LG
Life's Good

neo
MESSTECHNIK

ACTIVE LOAD EMULATOR

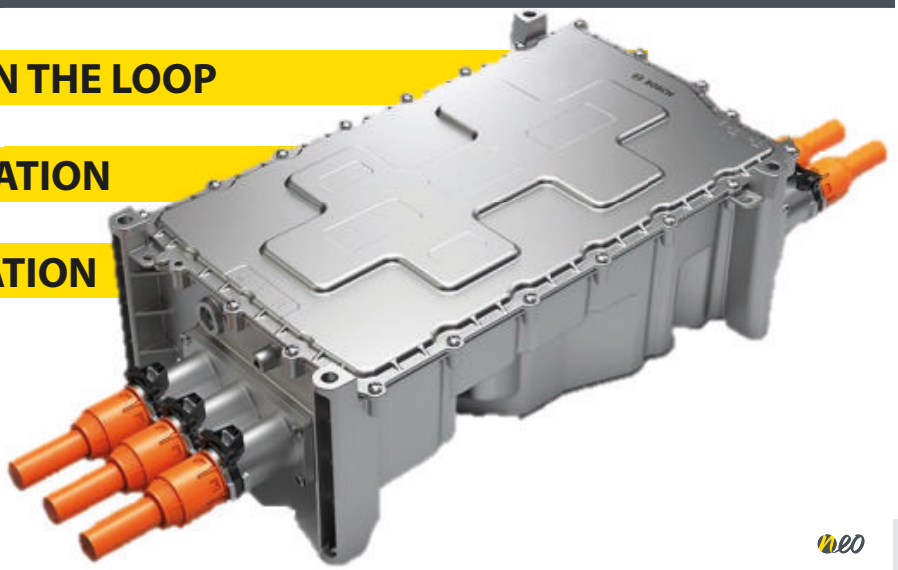
Electric Vehicle Inverter Testing

THE FUTURE OF INVERTER TESTING

POWER HARDWARE IN THE LOOP

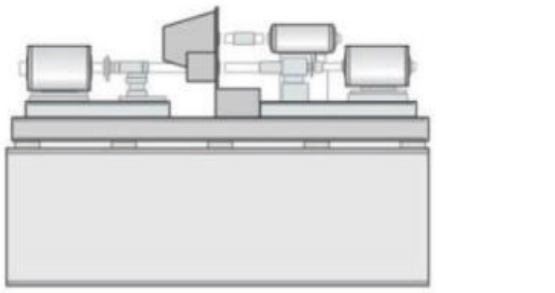
BATTERY EMULATION

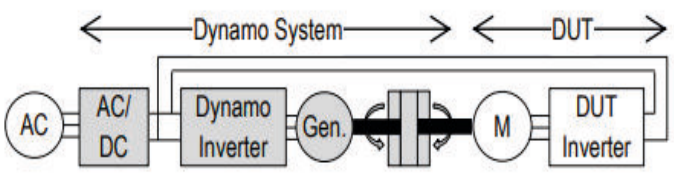
MOTOR EMULATION

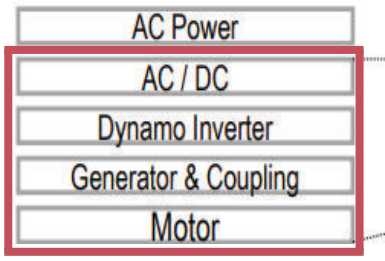


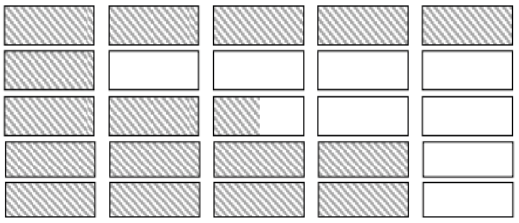
Dynamo vs. Active Load Emulator

Inverter Test on Dynamo

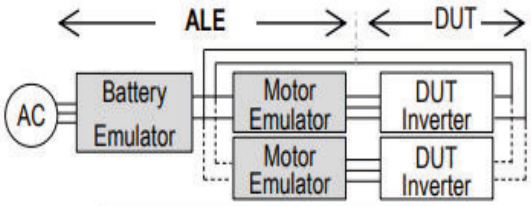


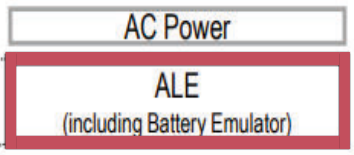


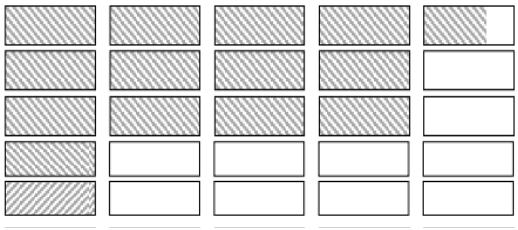




LG Active Load Emulator





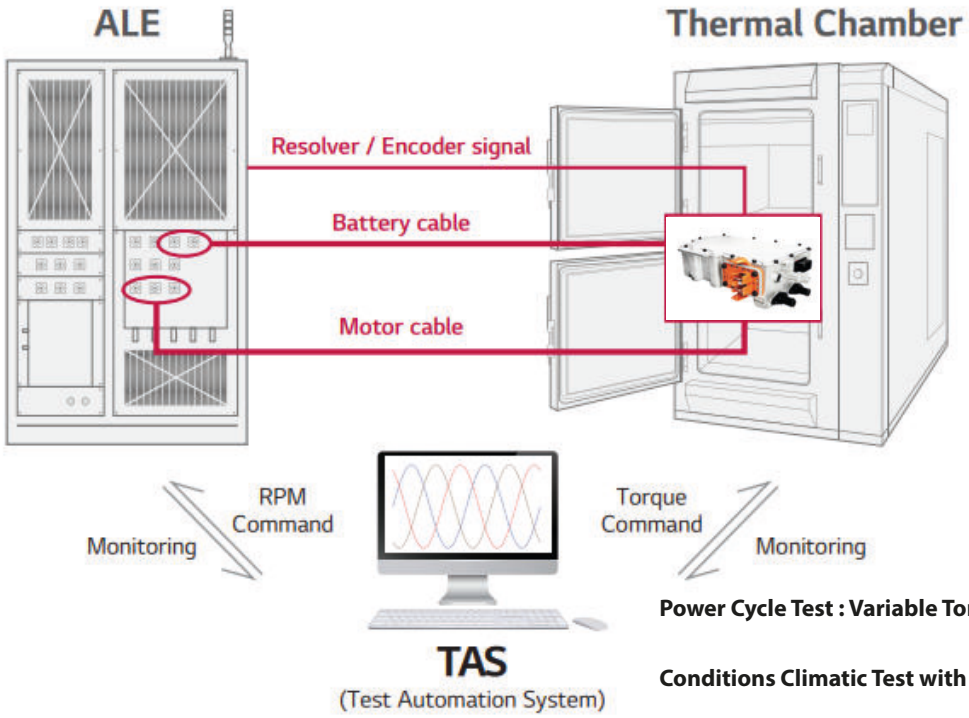


Accuracy
Safety
Power Efficiency
Space
Investment Cost

Benefits and Features of the LG ALE

- **Motor Emulation**
  - Motor emulation accuracy over 95%
  - Fast response for Torque / Rpm variation
  - Resolver and encoder interface
  - System protection for various fault conditions
  - Multi-phase (3,6,12) motor applicable (G2.0)
- **Battery Voltage Emulation**
  - Voltage source for evaluation inverter
  - Supply voltage up to 1,000 Vdc (G2.0)
- **Low Investment and Operation Cost**
  - Compact design having small footprint
  - Low initial investment and maintenance
  - High energy efficiency
- **Scalable Power Capacity (G2.0)**
  - High power inverter test (Max 1.2MW)

