Power performance

Stantronic Instruments was formed in Germany in 2009 and the UK division was formed in 2011. In 2015, the company was acquired by LXinstruments, a German test solutions company. Today, the company has offices in Germany, the UK and The Netherlands and employs over 30 people.

Steve Evans is Director of Stantronic Instruments (UK) Ltd. Responsible for sales, support and distribution of all products in the UK and France says they offer high quality electronic test and measurement equipment and solutions, including pre and post sales technical advice and support. With their diverse range of products, the company supplies many markets including energy, automotive, aerospace and defence, communications, education and instrumentation.

The company focuses on providing outstanding service and high quality solutions at competitive prices. Our pre and post-sales technical support sets us apart from catalogue companies. Our wealth of experience and expertise enables us to work closely with customers to provide the most effective and cost efficient solutions.

At the Battery Tech Expo Stantronic will be focusing on our power related products for the automotive, energy, battery and power distribution markets. Products on show will include AC and DC power supplies, electronic loads, battery testers, hipot safety testers, power meters, oscilloscopes etc.

Using Single & Multiple Channel Electronic Loads for Testing Batteries, Solar Cells and Power Supplies

Electronic Loads are used to simulate the characteristics (constant resistance, constant voltage and constant current) of the device under test (DUT) to test whether the output capability of a battery, power supply, solar cell, or power supply unit meets the required specifications. Unlike using simple resistive components to test power sources, electronic loads can dynamically switch simulated resistors, voltages and currents, customise the rise and fall times of current sink, and even edit a complex and continuous load change.

Typical Applications of a Single Channel DC Electronic Load

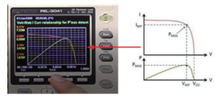
Current Sensor Evaluation

The PEL-3000 Series loads provide 3 current levels: high, medium and low. The minimum current resolution of 0.01 mA can be selected based upon the test requirements. If a PEL-3000 is connected with a DC power supply, a high-precision constant power supply can be formed to evaluate the current sensor.

Current Sensor Evaluation

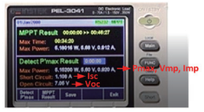
Solar Panel I-V Curve Display & MPPT Measurement

The MPPT Function can be performed by the PEL-3000 Series to simulate the operating current of a solar panel ranging from zero to the maximum current value. At the same time it measures the output voltage and power of the solar panel to obtain the solar panel output voltage/current/ power curve. The MPPT Function of the PEL-3000 not only provides users with the Pmax, Vmp, Imp, Isc, Voc values of the solar panel, but also tracks the maximum power point of the solar panel in different shade conditions.



I-V Curve of The Solar Panel

Connections Between PEL-3041 and Solar Panel



Measurements for MPPT

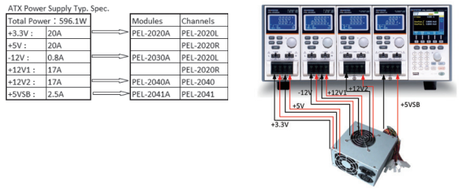
Remark: Pmax → Maximum Power Point
V_{MP} → Voltage at Maximum Power
I_{MP} → Current at maximum power
Voc → Open Circuit Voltage
Isc → Short Circuit Current

If users need to measure multiple sets of batteries or power supply units at a time, or evaluate multi-channel power output in the circuit, the multi-channel DC electronic load PEL-2000A will be the best measurement solution. PEL-2000A can evaluate the simultaneous power output capability of multiple power supplies, or test the output current of multiple power supplies, by sequentially loading each output current according to the time interval defined by each output.

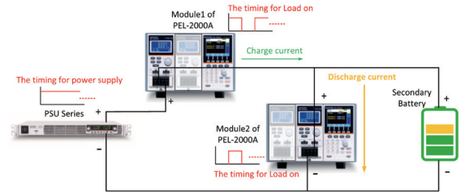
Typical Applications of a Multi-Channel DC Electronic Load

Output Test of a PC Power Supply

Power supply output devices with small-power, multi-group, and different specifications, such as the ATX power supply for PCs, can use a PEL-2000A to evaluate the synchronous power output of multiple power supplies. A typical ATX power supply has 6 outputs. In order to ensure that the ATX power supply can provide sufficient power output when the 6 channels output simultaneously, the PEL-2000A can perform dynamic mode and load regulation tests on six outputs at the same time. Alos, users can edit the program mode to customize the severe test conditions to automatically determine the Pass or Fail of the ATX power supply.



Test Diagram for ATX Power Supply



Automated Charge/ Discharge Test of a Battery

Battery Evaluation Test

Automated testing of high-speed battery charge and high-speed discharge can be achieved by using the PEL-2000A electronic load module in series and parallel with the power supply. The automated switching operation between the modules of the PEL-2000A can greatly shorten the test time and increase the reliability during the measurement process as compared with manual operation.

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