# KZB-Kalibrace s.r.o.

Calibration Laboratory Mikoláše Alšed 2240, 434 01 Most

### CMC for the field of measured quantity: Length

Ord.	Calibrated quantity /	/ Nominal range <sup>n</sup> min. unit max. unit Par		Parameter(s) of the meas quantity	Lowest expanded	Calibration principle	Calibration	Work-			
1	Subject of calibration	min.	unit		max.	unit	Tarameter(s) of the meas. quantity	uncertainty specified <sup>2</sup>	Canoration principie	identification <sup>3</sup>	place
1	Parallel gauge blocks								Comparison with parallel gauge	Kp 01-013	
		0.5	mm	to	100	mm		$(0.8L + 0.14)  \mu m$	blocks		
		100	mm	to	500	mm		$(1L + 0.16) \mu m$			
2*	Slide gauges / slide								Measurement of parallel gauge	Kp 01-001	
	rules, depth gauges,								blocks		
	height gauges, gear										
	tooth calipers	0	mm	to	1,000	mm		14 µm			
		1,000	mm	to	2,000	mm		17 µm			
3*	Linear height gauges	_							Measurement of parallel gauge	Kp 01-001	
		0	mm	to	1,000	mm		$(1.2L + 0.5) \mu m$	blocks		
4*	Micrometer gauges /								Measurement of parallel gauge	Kp 01-002	
	micrometers,								blocks		
	pasameters,										
	micropasameters,										
	gauges	0	mm	to	25	mm		0.7.um			
	Suuges	25	mm	to	100	mm		0.7 μm 1 <i>4</i> μm			
		100	mm	to	1 000	mm		1.+ μm			
		1 000	111111	10	1,000	111111		2.2 μm			
	T 1	1,000	mm	to	1,500	mm		3.8 μm			
	I wo-contact and								Comparison with setting rings		
		3	mm	to	200	mm		1.6 um			
	Jugos Insido micromotor	5		10	200	mm		1.0 μπ	Comparison with parallal gauge		
		10	mm	to	1 500	mm		3.7 um	blocks		
5	Micrometer gauges /	10		10	1,500			5.7 μπ	Direct measurement by a length	Kn 01-002	
5	inside micrometer								gauge	150 01-002	
	gauges	10	mm	to	500	mm		$(1L + 0.4) \mu m$	00-		

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Ord.	Calibrated quantity /	d quantity / Nominal range calibration min. unit max. un			Parameter(s) of the meas quantity	Lowest expanded	Calibration principle	Calibration	Work-	
1	Subject of calibration	min.	unit	max	. unit	a ameter (s) or the meas. quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
	Micrometric heads	0 m	nm t	o 10	0 mm		1 µm			
	Setting gauges for				_					
	micrometer gauges	0 m	nm t	50	0 mm		$(1L + 0.4) \mu m$			
		0	4	. 04	0		1.0	Direct measurement on a linear		
6	Indiantora / direct	0 11		) 9:	0 mm		1.8 μ	Direct measurement by a length	Kn 01 002	
0	lever indicators and							gauge	<b>K</b> p 01-005	
	internal gauges with							Suige		
	indicator	0 m	nm te	o 10	0 mm		0.5 µm			
7*	Indicators / direct,							Direct measurement on a	Kp 01-003	
	lever indicators and							portable measuring device		
	internal gauges with	0 m	am t	. 4	0 mm		2 Q um			
8	Linear sensors	0 11					2.7 μπ	Direct measurement by a length	Kp 01-003	
Ũ		0 m	nm t	o 10	0 mm		0.5 µm	gauge		
9	Rules / precise gauges							Direct measurement by a length	Kp 01-004	
	and measuring							gauge		
	magnifiers	0 m	nm t	) 10	0 mm		0.5 µm	<u> </u>		
		0 m	en t	$\sim 20$	0 mm		2.1.um	Direct measurement by a		
		200 m	ann t	) <u>2</u> (	0 mm		2.1 μm	Interoscope		
		200 m	am t	) 40 ) 60	0  mm		2.7 μm			
	Steel rules	400 11	uni t	, 00			<i>3.1</i> μm	Comparison with a standard		
	Steer rules	0 m	nm t	o 1,00	0 mm		42 µm	gauge		
		1,000 m	nm te	o 2,00	0 mm		59 μm			
	Tape measures			· · ·			•	Comparison with a standard		
		0 m	n t	)	8 m		0.17 mm	track		
		8 m	n t	o 1	0 m		0.32 mm			

