BriPower™

BriPower Power Grid Simulators ESA, KGS, and ZGX Series Support Continuous Fault Ride-Through Testing

With the large-scale integration of new energy power generation equipment into the grid, the dynamic characteristics of the power grid have become more complex. Conducting fault ride-through tests on distributed power generation equipment ensures that photovoltaic inverters and energy storage converters and other equipment can maintain stable operation during grid faults, enhancing the resilience of the power grid.

The new China national standard GB/T 34120-2023 "Technical Requirements for Energy Storage Converters of Electrochemical Energy Storage Systems" has added requirements for "high voltage ride-through" and "continuous fault ridethrough" for energy storage converters, emphasizing new requirements for dynamic reactive power support and active power during voltage faults.

BriPower's ESA, KGS, and ZGX series power grid simulators feature a transformer-front design and support high and low voltage ride-through and continuous fault ride-through testing.

Taking ZGX15 as an example, set to 450V, output open circuit, and the waveform of continuous three low-high voltage ride-throughs is as follows:

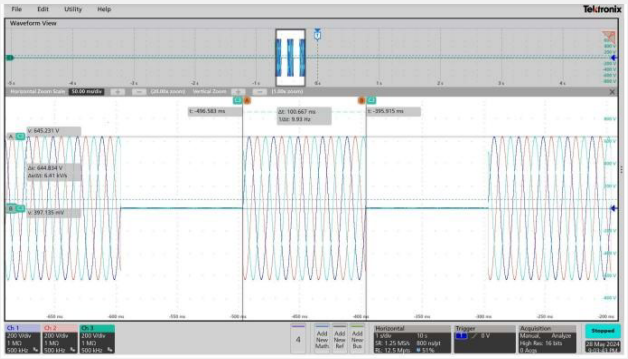

Figure 1: The duration of a single fault ride-through is 100ms

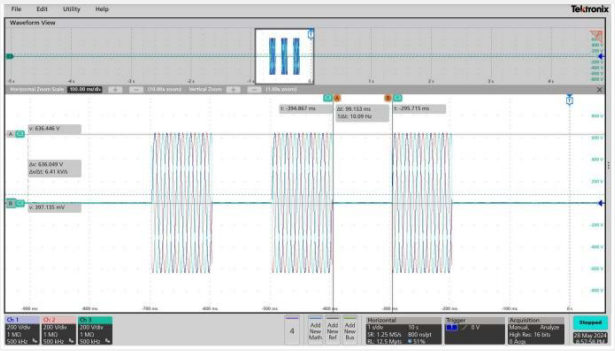

Figure 2: The interval time for continuous fault ride-through is 100ms

Also, Power's power grid simulators have fast dynamic characteristics. The voltage drop and rise times of ESA series, based on IGBT high-power grid simulators are less than 1ms and the voltage drop and rise times of KGS and ZGX series, based on SiC, are less than 150us.

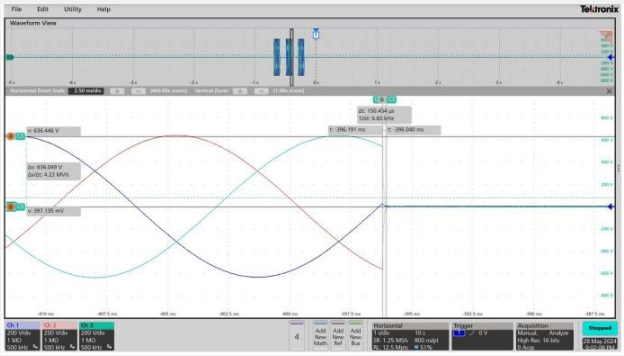

Figure 3: ZGX15 voltage drops from 450VL-N to 0V in less than 150us (open circuit)

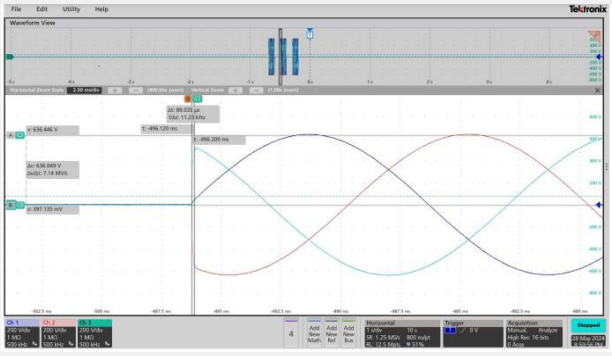

Figure 4: ZGX15 voltage rises from 0V to 450VL-N in less than 100us (open circuit)

Taking ESA 120-350-181-R as an example, set to 350V, output open circuit, and the waveform of voltage rise and drop is as follows:

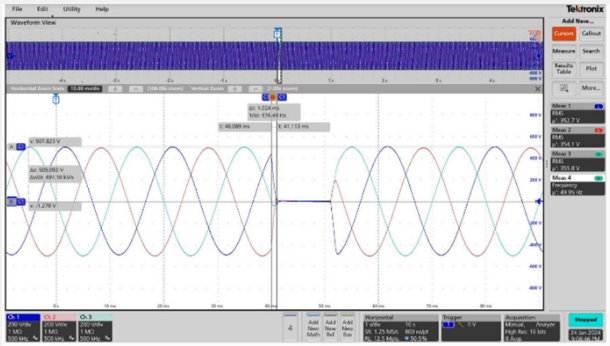

Figure 5: ESA voltage drops from 350VL-N to 0V in less than 1ms (open circuit)

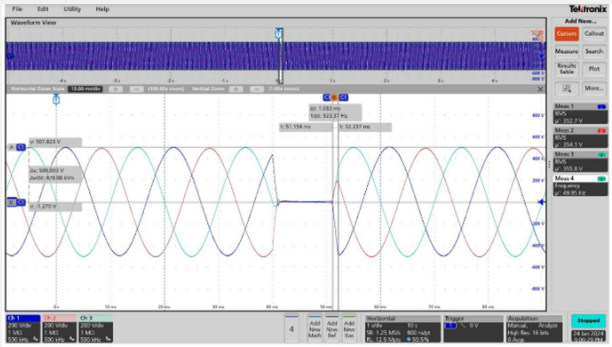

Figure 6: Voltage rises from 0V to 350VL-N in less than 1ms (open circuit)