



POSITIVE PROBLEM SOLVING 

WHEN LYRA ELECTRONICS EXPANDED THEIR FACILITIES, THEY WANTED THE BEST TOOLS AVAILABLE TO STAY AHEAD OF THE POWER CURVE.

The company pride themselves on being power electronics and control specialists. Key to their offering is the ability to develop cutting edge solutions for customers, from concept to production.

Many of their projects have achieved ground breaking results, such as helping a client beat the EV land speed record. In order to maintain this technological prowess, Lyra Electronics continually invest in the best test equipment around.

High end engineering often moves incredibly quickly, with no two projects ever the same. So it is important that test equipment is able to not only be flexible, but also future proof.

After careful consideration, Lyra Electronics purchased a LAB-GSS system. Each unit can operate as either a DC source or load. A comprehensive range of hardware and software features make the system best in class.

Each unit is modular, meaning that users can arrange systems in various series, parallel or matrix configurations. The modules all operate independently, allowing systems to be reconfigured for different projects.

Dr Pete James, Director at Lyra Electronics, said "The LAB-GSS gives us all the flexibility we need. As engineering is so varied, it's vital our test equipment can meet any possible future requirement".

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CASE STUDY

LYRA ELECTRONICS

POWERING A GREENER WORLD

The initial project for the LAB-GSS was to develop an airport baggage loader, powered by an electric motor. Currently, most of the world's baggage loaders are powered by diesel generators.

As there are over 17,000 commercial airports worldwide, a switch to an electric alternative could amount to a very significant reduction in global CO2 emissions.

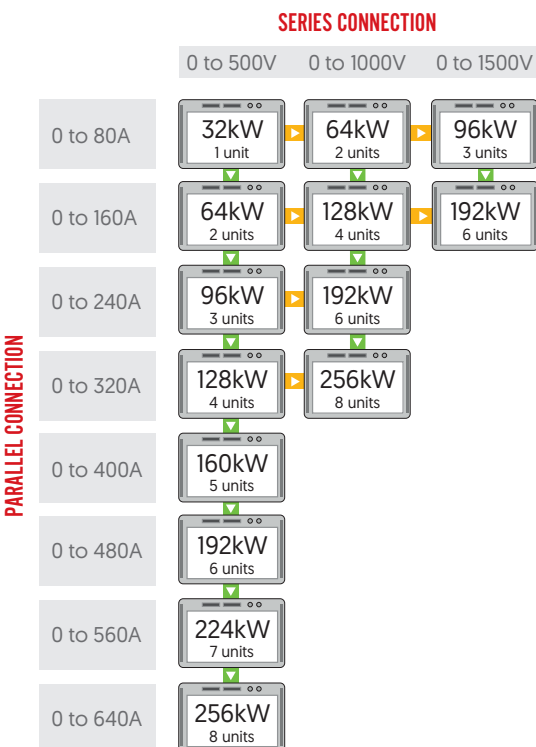
When operating as an electronic load, the LAB-GSS regenerates energy back to the grid. Typical losses are only around 7-8%. In traditional systems 100% of this energy would typically be lost as heat. As much of the UK grid's power is produced from fossil fuels, this can significantly reduce a company's carbon footprint.

Dr Pete James added "We pride ourselves on developing green technologies. So it is important our test equipment helps us create a sustainable supply chain".

"From a testing perspective, it is important to address how the electricity used is produced. Using large amounts of power generated by fossil fuels for green tech research is somewhat of a contradiction."

"On-site generation facilities such as solar panels can relieve a small percentage of generation, but an industry wide rethink needs to be considered of how to achieve a truly renewable test infrastructure."

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ABOUT THE LAB-GSS

The sink/source capability of the LAB-GSS makes the system ideal to research bidirectional power flows. When operating as a load each unit has power recycling technology. An inbuilt monitoring system synchronises with the grid and regenerates any excess DC energy back to the three phase mains.

Up to 64 LAB-GSS modules can be arranged in series, parallel or matrix configurations. Each module can operate independently, allowing systems to be reconfigured, expanded or broken up as needs dictate. The diagram shows all the possible combinations with eight 500V modules.

Every module has an extensive feature set which includes programmable PID parameters and inbuilt eight channel recording scope. Adjustable power and resistance limits make the units ideal for all purpose research.

RS232 and isolated analogue interfaces are provided as standard. Optional interfaces are also available.

An embedded function generator is available which allows virtually any DC waveform to be created. V/I and V/P relationships can be programmed against time where necessary. Parametric programming is possible, where instead of the time axis an input variable (V_{IN} , I_{IN} or P_{IN}) can be selected.

The module hardware is complimented by application software. Specific tests can be performed including battery cycling, electric drive testing, PV simulation battery emulation as well as capacitor emulation and testing.

When testing electric drives, complex drive cycles can be replicated by importing data from a CSV file. Previous tests have been conducted using over 400,000 individual data points, with more possible. This helps recreate a real world test in a controlled lab environment.

If you'd like to discuss how the LAB-GSS could drive your testing forward, then please contact ETPS today.