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Ord. number	Calibrated quantity /		Nom	inal r	ange		Parameter(s) of the meas quantity	Lowest expanded measurement	Calibration principle	Calibration procedure	Work-
1	Subject of calibration	min.	unit		max.	unit	Tarameter(s) of the meast quantity	uncertainty specified <sup>2</sup>	Canoration principic	identification <sup>3</sup>	place
	Tape measures,										
	wooden rulers and				100			(0.0151 0.10)			
	rulers of 2m length	0	m	to	100	m		(0.015L + 0.18)  mm			
10*	Rules / steel gauges	0		4.5	500			0.12	Measurement of parallel gauge	Kp 01-004,	
	- F	0	mm	to	500	mm		0.12 mm		Kp 01-015	
	Tape measures	0		4.5	10			$(0.071 \pm 0.10)$	Comparison with a standard	Kp 01-004	
11	<u>0: 1</u>	0	m	to	10	m		(0.07L + 0.19)  mm	gauge	IZ 01 007	
11	Setting rings and snap	0.05		to	10			1	Direct and comparative	Kp 01-005	
	gauges	0.93	mm	10	10	IIIII		$1 \mu m$	measurement on a length gauge		
		10	mm	to	275	mm		$(4.3L + 0.7) \mu m$			
	Cylindrical gauges	0	mm	to	100	mm		0.5 µm			
		100	mm	to	500	mm		1 µm			
	Slot gauges	0	mm	to	100	mm		0.5 µm			
		100	mm	to	500	mm		1 µm			
	Feeler gauges and										
	wedges	0	mm	to	100	mm		0.5 μm			
	Cylindrical gauges										
		0	mm	to	100	mm		0.5 µm			
	Measuring wires	0	mm	to	10	mm		0.5 um			
	Setting gauges for										
	layer thickness gauges	0	mm	to	25	mm		0.8 µm			
	Thread gauges – plug										
	gauges	0	mm	to	300	mm		3.1 µm			
	Thread gauges -								Direct measurement by a		
	female	5	mm	to	200	mm		4 µm	microscope		
	Thread gauges -								Direct measurement on a length		
	conical	0	mm	to	100	mm		5 µm	gauge and linear height gauge		

## KZB-Kalibrace s.r.o.

Ord. number	Calibrated quantity /	brated quantity / Nominal range ect of calibration min. unit max. un				Parameter(s) of the meas, quantity	Lowest expanded measurement	Calibration principle	Calibration procedure	Work-
1	Subject of calibration	min. u	nit	max.	unit		uncertainty specified <sup>2</sup>	Cullor and printiple	identification <sup>3</sup>	place
	Efflux viscometers							Direct measurement by a		
		0 mr	n to	10	mm		4 µm	microscope		
12*	Cylindrical gauges	_					_	Direct measurement with a	Kp 01-005	
		0 mr	n to	100	mm		2 µm	micropasameter or micrometer		
	Slot gauges	0 mr	n to	100	mm		2 µm			
	Feeler gauges and									
	wedges	0 mr	n to	30	mm		1.5 µm			
	Cylindrical gauges	0 mr	n to	30	mm		1.5 µm			
	Thread gauges – plug									
	gauges	0 mr	n to	75	mm		5 µm			
13*	Thickness gauges and					external		Comparison with parallel gauge	Kp 01-010	
	callipers	0 mr	n to	500	mm	measurement	2.2 µm	blocks or thickness standard		
						internal		Comparison with parallel gauge		
		3 mr	n to	500	mm	measurement	3.7 µm	blocks or setting rings		
14*	Dry layer thickness	0		25		1 1	1.4	Comparative measurement by a	Kp 01-009	
1.7	gauges	0 mr	n to	25	mm	dry layers	1.4 μm	thickness reference standard	<b>W</b> 01 000	
15	Wet layer thickness	0		1.5		. 1	1	Direct measurement on a length	Kp 01-009	
1.64	gauges	0 mr	n to	15	mm	wet layers	Iμm	gauge or a microscope	17 01 000	
10*	Surface plates /	0	n to	5		longth up to 200 mm	27	Comparison with parallel gauge	Кр 01-008	
	Hattless	0 III	11 10	5	111111	length up to 500 mm	5.7 μm	DIOCKS		
						up to 1,000 mm	6.2 μm			
	~ ~ ~ ~ /					up to 2,000 mm	34 µm	~		
	Surface rules /	0		-		log oth on to 1,000 million	5 1	Comparison with parallel gauge		
	straightness	0 mr	n to	5	mm	length up to 1,000 mm	5.1 µm	DIOCKS		
						up to 2,000 mm	6.2 µm	~		
	Blade rules /	0		-		1 1 1 100	2.2	Comparison with parallel gauge		
	straightness	0 mr	n to	5	mm	length up to 100 mm	2.2 μm	blocks		
						up to 300 mm	2.5 µm			

