



## CASE STUDY: COMPANY A, BATTERY TERMINAL CONNECTORS

Company A, a leading company in the design and production of electronic and electro-mechanic components for the automotive, agriculture and the off-highway industry. Working with Company B on a project for battery terminal connectors to monitor battery voltage.

### CHALLENGE

- Design of busbar limited access for installation tooling
- No metal protrusion allowed around the base of stud due to mating part tolerances
- Safety critical due to risk of fire risk with high voltages
- System supply required
- Global manufacturing locations require support

### SOLUTION

- Developed application utilizing THFE™ stud design to remove “arcing” risk and satisfy safety requirements
- System sell with PEMSERTER® press and special tooling design to allow installation into recessed connector
- Supplied with ZN plating to OEM specification to meet performance requirements
- Support from PennEngineering on product testing and validation
- Dual production locations in both Europe and China

### RECOMMENDATIONS

- Utilized THFE™ stud design to overcome potential safety issues.
- Technical support strengthened PennEngineering’s reputation with the customer
- PennEngineering to supply the fastener and installation system removed the risks of having two suppliers involved
- Global manufacturing locations is key in supporting these global customers locally

**Key customers involved in Busbars / connectors:** Bosch, Denso, Samsung, Continental, Magna, ZF, Aisin Seiki, Hyundai Mobis, Lear, Valeo, Faurecia, Panasonic, Mahle, Hitachi, Mitsubishi, Delphi, Infineon, TE Connectivity.

