Outstanding Performance, Extreme Reliability: IT8400 High-Performance DC Electronic Load

— Empowering High-Power, High-Voltage Impulse Testing

As the demand for reliability in high-power, high-voltage testing equipment continues to rise in the renewable energy and power electronics industries, the ITECH IT8400 series high-performance DC electronic load has become the industry's recognized "top-tier" choice. With advanced component selection, innovative thermal management, and precise measurement performance, the IT8400 continuously supports critical applications such as fuse withstand testing, DC charging stations, and DC-DC module performance validation, meeting the stringent requirements of 24/365 continuous operation on production lines.

1. Wide Voltage, High Power, & High Expandability

• **Dual Voltage Ranges**: 600 V / 1200 V, covering both medium and high-voltage testing needs.

• **54 kW Output per Unit**: Achieves 6 kW high power density in just a 3U rack.

• **Scalable up to 600 kW**: Supports multi-unit master-slave cascading for large-scale production line or system testing, offering flexible expansion.

2. Advanced MOSFET & Ultra-fast Response

• **High-performance MOSFET**: Selected for higher voltage resistance and better shock resistance.

• **Super-fast Current Tracking in CV Mode**: Perfectly simulates battery load characteristics, withstanding power-up shock in DC charging stations without issue.

• **Special Sampling Resistor & Measurement Amplifier**: Current accuracy reaches up to 0.05%, capturing even the smallest changes.

3. Innovative Thermal Management & Ultra-low Repair Rate

• **Optimized Airflow & Cooling Channels**: Efficient heat dissipation ensures continuous high-power operation without overheating.

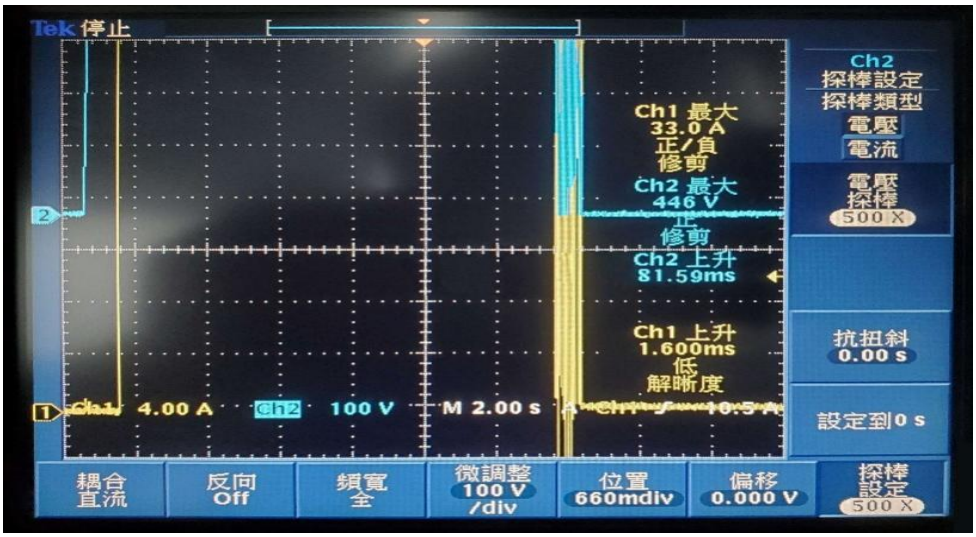
• **Rigorous Burn-in Screening**: High-temperature, high-humidity full-power aging tests before shipping, ensuring a repair rate far lower than the industry average.

• **Proven in the Field**: Multiple production line customers have used the IT8400 series 24/7 for 2 years without interruption, with excellent feedback.

4. Typical Application Scenarios

1). Fuse Withstand High-voltage Impulse Testing

During the fuse formulation stage, a customer used the IT8400 series for load testing and was impressed by its outstanding high-voltage arc-withstand capability. Even under conditions simulating transient grid short-circuits and rapid overload shocks, the IT8400, with its high-end MOSFET components and optimized cooling structure, was able to withstand arc impacts and high-temperature environments while maintaining stable current output without malfunction or damage. This enabled the customer to quickly identify the best fuse formulation, significantly improving R&D efficiency and testing safety.