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Ord. number	Calibrated quantity /	n / Nominal range Dn min. unit max. unit Par		Parameter(s) of the meas, quantity	Lowest expanded measurement	Calibration principle	Calibration procedure	Work-			
1	Subject of calibration	min.	unit		max.	unit	r arameter (b) or the meast quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
							up to 500 mm	2.8 µm			
							up to 1,000 mm	5.1 µm			
17	Roller length gauges								Direct measurement by a special	Kp 01-014	
		0	m	to	100	m		(0.2L + 10)  mm	measuring device		
18	Laser distance meters								Comparison with a standard	Kp 01-014	
		0.5	m	to	8	m		0.3 mm	track		
19	Levelling rods				7 m				Comparison with a standard	Kp 01-014	
		0	m	to	7	m		0.3 mm	track or standard tape measure		
20	Telescopic length	_			_				Comparison with a standard	Kp 01-014	
	gauges	0	m	to	7	m		0.3 mm	track		
21	Weld gauges	0			20			10	Comparison with parallel gauge	Кр 01-015	
	0.00 1	0	mm	to	20	mm		10 µm	blocks	<b>X</b> 00 001	
22	90° angles								Comparison with parallel gauge	Kp 02-001	
	- perpendicularity	0	mm	to	5		longer side up to 100 mm	28.00	stondard		
		0	111111	10	5	111111	toliger side up to 100 mill	$2.6 \mu$ m	standard		
	1.	-					up to 1,000 mm	$(8L + 6.5) \mu\text{m}$			
	- straightness	0	mm	to	5	mm	longer side up to 100 mm	2.2 µm			
							up to 1,000 mm	5.1 µm			
	- parallelity	0	mm	to	5	mm		2.9 µm			
23	Measuring jigs and								Direct measurement on a length	Kp 01-017	
	profile gauges	0	mm	to	500	mm		$(1L + 0.4) \mu m$	gauge		
									Direct measurement on a linear		
		500	mm	to	950	mm		2 µm	height gauge		
24*	Measuring jigs and	_						_	Direct measurement with a	Kp 01-017	
	profile gauges	0	mm	to	100	mm		2 µm	micropasameter or micrometer		
		10-			• • •				Direct measurement with a slide		
		100	mm	to	300	mm		12 µm	gauge		

