mΩ			
					10 Ω			11 mΩ			
					100 Ω			20 mΩ			

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Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
		min.	unit	max.	unit					
				1	kΩ		0,16 Ω			
				10	kΩ		1,6 Ω			
				100	kΩ		15 Ω			
				1	MΩ		0,29 kΩ			
				10	MΩ		8,0 kΩ			
				100	MΩ		0,98 MΩ			
				1	GΩ		22 MΩ			
		0	Ω	to 100	Ω		0,018 % + 88 m Ω			
		100	Ω	to 330	Ω		0,012 % + 0,11 Ω			
		330	Ω	to 1	kΩ		0,01 % + 0,19 Ω			
		1	kΩ	to 3,3	kΩ		0,012 % + 0,29 Ω			
		3,3	kΩ	to 10	kΩ		0,0082 % + 1,4 Ω			
		10	kΩ	to 33	kΩ		0,012 % + 2,2 Ω			
		33	kΩ	to 100	kΩ		0,0066 % + 18 Ω			
		100	kΩ	to 330	kΩ		0,011 % + 24 Ω			
		330	kΩ	to 1	MΩ		0,0066 % + 0,18 kΩ			
		1	MΩ	to 3,3	MΩ		0,013 % + 0,24 kΩ			
		3,3	MΩ	to 10	MΩ		0,0075 % + 1,8 kΩ			
		10	MΩ	to 33	MΩ		0,052 % + 6,4 kΩ			
		33	MΩ	to 100	MΩ		0,064 % + 0,21 MΩ			
		100	MΩ	to 330	MΩ		1,3 % + 1,9 MΩ			
		330	MΩ	to 1	GΩ		2,4 % + 13 MΩ			

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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).

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CMC for the field of measured quantity: Time quantities

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work-place
		min.	unit	max.	unit					
1	Time interval / time meters, stopwatches, timers	1 s		to 86400 s			0,5 s	Comparison with a reference digital stopwatch	KP Č1	1

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CMC for the field of measured quantity: Humidity

Ord. number[1]	Calibrated quantity / Subject of calibration	Nominal range				Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified[2]	Calibration principle	Calibration procedure identification[3]	Work -place
		min.	unit	max.	unit					
1*	Relative humidity meters except psychrometers	10 % RH	to	95 % RH		(20 to 40) °C	2.3% RH	Comparative measurement by a reference hygrometer	KP VL1	1

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