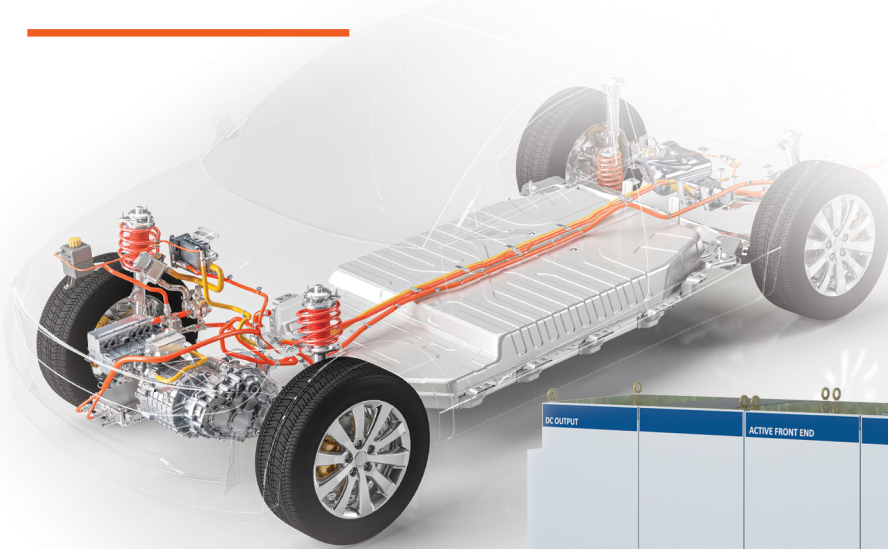


E-MOTOR EMULATOR



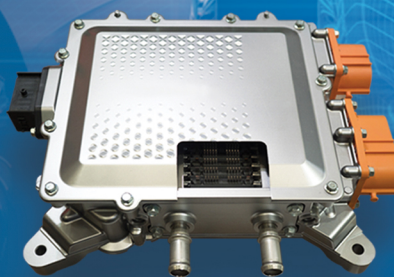
Water-cooled configuration.
Many configurations available.

Designed for EV Inverter Testing

Develop your next generation electric vehicle propulsion system using Unico's E-Motor Emulator. This extraordinary E-Motor emulator is specifically designed for traction inverter testing on electric and hybrid vehicles. The drive system powering the emulator has a high switching frequency to replicate the exact power, voltage, and current demands of the E-motor, so you can perform repeatable endurance, performance, and validation testing on your next generation EV and HEV traction inverters. Open communications protocols make it easy to integrate into your existing electric vehicle testing system. If you already have a Unico regenerative battery emulator system, the modular design makes it easy to add-on.

APPLICATIONS

- Research
- Development
- Validation
- Durability
- EOL
- Test to Global Standards (LV123, ISO26262, and more)

