Millbrook Proving Ground

«4E Powertrain Test Cell»

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4E Powertrain Test Cell

Millbrook's 4E Powertrain Test Cell is ideally suited to advanced development of hybrid powertrains, transmissions and stability control strategies. It can be used to test laid-out powertrains and full vehicles.

4E Powertrain Test Cell Facility Specifications

MILLBROOK

- System nominal power absorption 1000kW
- 4x ultra-dynamic synchronous motors; 350kW, 3500Nm (+20% overload). Maximum speed 3000 min-1
- Dynamic torque changes performed at minimum 0.13ms
- 350kW Battery Simulator (1000V/1000A)
- ETAS Inca ECU calibration tools with iLinkRT real-time interface
- Modelling and Simulation realised through Mathworks and dSPACE software integration
- Cell and engine intake air control between 18°C and 25°C +/- 1°C
- Engine coolant control to +/- 1°C
- Test bench intercooler temperature control to +/-1°C
- AVL Fuel Exact measurement with temperature conditioning to +/- 0.02°C
- Measurement of 70 temperatures and 32 pressures
- Additional analogue and digital input/ output channels available
- Dual stream emissions bench
- Full vehicle or system testing
- 160km/h vehicle cooling fan

Applications

- IC or hybrid emissions development, including simulation of real world and Regulated cycles
- Test of powertrain with a virtual battery using the battery simulator
- Powertrain control strategy development
- Development of ABS and traction control systems using fully integrated tyre slip models
- Mule use of components to simulate future vehicles
- Condensed testing on a rig as opposed to track- or road-based testing
- Highly repeatable measurement of fuel economy, emissions and energy consumption