DC EMULATOR

DC POWER SYSTEM AND COMPONENT TESTING
HIGHLY DYNAMIC DC LOAD / SOURCE FOR POWER SYSTEMS
DEVELOPMENT AND HARDWARE IN THE LOOP (HIL) TESTING

- Wide Bandwidth (to 20kHz) for high power swept frequency testing for resonance identification,
- Inject controlled noise/ripple onto DC Bus
- Accurate reproduction of captured/simulated waveforms
- Full Power Slew <100uS
- Latency - 1uS from command to output
- High Frequency Load

+ Performance
+ Endurance
+ Production

TESTING THE FUTURE®
HIGH PERFORMANCE. D&V Electronics’ DC Emulator (DCE) offers superior performance that enables you to conduct required testing of electrified vehicle components and systems, with capacity for future requirements. The increase in quantity and complexity of constant power loads in automotive and aerospace power systems has created the need for a high-power, high-current load capable of superimposing a swept frequency AC component that will rapidly expose and identify resonances. The DCE can emulate constant power loads with controllable bandwidth up to 20kHz.

FLEXIBILITY. Equipped with three user selectable operating modes, three user selectable inputs/outputs, master/slave capability and high power – HIL compatibility, the DCE is ideal for existing and future test labs.

Operating Modes:  
- Load (CP, CC, CR, CV)  
- Source (low impedance)  
- Source (high dv/dt)  

Inputs/Outputs:  
- Analog (<1μS latency)  
- Fiber (<1μS latency)  
- CAN (10μS update)  
- Parallel to 1.3MW

Master/Slave:  
- Series for 1000V or 500V (1600V or 800V)  

OUTSTANDING VALUE. The DCE is priced competitively with other regenerative battery pack test systems, provides best in class fidelity and power slew rates, the ability to add finely controlled AC on top of the DC output, and ultra-low latencies for high power-hardware in the loop testing resulting in outstanding value to the customer. This value is further enhanced by the units flexibility and through energy savings through regeneration to the grid.

Applications  
This flexible, re-configurable, dynamic testing capability is ideal for:  
- EVs & HEVs: Battery Packs, Chargers, Converters, High Voltage DC Power Systems  
- HIL for Dynamic High-Power Source or Load Emulation with Real-Time Simulation  
- DC Microgrid Testing  
- Alternative Energy Systems  
- Aerospace DC Power Systems and Components

INTERFACES AND CONTROL (FONT PANEL ACCESSIBLE)

- Graphical User Interface: LabWindows™ based with CAN interface®; 10μS updates: CAN compatible profiles
- Analog: ±10V: 0.5μS Sample Rate; 1/0 < 1μS latency
- Digital: Deterministic Streaming via Fiber®; 0.5μS Sample Rate; 1/0 < 1μS latency
- Emulation Profile Storage: Size determined by host PC specifications
- Operating Modes: GUI User selectable
- ESTOP: Front Panel Button: Discrete output for facility tie in; shuts down all power.
- HVIL: Door switches; Discrete output for facility tie in. HV shuts down; control enabled

FACILITY REQUIREMENTS

- Input (others available): 480VAC/150A 3-phase 4-Wire 60Hz
- Input: 120VAC, 1-phase, 6.5 amp (other voltages available)
- Cooling (Water or 50% WEG; non-condensing): 6.5GPM @ 20PSI 30C max coolant
- Physical Size (Width x Height): 23 x 42 x 75 with 6” casters
- Stack Light (add 5 ½ in.), Ships uninstalled
- Weight: 1000 lbs

- Optional Master/Slave GUI to Parallel up to 13 units (1.3MW; 0 to +500V/–800V, 6000A); Series 2 units or paralleled strings (0 to 1600V or 8000A); N+1 redundancy with auto pickup in <10μS on drop out.
- User required to have Vector CAN compatible interface
- Direct Input from User TAG or via Optional PC with custom CSV interpretation software to enable high speed streaming of stored profiles; User Interface XPS for OpalRT® and Matlab® (Speedgoat®); Blackbox support for custom FPGA can be developed.

D&E ELECTRONICS | D&E ELECTRONICS USA  
130 Zenway Boulevard, Woodbridge, Ontario Canada L4H 2Y7  
sales@dveelectronics.com 1-905-264-7646  
www.dveelectronics.com