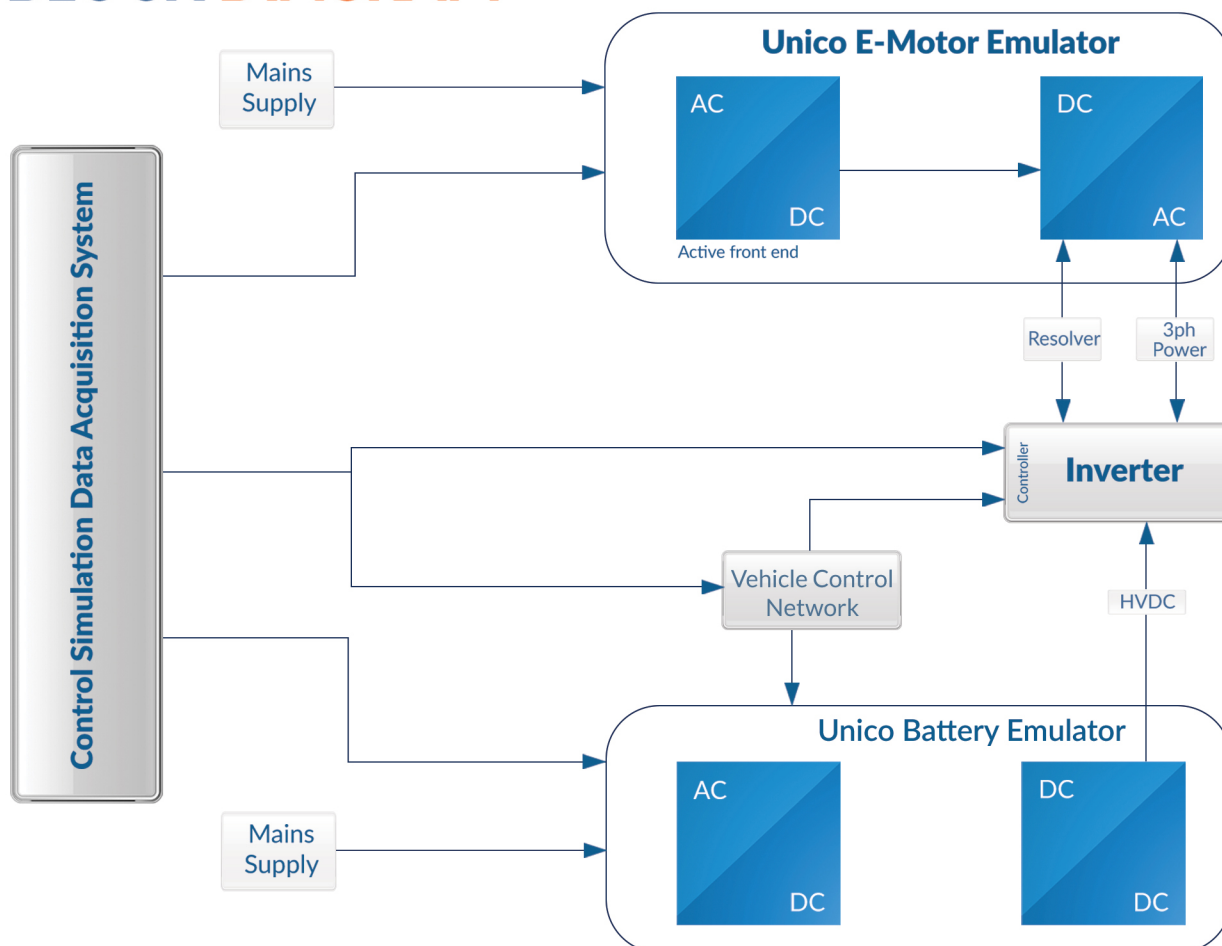


TEST THE INVERTER

FEATURES

- Test the drive inverter before a real e-motor is available
- Validate the inverter to prevent prototype e-motor failure due to incorrect inverter performance
- No moving parts for a higher level of safety in boundary condition testing
- More complete testing than HIL or passive load emulation
- Communication and integration testing
- Fault injection verification

BLOCK DIAGRAM



E-MOTOR EMULATION

GENERAL SPECIFICATIONS

Power	30kW to 800kW
Motor voltage	230 VRMS ,460 VRMS ,520 VRMS
Number of poles	2 to 64
Back EMF	Standard
Full four-quadrant	Standard
Inertia torque	Standard
Fundamental frequency	Up to 1500Hz
Encoder type	Quadrature, SinCos, Resolver
Resolver	• Lobes: 2 to 64 • Offset: -2rr to 2rr radians • Excitation: 2kHz to 20kHz
Programmable parameters	• Direct inductance Ld • Quadrative inductance Lq • Magnetic flux • Winding resistance
Fault simulation	• Harmonics • 3 Phase open circuit • Phase to phase short circuit • Phase to ground short circuit • Motor stalling • Motor over torque • Winding asymmetry • Demagnetization • Sensor phase shift
Internal data logging	250kHz or higher
Model calculation	Up to 30kHz
AC Input	480VAC, 3Ph, 50/60Hz (other voltages available on request)
Ambient	Up to 40°C, max 1000m above sea level, 95%RH non-condensing
Enclosure	NEMA 1 (other options available upon request)
Cooling	Air cooled (water cooled or airconditioned cabinets upon request)
Cabinet Paint	RAL 7035 Rough Semi-gloss Poly Powder finish
Certification Compliance	UL (other certification available)
Control	Local and remote
Built in remote interface	Analog as well as RS-422, RS-485, two ports (other interface and protocol, see options below)
Safety and control interlocks	Hardwired, opto-isolated, software configurable
Battery Emulator Specification	See Battery Emulator Brochure for available voltage, current and power ratings

OPTIONS

Isolation transformer	Various sizes as required
Insulation monitoring	Available
Additional analog and digital input, output	Technical discussion required
Cabinet paint finish	Customer specific
Protection class	NEMA 12
External communication interface	• CAN open • CC-Link • Control Net • DeviceNet • Ethernet • EtherCat (async) • Interbus • Lon Works • Mod bus Plus • Profibus DPV1 • Profibus Master • EtherCat (sync)

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