

Job Title – Principal Power Electronics Engineer

Date position required:	June 2017
Reports:	None
Salary:	Competitive
Benefits:	Pension
Site:	hofer powertrain UK, Warwick Innovation Centre, Warwick, CV34 6UW
Applications required by:	ASAP
Application format:	CV and covering letter

hofer powertrain – Part of the hofer AG (Group)

hofer, established in the 1980's, is a privately owned, German based, automotive engineering consultancy growing to in excess of 1,000 people over the next few years. We work with many of the world's automotive OEMs, Tier 1 suppliers and automotive technology centres and have numerous powertrain components in mass production; including hofer designed electric motors and hybrid modules to full dual clutch transmissions.

With numerous offices across Germany, Austria, Italy, America, China and the UK, hofer has a truly global presence allowing comprehensive support for powertrain projects across all vehicle sectors.

- Specific sites setup to support many of the German OEMs
- hofer mechatronik GmbH (Part of the hofer group) is the largest independent automotive hydraulics consultancy in the world
- Involved in many current and future AT, AMT, DCT and MT volume transmission design projects from clean sheet to production
- hofer has its own inverter / electric control technology and has designed hybrid modules and e-motors that are in production across the world
- Full design to production experience of hybrid powertrain technologies from energy storage to the road
- Full engine and motor driven test capability
- Production supplier to VAG group

As part of hofer group's global growth, and the continuing expansion of hofer powertrain UK, a vacancy has arisen for a Principal Power Electronics Engineer to join the business at the Warwick office.

Reporting to the Chief Engineer of Electrical Systems, hofer powertrain UK seeks a Power Electronics Engineer with experience of developing e-machine/motor control power electronics for production; particularly for automotive traction applications in EV and hybrid vehicles at system power levels from 50kW to >750kW.

The hofer powertrain UK Electrical department is currently involved in the customer-facing delivery of both hybrid and pure electric drivetrain solutions, supported by a team of over 110 e-machine; power electronics; electronic hardware and software specialists based in Würzburg and Lenting, Germany.

The key functions of the role:

Lead the design and delivery of motor control power electronics for a variety of customer applications, interfacing directly with the design teams in the UK and Germany and/or the appropriate hofer project team.

Capture and manage inverter hardware requirements, developing into specifications; schematics; PCB layouts and drawings, ensuring alignment between internal team(s), suppliers and the customer.

Design and develop inverter hardware, including gate drivers; control boards; DC link components and selection and characterisation of power modules. Use intelligent design to deliver modular and scalable solutions; often based on internal inverter platform development.

Management and definition of inverter mechanical interfaces and requirements, to include thermal system.

Develop customer inverter components to the agreed requirements and processes, from concept level through to production.

Contribute to system and lead inverter-level safety case development, and follow industry standard techniques to ensure a robust design, e.g. FMEA.

Plan and action Design Verification (DV) and Production Validation (PV) activity at a component level.

Manage interfaces between the inverter and the rest of the e-powertrain system, liaising with cross-functional teams within hofer and the customer.

Liaison with, including travel to, other hofer sites in order to co-ordinate design activities and ensure delivery is in line with the programme requirements.

Qualifications / Education / Experience required:

Degree or equivalent in a relevant Engineering or Science related discipline.

A minimum of 10 years' demonstrable power electronics design experience in an automotive or similar engineering environment.

Proven experience of developing inverters for production applications and understanding their interfaces and integration into the powertrain system(s) and vehicle.

Verifiable experience in inverter Specification; Requirements Capture/Management and DV and PV processes.

Strong background and knowledge of power electronics, analogue and digital circuits and schematic capture and development. Highly familiar with IGBT and future power switching technologies.

Good understanding of automotive HV standards; design methodologies and working practices.

Experience of designing power electronics in accordance with ISO26262 Functional Safety processes and concepts, and an understanding of what this means for hardware design processes and the design realisation.

Solid understanding of asynchronous and synchronous motor control theory, and motor position sensing technologies.

Confident user of MS Office products and competent user of industry-standard network and calibration tools, e.g. Vector CANalyzer, Vector CANape, ETAS INCA.

Experienced user of electronic CAD packages (e.g. Altium designer) and simulation packages (e.g. PSpice, LTSpice).

Other beneficial attributes:

An understanding of the implementation of automotive-qualified microcontrollers, specific experience with the Infineon Aurix family would be advantageous.

Experience of inverter design for driving multiple windings systems.

Familiarity with mechanical CAD packages such as CATIA or Creo.

Knowledge of German or other European languages.

Personal attributes:

Excellent attention to detail with good planning skills.

Strong communicator, capable of interacting with cross-functional teams both internally and externally.

Highly self-motivated and independent, with a willingness to seek guidance and involve others whenever required.

Remain focussed under pressure, familiar with working outside their normal comfort zone.

Proven record of operating in a customer-facing environment.