



ELECTRIC DRIVES LABORATORY

Main objectives and activities of the laboratory

- we offer design of electric drives for specific industrial applications,
- we offer design and feasibility studies in industrial automation,
- we ensure the implementation of projects,
- we offer collaboration in the field of CNC systems implementation by Bernecker + Rainer,
- we are able to prepare CNC devices for a particular technology (laser, machining, manipulators, 3D printers, etc.)
- we offer diagnostics of electrical machines, measurement of parameters, determination of cause of defect, technical analysis in supplier-consumer disputes.

Professional focus of the laboratory

- implementation of industrial control systems Bernecker + Rainer, SIEMENS, MAXON, Faulhaber and others,
- electrical drives, especially multi-axis systems, electronic shafts, cams, synchronization and interpolation of individual axes according to the required trajectory,
- modern industrial system programming methods for Industry 4.0,
- control of kinematic CNC systems,

- recuperation of electricity through active rectifiers to the electricity grid.

Specific equipment

- technical documentation is created in the E-plan program,
- software for industrial systems AutomationStudio, TIA portal, ESCON Setup and FAULHABER Motion Manager,
- our SW is in accordance with IEC 61131-3 standard,
- automatically controlled DYNOFIT VUES ASD 6,3K-4 dynamometer (3,000 rpm, 40 Nm)
- climate chamber -50 to 120 °C,
- test stands for electric drives with ACOPOS servo amplifiers,
- 3f programmable source 3 × 2000 VA (0–300 V AC, 15–1200 Hz + DC),
- insulation tester (AC 5 kV, 20 mA, 5 kV, 5 mA),
- teslameter (0.3 mT – 3 T),
- electronic resistance load.



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