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Ord.	Calibrated quantity /	Non	ninal r	ange	Parameter(s) of the meas quantity	Lowest expanded	Calibration principle	Calibration procedure	Work-
1	Subject of calibration	min. unit		max. unit	Taraneter(s) of the news. quantity	uncertainty specified <sup>2</sup>	Canor aton principic	identification <sup>3</sup>	place
		300 mm	to	2,000 mm		15 µm	Comparison with parallel gauge blocks		
		2 m to 10 m 0 mm to 1,000 mm				0.5 mm	Direct measurement by a standard tape measure		
25*	Length gauges	0 mm	to	1,000 mm		$(1L + 0.14)  \mu m$	Comparison with parallel gauge blocks	Kp 01-011	
26*	Measuring microscopes and						Comparison with a standard gauge	Kp 01-019	
	profile projectors	0 mm	to	100 mm	axes X, Y	1.1 µm			
		100 mm	to	200 mm	axes X, Y	1.5 μm			
		200 mm	to	500 mm	axes X, Y	4 µm			
		0 mm	to	200 mm	Z-axis	2 μm	Comparison with parallel gauge blocks		
		per			perpendicularity of		Comparison with a standard		
		0 mm	to	500 mm	the X and Y axes	10 µm	square		

<sup>1</sup> Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02, 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.

#### **KZB-Kalibrace s.r.o.** Calibration Laboratory

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#### CMC for the field of measured quantity: Plane angle

Ord.	Calibrated quantity /		]	Nominal	range		Parameter(s) of the	Lowest expanded	Calibration principle	<b>Calibration</b>	Work-
1	Subject of calibration	min.	unit		max.	unit	meas. quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
1*	Angle gauges								Comparison with angle	Кр 02-002,	
		0 °		to	360°			2.4´	gauges	Kp 01-015	
2*	Measuring jigs and								Direct measurement by	Kp 01-017,	
	profile gauges	0 °		to	360°			0.9′	a microscope	Kp 01-015	
3*	Measuring microscopes								Comparison with angle	Kp 01-019	
	and profile projectors	0 °		to	360°			0.6′	gauges		

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### KZB-Kalibrace s.r.o.

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

Ord.	Colibrated quantity / Subject of colibration		Nom	Nominal range			Parameter(s) of the	Lowest expanded	Calibration principle	Calibration procedure	Work-
1	Canorated quantity / Subject of canoration	min.	unit		max.	unit	meas. quantity	uncertainty specified <sup>2</sup>	Canoration principic	identification <sup>3</sup>	place
1*	Torque measuring devices, torque wrenches								Comparison with a	Kp 03-001	
	and screwdrivers, pneumatic and electric						Clockwise		torque sensor		
	nutrunners	0.15	Nm	to	2	Nm		0.67 %			
		2	Nm	to	10	Nm		0.56 %			
		10	Nm	to	100	Nm		0.46 %			
		100	Nm	to	1,000	Nm		0.49 %			

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## KZB-Kalibrace s.r.o.

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

Ord. number	Calibrated quantity / Subject of calibration		Nomi	nal ra	inge	Parameter(s) of	the meas.	Lowest expanded measurement	Calibration principle	Calibration procedure	Work-
1		min.	unit		max. unit	quantity	/	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
1*	Deformation pressure gauges, digital								Comparison with a	Kp 05-001	
	pressure gauges, pressure transducers					negative			pressure gauge		
	and pressure measuring chains	-95 1	кРа	to	0 kPa	gauge pressure	gas	0.1 % + 61 Pa			
						positive gauge					
		01	кРа	to	100 kPa	pressure	gas	0.1 % + 64 Pa			
		0.1 1	MPa	to	0.7 MPa			0.1 % + 480 Pa			
		0.7 1	MPa	to	1.7 MPa			0.1 % + 1.1 kPa			
						positive gauge					
		0 1	MPa	to	0.7 MPa	pressure	liquid	0.1 % + 480 Pa			
		0.7 1	MPa	to	1.7 MPa			0.1 % + 1.1 kPa			
		1.7 I	MPa	to	7 MPa			0.1 % + 6.6 kPa			
		7 1	MPa	to	70 MPa			0.1 % + 46 kPa			
		70 1	MPa	to	100 MPa			0.72 MPa			

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#### **KZB-Kalibrace s.r.o.** Calibration Laboratory

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### CMC for the field of measured quantity: Temperature

