Intertek UK Powertrain Electrification Facility Specifications

eMachine Dynamometer

Description - one test rig with easily mountable Device Under Test (DUT) holding fixture and interchangeable drive shafts. DUT inverter mounting and power analyser interface.

- Speed: +/- 18,000 rpm (bi-directional)
- Peak Power: 300 kW for > 120 sec.
- Peak Torque: 750 Nm for > 120 sec. to 3750 rpm
- Cont. Power: 250 kW
- Cont. Torque: 550 Nm to 4300 rpm
- Torque sensor: 1000 Nm range with +/- 1.0Nm accuracy
- Power analyser: 200 MHz sampling rate internal power analyser
- Sensors: 8 x 2.0 kV isolated k-type thermocouple interface
- Cooling: 25 ^{o}C & 6 ^{o}C cooling circuits plus 3.0 kW heater

XEV Driveline Test Cells – Cells 26 & 27

Description – two large test cells, each capable of testing a fired engine plus transmission plus various configurations of traction motor integration, including twin axle set-ups.

Axle dynamometer specification – up to two dynos per test cell, each with the following spec:

- Max. Speed: 3500 rpm
- Peak Power: 700 kW
- Peak Torque: 5500 Nm for > 120 sec. to 1250 rpm
- Cont. Power: 550 kW
- Cont. Torque: 4000 Nm to 1250 rpm
- Torque sensor: 10,000 Nm range with +/- 5.0 Nm accuracy

Engine dynamometer specification – up to two dynos per test cell, each with the following spec:

- Max. Speed: 9000 rpm
- Peak Power: 700 kW
- Peak Torque: 2000 Nm for > 120 sec. to 1250 rpm
- Cont. Power: 550 kW
- Cont. Torque: 1200 Nm to 3250 rpm
- Torque sensor: 3000 Nm range with +/- 1.0 Nm accuracy

Battery Simulator

Description – a central AC-DC “front-end” supplying two mobile 150 kW DC-DC Battery Simulators. Each mobile module can be installed in the flexible Rig Room or either of the driveline cells

Battery Simulator Specifications:

- Voltage: 40 to 1000 V
- Power: 150 kW each x 2 units (300 kW when linked in parallel)
- Current: +/- 460 A each (920 A when linked in parallel)
- Load step: < 5 ms