

DR.-ING. HEINZ REICHERT

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PROFILE

Senior Development Engineer with a Technical Lead profile and extensive expertise in highly reliable high-voltage systems, mechanical development, mechatronics, materials science, and robust design for safety-critical applications. Demonstrated contributions to system architecture, simulation-based risk mitigation, prototype development, validation, supplier coordination, and patent-relevant innovations for electromechanical assemblies. Space experience through NASA-affiliated research, microgravity experiments, and test bench development; suitable for roles as Principal Engineer, Technical Lead, or specialized consultant in high-voltage, mobility, and space-related engineering environments.

PROFESSIONAL EXPERIENCE

ZF Friedrichshafen AG – Senior Development Engineer HV-Systems (2014–2025)

- Developed mechanical and electromechanical HV mechanisms that increased design robustness for plug-in systems, screwless connections, and solenoid valve interfaces
- Created modular HV PDUs and flexible power distribution modules with patent-pending innovation potential
- Automatic coupling mechanism for HV truck-trailer links
- Used FEM/MKS analyses to reduce structural, vibration, and tolerance-related development risks before validation
- Led prototyping, environmental testing, and validation to support production-relevant reliability decisions
- Coordinated suppliers and technical specifications to align design intent, validation scope, and implementation feasibility

ZF Friedrichshafen AG – Development Engineer electric vehicle drives (2010–2013)

- Developed and validated HV-AC power connections for demanding electric-drive environments
- Applied FEM vibration analysis to improve battery and inverter design confidence
- Used CFD-based Li-ion cell cooling analysis to support thermal performance and reliability decisions
- Integrated flywheel energy storage concepts into electric vehicle drive development
- Contributed to patented electrically synchronized gear shifting technology

ZF Friedrichshafen AG – Development Engineer automatic transmissions (2005–2010)

- Designed parking lock mechanisms for automatic transmission applications requiring high functional reliability
- Used FEM/MKS simulations and tolerance analyses to improve functional robustness early in development
- Contributed to simultaneous engineering across USA and Canada interfaces to accelerate cross-site development alignment

Further technical experience (1992-2004)

ZF Getriebe GmbH, Mann+Hummel, Kontec (Porsche, AMG, Mercedes), Freelance: CAD design, fixtures, prototypes, small-series motorsport production, microgravity

Teledyne Brown Engineering – Space Programs Division (USA, 1986–1988)

- Power supply/data handling for MEMPF (Space Shuttle)
- 6-meter drop tube test rig for non-contact temperature measurement

STUDIES

Dr. rer. nat. Materialforschung – Max-Planck-Institut Stuttgart
Dipl.-Ing. Maschinenwesen – Universität Stuttgart (ZARM-Preis)

COMPETENCIES

Mechanical and Mechatronic Development: Mechanisms, locking mechanisms, electromechanical assemblies, actuators
Simulation: FEM, CFD, MBS, vibration, thermal analysis, tolerance analysis
CAD/PLM: SolidWorks, Catia V4, ProEngineer/PTC-Creo, Axalant, Windchill
High-Reliability Systems: High-voltage interconnect technology, power distribution, environmental testing
Materials Science: Fracture mechanics, technical ceramics, thermal shock
Technical Leadership: Supplier coordination, specifications, DOORS, testing, validation, and decision support for high-reliability systems
Languages: German, English, French (basic knowledge)

TEACH

Lecturer in Measurement Technology II, RWU Weingarten (since 2025)