Ord.		N	lominal	rang	ge	Parameter(s	Lowest expanded		Calibration	Work
number	Calibrated quantity / Subject of calibration	min.	unit	m	ax. un	t of the meas quantity	uncertainty specified <sup>2</sup>	Calibration principle	procedure identification <sup>3</sup>	place
1*	Indicating thermometers and temperature							Comparison with a thermometer in a	Кр 07-001	
	measuring chains	-20 ° <b>C</b>	C to	)	-5 °C		0.34 °C	calibrating oven		
		-5 °(	C t	)	50 °C		0.27 °C			
		50 °C	C t	)	100 °C		0.48 °C			
		100 ° <b>(</b>	C t	) (	650 °C		0.64 °C			
2	Non-contact thermometers	30 ° <b>(</b>	C t	)	100 °C		1.7 °C	Comparison with a target black body	Kp 07-002	
		100 ° <b>(</b>	C t	) 2	200 °C		2.6 °C			
		200 °C	C t	) (	300 °C		2.7 °C			
		300 ° <b>(</b>	C te	) 4	400 °C		3.0 °C			
		400 ° <b>0</b>	C t	)	500 °C		3.3 °C			
3*	Simulation of temperature sensor signals /							Voltage calibrator simulation	Kp 04-001	
	temperature sensor processing units	-210 °C	C t	) -	100 °C	J	0.57 °C	including cold junction compensation		
		-100 ° <b>(</b>	C t	)	150 °C		0.33 °C			
		150 ° <b>C</b>	C t	) ′	760 °C		0.38 °C			
		760 ° <b>(</b>	C t	) 1,	200 °C		0.48 °C			
		-200 °C	C t	) -	100 °C	K	0.66 °C			
		-100 ° <b>(</b>	C t	)	120 °C		0.40 °C			
		120 °C	C t	o 1,	370 °C		0.63 °C			
		-250 °C	C t	) -	150 °C	Т	1.5 °C			
		-150 °C	C t	)	400 °C		0.37 °C			
		0 °C	C te	) /	250 °C	R	1.9 °C			
		250 ° <b>C</b>	C t	) 1, <sup>*</sup>	760 °C		1.2 °C			

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Ord.			Nomin	al ra	ange		Parameter(s)	Lowest expanded		Calibration	Work-
number 1	Calibrated quantity / Subject of calibration	min.	unit		max.	unit	of the meas. quantity	uncertainty specified <sup>2</sup>	Calibration principle	procedure identification <sup>3</sup>	place
		0 °	°C	to	250	°C	S	1.9 °C			
		250 °	°C	to	1,760	°C		1.2 °C			
		600 °	°C	to	1,820	°C	В	1.8 °C			
		-200 °	°C	to	-100	°C	Ν	1.0 °C			
		-100 °	°C	to	410	°C		0.51 °C			
		410 °	°C	to	1,300	°C		0.59 °C			
		-250 °	°C	to	-100	°C	Е	1.3 °C			
		-100 °	°C	to	650	°C		0.47 °C			
		650 °	°C	to	1,000	°C		0.51 °C			
		-200 °	°C	to	900	°C	L	0.81 °C			
		-200 °	°C	to	600	°C	U	0.95 °C			
		0 °	°C	to	1,000	°C	С	0.72 °C			
		1,800 °	°C	to	2,310	°C		1.7 °C			
		-200 °	°C	to	0	°C		0.35 °C	Resistance calibrator simulation		
		0 °	°C	to	800	°C	Pt 100	0.58 °C			

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<sup>2</sup> The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02, 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.

## KZB-Kalibrace s.r.o.

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CMC for the field of measured quantity: Electrical quantities

