

Electricity and Magnetism

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Electricity and Radiation Department

Tasks:

- Maintenance and development of standards and measurement facilities of electric and magnetic quantities.
- Transfer of electric and magnetic quantities measures units maintaining the traceability by performing calibrations of measurement equipment for interested entities (e.g. regional administration of measures, measuring laboratories, industry).
- Conformity assessment tests of electric energy meters,
- Electromagnetic compatibility (EMC) tests for conformity assessment and type approval of measurement equipment being subject to legal metrology control.
- Research and development work related to electrical metrology,
- Development and implementation of innovative measurement methods for particular electric and magnetic quantities.
- Organization and leading interlaboratory comparisons and participation in international comparisons.

Services:

1. Electrical Quantities Standards Section – performs calibrations of:
 - DC voltage sources,
 - DC resistance standards: fixed resistor, resistance box,
 - precision thermometer,
 - DC resistance meters
2. Low Frequency Electrical Quantities Section – performs calibrations of:

- calibrators, reference multimeters and digital meters,
- thermal voltage and current converters for TVC, TTC and AC/DC transfers,
- capacitors, induction coils, AC resistors,
- devices for impedance measurements e.g. the RLC meters and bridges, impedance analyzers.

3. Electrical Power Engineering Measurements Section – performs calibrations of:

- AC electrical power and energy meters, single - and three phase,
- AC electrical power and energy calibrators,
- instrument transformers,
- burdens for instrument transformers,
- bridges for calibration of instrument transformers,
- AC high voltage meters.

Furthermore, the section performs tests of meters of active electric energy of alternating current for conformity assessment within the notified body (JN 1440) for compliance with MID requirements.

Section also issues opinions on documentation attached to applications for the verification of electricity meters in the aspects of technical equipment, measurement procedures and uncertainty calculations.

4. Microwaves, Electromagnetic Field and Electromagnetic Compatibility Section – performs calibrations of:

- high frequency (hf) power meters,
- hf power sensors,
- hf voltmeters,
- hf attenuators,
- hf measuring receivers,
- passive elements in the scope of scattering parameters,
- constant and alternating magnetic field strength meters (probes),
- electric field strength meters (probes),
- permanent magnets.

Furthermore, the section performs electromagnetic compatibility tests for conformity assessments and type approvals of measurement equipment being subject to legal

metrology control.

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