The Appendix is an integral part of
Certificate of Accreditation No: 603/2023 of 14/11/2023

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

EHSQ CONSULTING, s.r.o.
CAB number 2364, Calibration Laboratory
Blatec 48, 783 75 Blatec

CMC for the field of measured quantity: Length

Ord. number [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]	Work-place
		min	unit	max	unit					
1	Setting and check rings	3 mm	to	6 mm			(9·L + 3.0) µm	Measurement on a length gauge	KPD01KN	
		6 mm	to	300 mm			(10·L + 0.8) µm			
2	Parallel gauge blocks	0.5 mm	to	100 mm			(5·L + 0.2) µm	Measurement on a parallel gauge block comparator	KPD02MK	
3	Cylindrical and slot gauges, measuring cylinders and setting gauges	0 mm	to	600 mm			(9·L + 0.7) µm	Measurement on a length gauge	KPD03KV	
4	Snap gauges	3 mm	to	6 mm			(10·L + 3.0) µm	Measurement on a length gauge or a profile projector	KPD04KT	
		6 mm	to	300 mm			(15·L + 0.8) µm			
5	Feeler gauges	0 mm		10 mm			0.7 µm	Measurement on a length gauge	KPD05SL	
6	Thread gauges							Measurement on a length gauge	KPD06KZ	
	male gauge	0 mm	to	300 mm			(10·L + 2.6) µm			
	ring	3 mm	to	300 mm			(10·L + 3.1) µm			
7	Thread-measuring wires	0.17 mm	to	6.35 mm			0.5 µm	Measurement on a length gauge	KPD07DZ	
8	Slide gauges	0 mm	to	2000 mm			(20·L + 20) µm	Measurement by parallel gauge blocks	KPD11MP	
9	Micrometers	0 mm	to	1,000 mm			(14·L + 1.3) µm	Measurement by parallel gauge blocks	KPD12MT	
10	Dial indicators								KPD13UC	
	direct, lever	0 mm	to	100 mm			(16·L + 0.8) µm	Measurement on a length gauge		
	with arms	0 mm	to	200 mm			(17·L + 3.0) µm	Measurement by setting rings and parallel gauge blocks		
11	Mechanical sliding depth gauges	0 mm	to	600 mm			(15·L + 12) µm	Measurement by parallel gauge blocks	KPD14HP	
12*	Mechanical height gauges	0 mm	to	1,000 mm			(15·L + 1.4) µm	Measurement by parallel gauge blocks	KPD15VP	
13	Inside micrometer gauges	0 mm	to	1,000 mm			(15·L + 1.4) µm	Measurement on a length gauge	KPD16OM	
14	Internal gauges								KPD17DT	
	two-contact	0 mm	to	600 mm			(15·L + 1.4) µm	Measurement on a length gauge		
	three-contact	3 mm	to	200 mm			(17·L + 2.0) µm	Measurement by setting rings		

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		min	unit	max	unit					
15	Pasameters	0 mm	to	300 mm			(8·L + 0.8) µm	Measurement by parallel gauge blocks	KPD18PM	
16	Steel gauges – rigid, thin, flexible, tape	0 mm	to	5,000 mm			0.15 mm	Comparison with a rigid steel gauge	KPD09OM	
17	Surface rules	100 mm	to	1,000 mm			7 µm	Using parallel gauge blocks on a surface plate	KPD19PP	
		500 mm	to	2,000 mm			(1.2·L + 5.2) µm	Measurement with an electronic level		
18*	Surface plates	0 mm	to	3,000 mm			(1.2·M + 5.2) µm	Measurement by an electronic level	KPD20PD	
19	Thickness gauges								KPD21SV	
	surface layers	0 mm	to	2 mm			9.0 µm	Measurement using sheets		
	of wall thickness	0 mm	to	200 mm			(14·L + 12) µm	Using reference gauges		
20	Thread gauges, radius gauges, gauges, measuring jigs and templates	0 mm	to	200 mm			(20·L + 4.0) µm	Measurement on a profile projector	KPU34MP	
21	Flat, trying and knife angles	0 mm	to	630 mm			(15·M + 6.0) µm	Measurement of deviation from perpendicularity with a height gauge and dial gauge	KPU31UL	
22*	Length gauges, profile projectors, microscopes, devices with a linear measuring system	0 mm	to	3,000 mm			(2·L + 0.2) µm	Measurement by a laser interferometer	KPD10LI	
		0 mm	to	300 mm			(12·L + 2.0) µm	Measurement with a reference gauge		
23	Roughness meters	0.1 µm	to	6.4 µm			(8 % + 0.20) µm	Measurement by a roughness standard	KPD22DR	
24	Roughness standards	0.1 µm	to	6.4 µm			(8 % + 0.20) µm	Measurement by a roughness meter	KPD22DR	

[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:

L Calibrated length

M Calibrated area

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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 measurand	Lowest stated expanded measurement uncertainty [2]	Calibration principle	Calibration procedure identification [3]	Work-place
1	Plane angle meters	0	°	to	360	°		2´	Using angle gauges and sine ruler	KPU32MU	
2	Levels										
	- Mechanical	0	mm/m	to	2	mm/m		(3.5·α + 5.2) µm/m	Using an electronic level	KPU33LV	
	- Builder's	0	mm/m	to	2	mm/m		0.2 mm/m	Using a dial indicator		
3	Thread gauges, radius gauges, gauges, measuring jigs and templates	0	°	to	360	°		4´	Measurement on a profile projector	KPU34MP	
4*	Rotary angle sensors and torque tools	0	°	to	360	°		0.2°	Comparison with a rotation angle sensor	KPU32MU	

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α angle in mm/m

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CMC for the field of measured quantity: Mechanical motion

Ord. number[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]	Work place
1*	Acceleration of linear harmonic mechanical vibrations / vibration calibrators, vibrometers, vibration systems[4,5]	0.1 $m \cdot s^{-2}$		to	500 $m \cdot s^{-2}$		3 Hz to 10 kHz	1 %	Measurement or comparison on a standard calibration device	KPV01VZ	
		1 mV		to	7 V		3 Hz to 10 kHz	1 %	By simulated electrical signal		
2*	Frequency of mechanical linear motion	3 Hz		to	10 kHz		0.1 to 500 $m \cdot s^{-2}$	1 %	Measurement or comparison on a standard calibration device	KPV01VZ	
3*	Sensitivity of vibration sensors by vibration – sine signal[4,5]						3 Hz to 10 kHz	1 %	Measurement on a standard calibration device	KPV01VZ	
	– acceleration, 0.1 $m \cdot s^{-2}$ to 500 $m \cdot s^{-2}$	0.01 pC / $m \cdot s^{-2}$		to	1,000 pC / $m \cdot s^{-2}$						
		0.01 mV / $m \cdot s^{-2}$		to	10,000 mV / $m \cdot s^{-2}$						
	– velocity up to 0.4 $m \cdot s^{-1}$	0.01 pC / $m \cdot s^{-1}$		to	1,000 pC / $m \cdot s^{-1}$						
		0.01 mV / $m \cdot s^{-1}$		to	10,000 mV / $m \cdot s^{-1}$						
	– deviation up to 5mm	0.01 pC / mm		to	1,000 pC / mm						
		0.01 mV / mm		to	10,000 mV / mm						
4	Sensitivity of vibration sensors[5]						1 Hz to 5 kHz	1.5 %	Measurement on a standard calibration device	KPV01VZ	
	– angular acceleration up to 5,300 $° \cdot s^{-2}$	0.01 mV / $° \cdot s^{-2}$		to	10,000 mV / $° \cdot s^{-2}$						
	– angular velocity up to $2.5 \cdot 10^6$ $° \cdot s^{-1}$	0.01 mV / $° \cdot s^{-1}$		to	10,000 mV / $° \cdot s^{-1}$						
	– angular deviation up to 30 °	0.01 mV / °		to	10,000 mV / °						

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Ord. number[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]	Work place
5	Sensitivity of vibration sensors[5] by mechanical shock – half-sine signal	0.01 pC / m·s^{-2} 0.01 mV / m·s^{-2}		to to	1,000 pC / m·s^{-2} 10,000 mV / m·s^{-2}		50 m·s^{-2} to 1·10^{5} m·s^{-2}	1.5 %	Measurement on a standard calibration device	KPV01VZ	
6*	Rpm meters	6 min^{-1} 6 s^{-1}		to to	8,000 min^{-1} 10^{5} s^{-1}			(0.2 + 1d) (0.001% +1d)	Contact method Contactless method	KPV01VZ	

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[4] Acceleration can be specified also in g, sensor sensitivity in pC/g, resp. mV/g units, where 1 g = 9.806 m.s^{-2}

[5] The values for (angular) acceleration, velocity and deviation are equivalent and can be freely converted to each other.

Explanatory notes:

d Scale division of a calibrated meter

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CMC for the field of measured quantity: Force – moment of force

Ord. number[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]	Work-place
		min	unit	max	unit					
1	Torque wrenches and screwdrivers	0.02	Nm	1,000	Nm		0.7 %	Comparison with a standard torque sensor	KPM41KM (ČSN EN ISO 6789-2)	
2	Torque sensors and calibration devices	0.01	Nm	100	Nm		0.2 %	Measurement by torque arms and weights	KPM42SM (ČSN EN ISO 6789-2)	
		20	Nm	1,000	Nm		0.2 %	Comparison with reference torque wrenches		
3*	Tighteners and tightening devices	0.02	Nm	500	Nm		1.2 %	Comparison with a standard torque sensor	KPM43UM	
4	Load cells, dynamometres	0	N	200	N	tension, pressure	0.1 % +1 mN	Measurement by standard weights	KPS01SL (ČSN EN ISO 376)	
5	Testing devices, presses, load cells	0	N	10	kN	tension, pressure	0.2 % + 0.01 N	Measurement by standard dynamometer	KPS01SL (ČSN EN ISO 376, ČSN EN ISO 7500-1)	

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