Ord.	Calibrated quantity / Subject of	Nom	inal r	ange		Parameter(s) of the	Lowest expanded measurement	Calibration principle	Calibration procedure	Work-
number <sup>1</sup>	calibration	min. unit		max.	unit	meas. quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
1*	DC voltage sources							Direct measurement by a standard	Kp 04-001	
		0 mV	to	100 m	nV		$0.0037 \ \% + 13 \ \mu V$	multimeter		
		0.1 V	to	1 V	/		$0.0025 \ \% + 37 \ \mu V$			
		1 V	to	10 V	1		$0.0024 \ \% + 0.36 \ mV$			
		10 V	to	100 V	/		0.0038 % + 3.6 mV			
		100 V	to	1,000 V	/		0.0041 % + 36 mV			
	DC voltage meters							Direct generation with a standard		
		0 mV	to	100 m	nV		$0.008 \ \% + 12 \ \mu V$	calibrator		
		0.1 V	to	1 V	1		$0.008 \ \% + 35 \ \mu V$			
		1 V	to	10 V	1		$0.008 \ \% + 0.35 \ mV$			
		10 V	to	100 V	/		0.008 % + 3.5 mV			
		100 V	to	1,000 V	/		0.008 % + 35 mV			
2*	Direct current sources							Direct measurement by a standard		
		0 μΑ	to	100 µ	ιA		0.05 % + 37 nA	multimeter		
		0.1 mA	to	1 m	nA		$0.05~\% + 0.12~\mu A$			
		1 mA	to	10 m	nA		$0.05 \ \% + 2.5 \ \mu A$			
		10 mA	to	100 m	nA		$0.05 \ \% + 14 \ \mu A$			
		100 mA	to	400 m	nA		$0.05 \ \% + 73 \ \mu A$			
		0.4 A	to	1 A	A		0.05 % + 0.3 mA			
		1 A	to	3 A	A		0.10 % + 0.8  mA			
		3 A	to	10 A	A		0.15 % + 1.6 mA			
	Direct current meters							Direct generation with a standard		
		0 μΑ	to	100 µ	ιA		0.03 % + 35 nA	calibrator		
		0.1 mA	to	1 m	nA		$0.03~\% + 0.12~\mu A$			
		1 mA	to	10 m	nA		$0.03~\% + 1.2~\mu A$			

## KZB-Kalibrace s.r.o.

Ord.	Calibrated quantity / Subject of	Noi	ninal r	ange	Parameter(s) of the	Lowest expanded	Calibration principle Calibration principle proceed identifice	Calibration	Work-
number <sup>1</sup>	calibration	min. un	it	max. unit	meas. quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place
		10 mA	to	100 mA		0.03 % + 12 µA			
		0.1 A	to	1 A		$0.03 \ \% + 0.18 \ mA$			
		1 A	to	10 A		0.05 % + 2.4 mA			
		0 A	to	500 A		0.50 % + 0.49 A	Simulation using current coil		
3*	AC voltage sources						Direct measurement by a standard	Kp 04-001	
		0.1 mV	to	100 mV	10 Hz to 20 kHz	$0.06 \% + 54 \mu V$	multimeter		
		0.1 V	to	1 V	10 Hz to 20 kHz	0.06 % + 0.36 mV			
		1 V	to	10 V	10 Hz to 20 kHz	0.06 % + 3.6 mV			
		10 V	to	100 V	10 Hz to 20 kHz	0.06 % + 37 mV			
		100 V	to	1,000 V	10 Hz to 20 kHz	0.06 % + 0.29 V			
	AC voltage meters						Direct generation with a standard		
		0.1 mV	to	100 mV	10 Hz to 2 kHz	$0.08 \ \% + 43 \ \mu V$	calibrator		
		0.1 V	to	1 V	10 Hz to 2 kHz	0.08 % + 0.39 mV			
		1 V	to	10 V	10 Hz to 2 kHz	0.08 % + 4.0 mV			
		10 V	to	100 V	40 Hz to 1 kHz	0.08 % + 43 mV			
		100 V	to	1,000 V	40 Hz to 1 kHz	$0.08 \ \% + 0.60 \ V$			
4*	Alternating current sources						Direct measurement by a standard		
		0.1 μΑ	to	100 µA	10 Hz to 2 kHz	0.15 % + 80 nA	multimeter		
		0.1 mA	to	1 mA	10 Hz to 2 kHz	$0.10 \ \% + 0.54 \ \mu A$			
		1 mA	to	10 mA	10 Hz to 2 kHz	$0.15 \ \% + 7.5 \ \mu A$			
		10 mA	to	100 mA	10 Hz to 2 kHz	$0.10 \ \% + 56 \ \mu A$			
		100 mA	to	400 mA	10 Hz to 1 kHz	0.10 % + 0.51  mA			
		0.4 A	to	1 A	10 Hz to 2 kHz	0.10 % + 0.8  mA			
		1 A	to	3 A	10 Hz to 2 kHz	0.15 % + 2.4 mA			
		3 A	to	10 A	10 Hz to 2 kHz	0.15 % + 16 mA			

