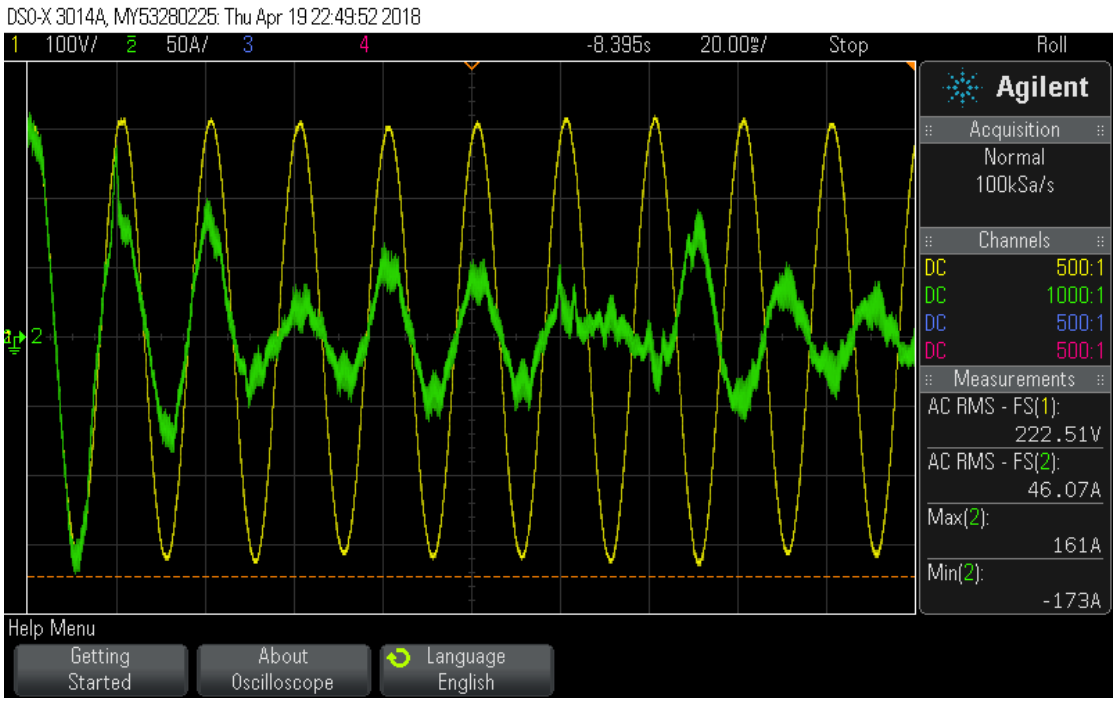
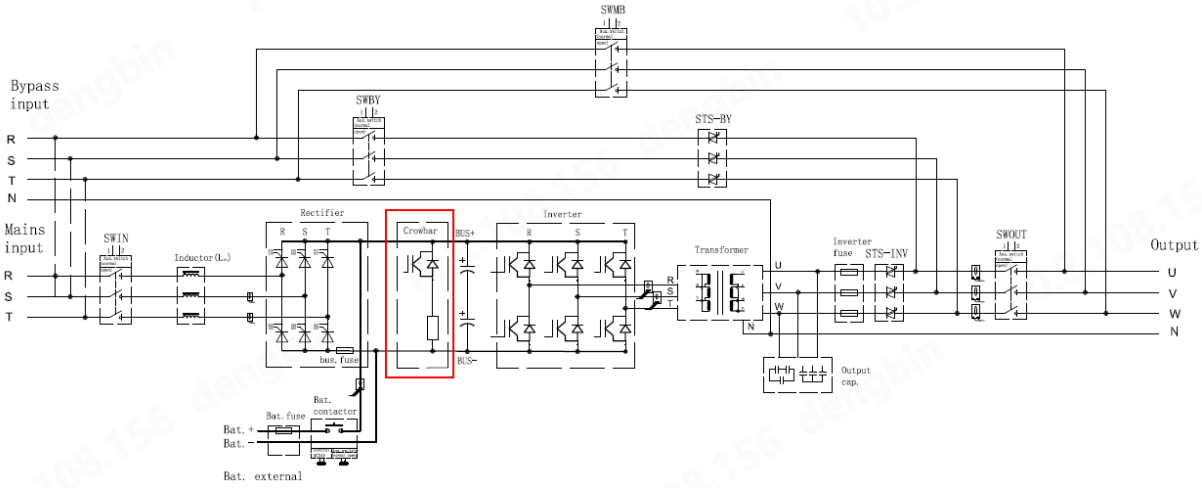
The introduction of load energy backfeed protection function

A UPS is a device that provides temporary power supply when the mains power is interrupted or unstable, ensuring that critical equipment such as computers and servers can continue to operate. However, in certain situations, the load connected to the UPS may backfeed energy, which typically occurs when motor-driven loads are braking or accelerating. This can lead to an increase in the UPS bus voltage, triggering the overvoltage protection of the UPS and potentially causing a power outage. To address this issue, the load energy backfeed protection function is introduced in UPS systems.



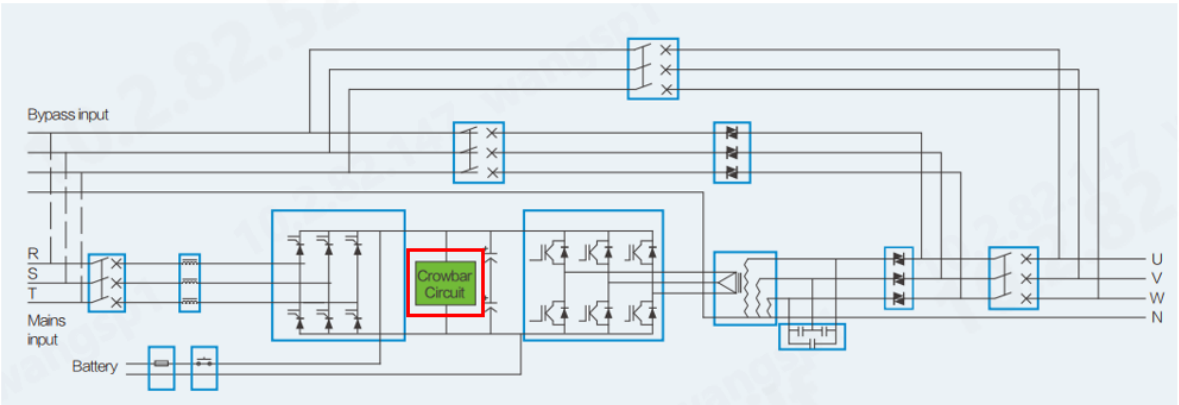
The image above is a waveform showing the energy backflush current

The energy feedback protection mainly includes a discharge control IGBT, a discharge resistor, and a voltage-current sampling circuit. When detecting backflow energy from the load, it controls the energy discharge circuit to connect with the bus, utilizing the discharge resistor to consume the backflow energy, thus preventing the bus voltage from rising and triggering a high-voltage protection.



The above figure is the Netcon Transformer-based UPS machine topology diagram, with the red box indicating the energy backflow protection device.

The energy feedback protection device can absorb feedback current, protecting the main circuit and the battery, and maintaining normal operation; without the protection device, the UPS will switch to bypass mode.



- Suitable for scenarios with feed-back loads such as elevators
- Equipped with Crowbar circuit, which can absorb the feed-back energy