

Senior Engineer, Power Electronics

VerdeGo is seeking a Senior level technical expert in electrical and electronic systems as applied to hybrid-electric power generation and related systems for aviation. The successful candidate will demonstrate significant experience with operational hardware across multiple and varied projects in aviation, automotive, or other industries characterized by high quality standards, focus on efficiency, and innovative technology.

The successful candidate must have experience with high voltage DC components, circuits, and systems. VerdeGo systems operate up to 1200 VDC. Candidate must have experience with safe design and connections, dynamics of HV DC systems, and hardware level best practices for product assembly, validation, operation, and maintenance. High voltage AC is also important as it relates to brushless motors developed with partners, but VerdeGo system bus architectures are typically DC. Must have experience with high-power (up to 100 - 300 kW, 300 – 500A) switched devices such as inverters and motor controllers. A key feature of every VerdeGo power generation system is a high-power inverter, and the successful candidate should have experience with different inverter architectures including SiC, issues relating to EMI and noise with high-frequency inverters, and other specifics related to hardware application.

Job Responsibilities

- Play a leading role in VerdeGo's technical team to guide the electrical and electronic systems approach for developing the next generation of aerospace electric powerplants
- Design, develop, test, and validate Electrical and Electronics systems including Power systems with a focus on optimizing for efficiency and weight
- Develop controls hardware and software to efficiently manage the engine, generator, inverter, and/or power distribution components for HV DC systems with significant transient loads
- Communications systems at VerdeGo Aero will include CANbus, RS-232, RS-422 and other protocols. Successful candidate must demonstrate clear understanding of application of these protocols, including physical execution such as proper grounding and shielding, programming, and system troubleshooting
- Create drawings, work with existing drawings, and suggest improvements to drawing documentation for outside manufacture of custom LV and HV wiring and control hardware.
- Engineer functional systems including the development of customized components as well as the selection of off-the-shelf components
- Select appropriate sensors and other test equipment, perform hands-on testing to validate system performance
- Interact with VerdeGo customers to understand project requirements, provide regular updates, and collaborate with external project inputs
- Maintain an up-to-date knowledge of the state of the art in lightweight, high-efficiency power systems

- Some familiarity with Li-Ion battery pack layout, connection, and cooling is a bonus. Familiarity with options for design and implementation of battery management systems is helpful.
- Job role will include creation of operating manuals, service manuals, installation requirements, and other written documentation as may be required for FAA certification and customer satisfaction over entire product lifetime.

Organizational Competencies

- Must be a team player with positive attitude. VerdeGo is a growing company, we routinely take on big challenges on a tight timeline, and we learn fast. Company culture is consistent focus on learning and moving forward as a team.
- Strong communication skills are important. The successful candidate will be expected to present work and key findings to internal stakeholders, investors, and customers.
- Some program management skills will be beneficial. This Senior Engineer will be expected to convert broad project goals into action plans, timelines, draft budgets, and other tools to move a large project from inception to completion.
- Patience and interest in mentoring will be important. VerdeGo has a strong team of young engineers and ideally, they will learn and grow. It is expected this candidate will help move the whole company forward quickly by coaching, trusting, and pushing our growing electronics team.

During product development, VerdeGo maintains a keen eye on the make vs. buy question. We tend to focus manufacturing outside our facility to keep our physical footprint and overhead low, but we can and do execute some wiring and electronics development in-house. Going forward, there is an expectation for a blend of internal development vs. outside manufacture as it relates to LV wiring, HV wiring, controller development, and other activities.

Qualifications Required

An accredited bachelor's degree in Electrical Engineering or a closely related field.

Ten years of experience with power electronics

A master's degree in a technical field is preferred