# KZB-Kalibrace s.r.o.

Ord.	Calibrated quantity / Subject of	Nomi	nal ra	inge	Parameter(s) of the	Lowest expanded measurement	Calibration principle	nded Calibration principle pro-		Work-
number <sup>1</sup>	calibration	min. unit		max. unit	meas. quantity	uncertainty specified <sup>2</sup>		identification <sup>3</sup>	place	
	Alternating current meters						Direct generation with a standard			
		0.1 μΑ	to	100 µA	10 Hz to 2 kHz	$0.1 \ \% + 0.47 \ \mu A$	calibrator			
		0.1 mA	to	1 mA	10 Hz to 2 kHz	$0.1~\% + 0.96~\mu A$				
		1 mA	to	10 mA	10 Hz to 2 kHz	$0.1 \% + 9.5 \ \mu A$				
		10 mA	to	100 mA	10 Hz to 2 kHz	$0.1 \ \% + 96 \ \mu A$				
		0.1 A	to	1 A	10 Hz to 2 kHz	0.1 % + 0.95  mA				
		1 A	to	10 A	10 Hz to 2 kHz	0.1 % + 20 mA				
		0 A	to	500 A	30 Hz to 60 Hz	0.34 % + 0.071 A	Simulation using current coil			
5*	DC resistance / resistors and						Direct measurement by a standard	Kp 04-001		
	resistance boxes	$0 \ \Omega$	to	10 Ω		$0.01 \% + 12 \text{ m}\Omega$	multimeter	Kp 04-002		
		$10 \ \Omega$	to	100 Ω		$0.01 \% + 58 \text{ m}\Omega$				
		100 Ω	to	1 kΩ		$0.01 \% + 59 \text{ m}\Omega$				
		1 kΩ	to	$10 \text{ k}\Omega$		$0.01~\% + 0.17~\Omega$				
		10 kΩ	to	$100 \text{ k}\Omega$		$0.01 \ \% + 2.1 \ \Omega$				
		0.1 MΩ	to	1 MΩ		$0.01 \ \% + 32 \ \Omega$				
		1 MΩ	to	10 MΩ		$0.04 \ \% + 1.3 \ k\Omega$				
		10 MΩ	to	100 MΩ		$0.8 \% + 35 \text{ k}\Omega$				
		100 MΩ	to	$1 \text{ G}\Omega$		$2.0~\% + 0.21~M\Omega$				
		0.01 Ω	to	$0.1 \ \Omega$		65 μΩ	Ohm method	Kp 04-002		
		0.1 Ω	to	1 Ω		0.052 %				
		1 Ω	to	$10 \ \Omega$		0.14 %				
	DC resistance meters						Direct generation with a standard	Kp 04-001		
		$0 \ \Omega$	to	$10 \ \Omega$		20 mΩ	calibrator			
		10 Ω	to	100 Ω		$40 \text{ m}\Omega$				
		100 Ω	to	1 kΩ		0.27 Ω				
		1 kΩ	to	$10 \text{ k}\Omega$		2.4 Ω				
		10 kΩ	to	$100 \text{ k}\Omega$		24 Ω				