High-Voltage Arc and High-Current Testing

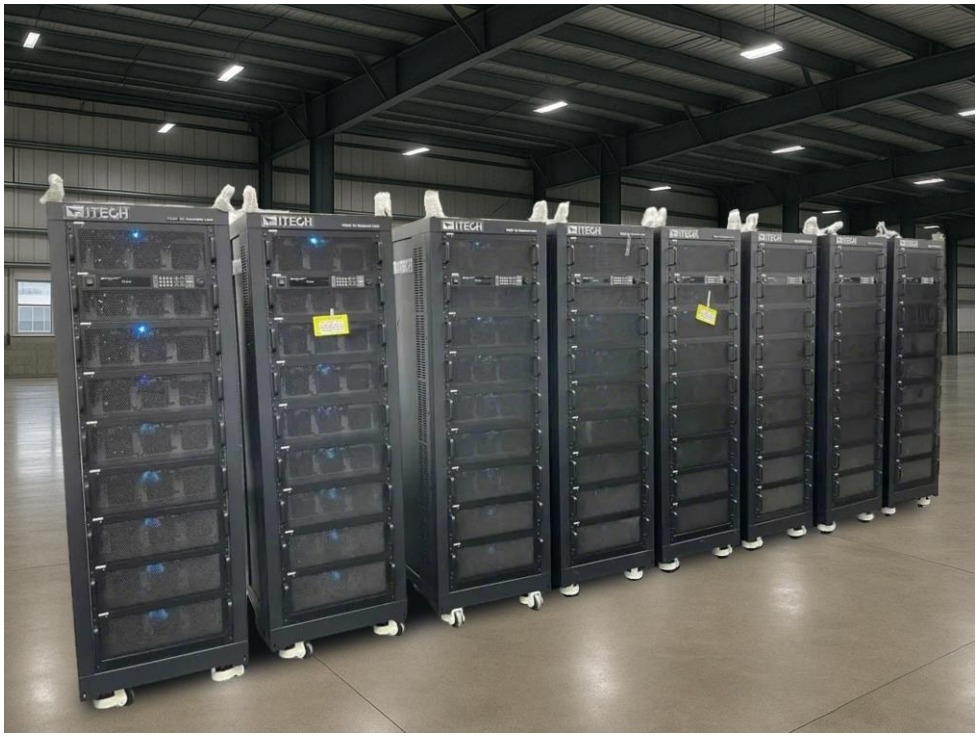
2). DC Charging Stations and DC-DC Module Testing

• The ITECH IT8400 has demonstrated its stability in CV load mode, faster current response, and stronger ability to withstand startup shocks during long-term use by customers.

• CV Load Mode: Simulates the battery side of an electric vehicle. After the load reaches the set voltage, it must remain stable, ensuring that voltage fluctuations during testing are within the set limits. This validates the charging station's control accuracy and the timing of its protective actions.

• High-Speed Dynamics: DC charging stations generate high-voltage spikes and arcs during power-up, protective actions, or fault tripping. The electronic load must use high-voltage resistant components and optimized thermal management to withstand these brief shocks without malfunction or damage.

• High-Voltage Impulse Resistance: During current step changes in the charging station (such as switching to fast charging mode or SOC changes) or load transients, the load can adjust current within microseconds, accurately replicating the charging and discharging dynamics under real-world conditions.



3). UPS, Energy Storage Systems, and More

• Dynamic Load Testing and Long-Term Aging Tests: Ensure the stable operation of power electronics equipment.

5. Smart Connectivity & Production Line Integration

• Built-in LAN/USB/RS232/GPIB/CAN/External Analog Control Interfaces: Compatible with SCPI and other protocols, enabling easy automation testing and data archiving.

• Real-time Monitoring and Alarming: Monitors temperature and fan speed in real-time, providing early warnings for overheating or abnormal operation.

• No Water Cooling Design: Pure air cooling meets the high-load heat dissipation requirements, making maintenance simpler and more convenient.

Conclusion

With its outstanding performance and exceptional reliability, the ITECH IT8400 series electronic load, featuring high-end MOS components, innovative cooling technology, and high-precision sampling, delivers fast response times and ultra-low failure rates. Whether for high-voltage impulse testing or continuous 24/7 aging validation on production lines, the IT8400 consistently provides stable, precise, and durable results. It serves as a solid foundation for large-scale production and quality assurance in the power electronics and renewable energy industries.