Overview & Specs

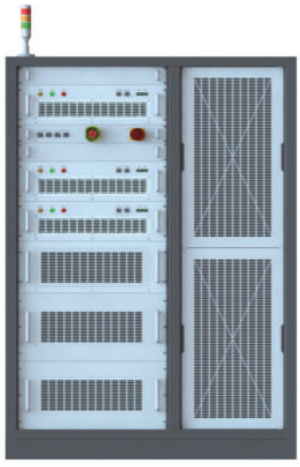


Power Cycle Test : Variable Torque, RPM and Battery

Conditions Climatic Test with Power Cycle Test

Specifications

G1.0



G2.0

General

Category	G1.0	G2.0
Size (W × H × D)	740 × 2,170 × 1,150 mm	1,250 × 2,000 × 1,290 mm
Weight	1,600 kg	2,000 kg
Power Capacity	Individual channel 150 kW Parallel 300 kW	Individual channel 150 kW Parallel 300 kW
Coolant	DI Water or compatible	
Coolant Flux	45 L / min	60 L / min
IP Rate	IP20	
Service Life	10 Years	

Battery Emulator

Nominal Power	60 kW	80 kW
Output Voltage	195 ~ 800 Vdc	195 ~ 1,000 Vdc
Nominal DC Current	240 A	240 A

Motor Emulator

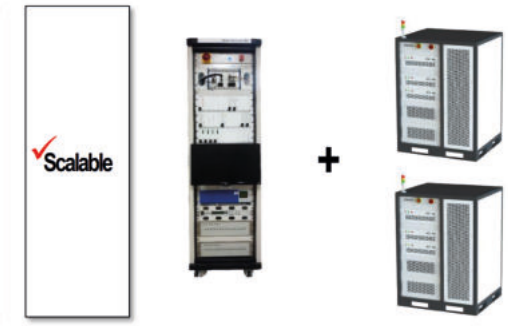
Num. of Motor	Individual Two Motors, Parallel One Motor	
Operation AC Freq.	0 ~ 800 Hz	0 ~ 1,500 Hz
Individual AC Load Current	400 Arms (Nominal) 500 Arms (60s / 10min stop)	
Parallel AC Load Current	800 Arms (Nominal) 1,000 Arms (60s / 10min stop)	
*Power Extension	N / A	Up to 4 parallel connections
Back EMF	0 ~ 480 Vrms	0 ~ 612 Vrms
Torque Direction	P, N	
Num. of Motor Pole	~ 24 poles	
Resolver Lobes / Offset	2 ~ 24 / -π ~ π	
Resolver Excitation Frequency	10 ~ 20 kHz	
Encoder Type / PPR	N / A	Incremental (A, B, Z) / 0 ~ 512 PPR
Communication	CAN2.0A	

* Power Extension : Power capacity extension with multiple equipment parallel connections

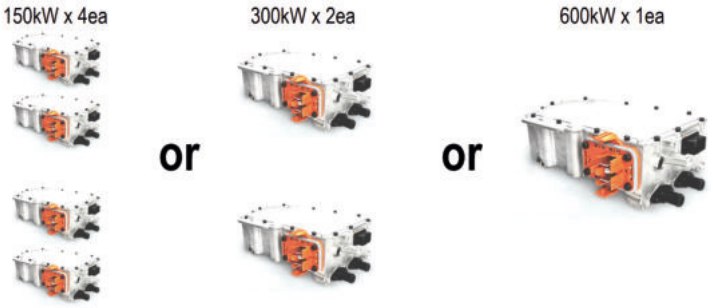
Active Load Emulator

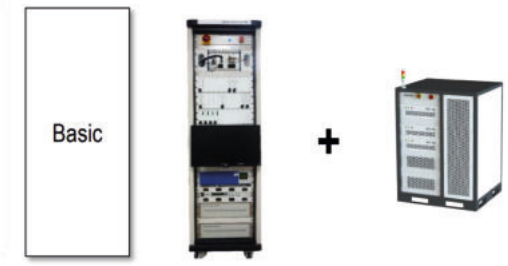
Scalable up to 1.2 MW

TAS / ALE Combination



Available Number of DUT





Easy to Use

- No rotational parts
- Small form factor (in line test OK)
- Configurable with Automatic Test System

Safety / High Reliability

- Safety for Electric and EMC
- Self Overload Protection
- Long time continuous operation (4,500 hours in validation process)
- Robust / Reliable

Application

- EV inverter R&D Status
- Validation Process
- End line test for mass production

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