## KZB-Kalibrace s.r.o.

Ord.	Calibrated quantity / Subject of	No	minal r	ange	Parameter(s) of the	Parameter(s) of the meas. quantityLowest expanded measurement uncertainty specified2	Calibration principle	Calibration	Work-
number <sup>1</sup>	calibration	min. un	it	max. unit	meas. quantity			identification <sup>3</sup>	place
		0.1 MG	2 to	1 MΩ		0.24 Ω			
		1 MG	2 to	10 MΩ		5.8 kΩ			
							Direct generation using a standard		
		0.1 MΩ	2 to	0.5 MΩ		$0.05 \% + 10 \Omega$	resistance box		
		0.6 MΩ	2 to	0.9 MΩ		$0.05 \% + 15 \Omega$			
		1 MC	2 to	5 ΜΩ		$0.05 \ \% + 0.25 \ k\Omega$			
		6 MΩ	2 to	9 MΩ		$0.05 \ \% + 0.35 \ k\Omega$			
		10 MΩ	2 to	50 MΩ		$0.05~\% + 2.5~k\Omega$			
		50 MΩ	2 to	100 MΩ		$0.05 \% + 9 k\Omega$			
6	Inspection equipment / insulation				Measuring		Direct generation using a standard	Kp 04-003	
	resistance meters				voltage up to		resistance box	ľ	
		10 kΩ	to	100 kΩ	100 V	$0.05 \% + 13 \Omega$			
		0.1 MΩ	2 to	0.5 MΩ		$0.05 \% + 10 \Omega$			
		0.6 MΩ	2 to	0.9 MΩ		$0.05 \% + 15 \Omega$			
					Measuring				
		1.140		5 140	voltage up to				
		I MS	2 to	$5 M\Omega$	500 V	$0.05 \% + 0.25 \text{ k}\Omega$			
		6 M <u>C</u>	2 to	9 MΩ		$0.05 \% + 0.35 \text{ k}\Omega$			
					Measuring				
		10 MC	) to	50 MO	voltage up to	0.1.04 + 2.51cO			
		10 MG		100 MO	1,000 V	0.1 % + 2.5 KS2			
		0.1.0	2 10	1.0		0.1 % + 9 KS2			
	meters of transition resistance	0.1 \Q	to	10.0		$0.2 \% + 3.7 \text{ m}\Omega$			
		ΙΩ 10.0	to	10 \\ 2		$0.1 \% + 4.7 \text{ m}\Omega$			
		10 Ω	to	100 \\ \		$0.05 \% + 17 m\Omega$			
		100 Ω	to	1,000 Ω		$0.05 \% + 0.13 \Omega$			
		1 kΩ	to	10 kΩ		$0.05 \% + 1.3 \Omega$			

### KZB-Kalibrace s.r.o.

#### Calibration Laboratory Mikoláše Alšed 2240, 434 01 Most

Ord. number <sup>1</sup>	Calibrated quantity / Subject of calibration	Nom	inal ra	ange	Parameter(s) of the meas. quantity	Lowest expanded	Calibration principle	Calibration procedure identification <sup>3</sup>	Work- place
		min. unit		max. unit		uncertainty specified <sup>2</sup>			
	meters of leakage current						Direct measurement by a standard		
		0.1 mA	to	1 mA	50 Hz to 60 Hz	$0.10 \ \% + 0.54 \ \mu A$	ammeter		
		1 mA	to	10 mA	50 Hz to 60 Hz	$0.15 \ \% + 7.5 \ \mu A$			
		10 mA	to	100 mA	50 Hz to 60 Hz	$0.10 \ \% + 56 \ \mu A$			

<sup>1</sup> Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02, 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.

### KZB-Kalibrace s.r.o.

Calibration Laboratory Mikoláše Alšed 2240, 434 01 Most

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

Ord. number	Calibrated quantity / Subject of calibration		Nomi	nal range		Parameter(s)	Lowest expanded	Calibration principle	Calibration procedure identification <sup>3</sup>	Work-
	Canorated quantity / Subject of canoration	min.	unit	max.	unit	quantity	uncertainty specified <sup>2</sup>			place
1*	Time interval / mechanical and digital							Comparison with a standard counter	Kp 06-001	
	stopwatch, timers and other time meters	5 s	s	to 3,600	0 s		11 ms			

<sup>1</sup> Asterisk at the ordinal number identifies the calibrations, which the Laboratory is qualified to carry out outside the permanent laboratory premises.

The expanded measurement uncertainty is in accordance with ILAC-P14 and EA-4/02, 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.