

Pi850e – AVL's 800 V SiC Traction Inverter Platform



Modular and Customizable A-Sample Inverter Solution for Next-Gen E-Drive Systems

Pi850e is AVL's advanced A-sample inverter development platform for rapid prototyping and testing in 800 V powertrains, adaptable to 400 V systems and available as single or dual unit.

Leveraging AVL's engineering expertise, it enables fast integration for passenger cars and light commercial vehicles.



CUSTOMER BENEFITS

- Customizable and modular traction inverter hardware and software
- Rapid prototyping for A-samples, demonstrator vehicles, and testing activities
- Pre-calibrated for PSM e-motors, enabling quick adaptation
- Flexible white-box options for in-house development
- Stand-alone units or electronics for integration activities
- Fast-track to own inverter development with AVL's engineering support

AVL CONTRIBUTION

- 800 V powertrain expertise since 2009
- Proven SiC inverter competence since 2017
- Comprehensive hardware and software development
- Functional safety concept up to ASIL-D, including diagnostics and cybersecurity
- Full support for testing and vehicle integration

Abbreviations:

SiC: Silicon Carbide | PSM: Permanent Synchronous Motor
HV DC: High-Voltage Direct Current
X-ETK: ETAS calibration and measurement interface



TECHNICAL FACTS

- System voltage: 800 V
- Power: up to 250 kW
- Peak current: 490 A_{rms} (10 s)
- 3-phase SiC inverter for PSM e-motor
- Simulink model-based application software
- Power density: up to 47 kW/l (dual unit)
- Optional HV DC EMC filter
- Optional X-ETK interface