

SCS Register

Accreditation Number: SCS 0169

International Standard: ISO/IEC 17025:2017
 Swiss standard: SN EN ISO/IEC 17025:2018

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Scope of accreditation as of 17.08.2023

Calibration laboratory for magnetic measurement quantities

Calibration and Measurement Capabilities (CMC)

Measurement quantity / Object to be calibrated	Measurement range	Measurement conditions	Best measurement uncertainty \pm ¹⁾	Remarks
Flux density of static magnetic field Calibration of Magnetometers	1 mT ... < 38 mT		300 μ T/T + 3.6 μ T	Comparison with NMR-calibrated Hall probe above 38 mT and linearized
	38 mT ... < 30 T		5 μ T/T	Comparison with NMR magnetometer: 38 mT .. 3 T: Measurement in Electromagnet 1.5 T, 3 T, 7 T, 9.4 T & 14.1 T: Fixed-field measurement in Superconducting magnets



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Measurement quantity / Object to be calibrated	Measurement range	Measurement conditions	Best measurement uncertainty \pm ¹⁾	Remarks
Flux density of alternating magnetic field				
Calibration of magnetometers	100 μ T ... < 8 mT	< 3 kHz	100 μ T/T	Comparison with Fluxmeter using a coil whose surface is calibrated
Static magnetic field generator				
Calibration or mapping of magnets generating static fields	1 mT ... < 38 mT		300 μ T/T + 3.6 μ T	Measurement with NMR calibrated Hall probe above 38 mT and Linearized
	38 mT ... < 30 T		5 μ T/T	NMR magnetometer measurement
AC magnetic field generator				
Calibration or mapping of magnets generating alternating fields	100 μ T ... < 8 mT	< 3 kHz	100 μ T/T	Comparison with Fluxmeter using a coil whose surface is calibrated
Effective magnetic surface according to Faraday's law				
Magnetic field measuring coil surface	0.01 m ² ... < 0.10 m ²		60 mm ² /m ²	By NMR measurement of a field of reference then field variation and integration of the induced voltage (Faraday's law of induction)
	0.10 m ² ... < 1.00 m ²		29 mm ² /m ²	
	1.00 m ² ... < 10.00 m ²		22 mm ² /m ²	
Frequency				
Calibration of frequency generators	1 MHz ... < 1000 MHz		10 mHz/MHz	By counting a reference frequency of 10 MHz

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DC voltage Voltmeter calibration	100 mV 1 V 10 V 100 V		25 μ V/V + 3 μ V 18 μ V/V + 6 μ V 13 μ V/V + 40 μ V 18 μ V/V + 600 μ V	Comparison with a voltmeter

In the event of contradictions in the language versions of the registers, the French version shall prevail.

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1) The given extended measurement uncertainty is the standard uncertainty about the measurement result multiplied by the enlargement factor $k = 2$ which, for a Gaussian distribution, corresponds to a confidence level of about 95%.