

3E EDU Rig Testing

Millbrook conducts 1E to 3E driveline testing for up to 250kW continuous 20,000rpm input motors, 576kW axle absorption up to 3,500rpm and 10,000Nm, 300kW battery simulator (1,000V/1,000A).

This facility features HBM e-drive energy measurement, coolant conditioning equipment and a flexible REPS operating and data capture system.

Applications

- High speed input motor testing (1E test set up)
- Electric drive unit testing with supplied input motor (2E test set up)
- Axle testing (3E test set up)
- Thermal studies of cooling fluids, casings and inverters
- Performance characterisation
- Efficiency studies of drivelines
- Durability programs
- Motor burst testing

Input Dynamometer (AC Permanent Magnet):

- 250kW continuous operation from 4,775 to 20,000rpm
- 500Nm torque from 0 to 4,775rpm
- 125% overload for 60 seconds



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Output Dynamometer (AC Induction Type)

- 288kW continuous operation from 550 to 3,500rpm (per wheel)
- 5,000Nm torque from 0 to 550rpm (per wheel)
- 125% overload for 60 seconds

DC to DC Battery Simulator/Inverter

- 1,000VDC
- 1,000A continuous operation from ~0VDC to 280VDC
- 300kW continuous capacity
- 120% overload for 1 minute
- E27 control module with Ethernet communications
- Reverse-voltage protection diode
- IGBT power section
- Common-mode filter capacitors, reverse-voltage diode and voltage feedback module for output of DC supply / battery simulator
- Voltage/current control accuracy: better than +/- 0.5% full scale
- Response time: 10% to 90% FLA from receipt of command in <3ms (load dependent)
- Isolation monitoring: bender (or equivalent) isolation monitoring system
- Ripple spec: 0.1% FS current ripple / 0.1% FS voltage ripple

