Wind-RT™ LVRT Retrofit Solution

Low voltage ride-through (RT) retrofit solution designed specifically for China

China's rapid growth to become the world leader in wind power installations has created significant challenges related to low voltage ride-through (LVRT) capabilities. Today, a large number of wind turbines in China need to be retrofitted with a solution that is optimized to the needs of the Chinese grid. AMSC's solution is the Wind-RT system solution, which provides dramatically improved LVRT, simple installation and reliable operation. This patent-pending product offers a solution for new regulatory requirements applied to existing wind turbines and features powerful, cost-effective technology that allows turbines to ride through a wide range of disturbances.

Reliable LVRT capability

AMSC's Wind-RT system solution detects voltage dips in the power system and quickly isolates the turbine from the power grid. Wind-RT precisely absorbs the power generated by the turbine to maintain constant turbine torque and speed while providing reactive power to keep the turbine's generator magnetized and at a constant voltage. Once the voltage dip in the power system recovers, the wind turbine is smoothly reconnected to the power grid.

Low cost leader

AMSC's Wind-RT system solution is an easy in-tower retrofit solution for LVRT compliance. It is designed to be the simplest, most reliable and cost-effective LVRT retrofit option available today. It prevents the turbine from tripping, independent of the depth of the grid voltage sag, and keeps the generator spinning, excited and loaded during the sag.

Extended lifetime by Chinese grid code compliance

Wind-RT system solution allows existing turbines with limited LVRT capability to meet the new Chinese Grid Code, allowing the turbines to continue operation for years to come.

Wind-RT during LVRT events
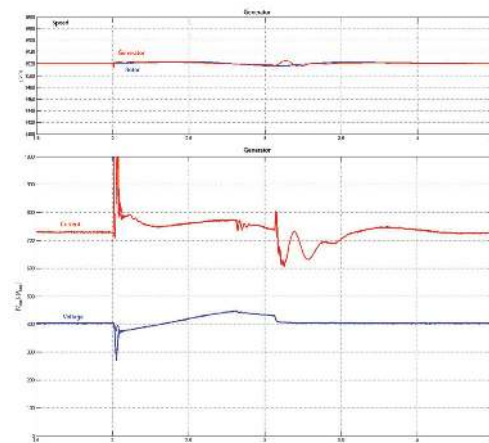
The above figure shows the torque, speed, current and voltage seen by a Wind-RT protected wind turbine during the simulation of a voltage dip down to 20% remaining voltage. The figures show that the event has minimal impact on the wind turbine such that the turbine will ride through the event and avoid tripping for any reason (i.e. overspeed, overcurrent, undervoltage, etc.).

Gridtec Solutions™

- Reliable LVRT capability

- Avoids large currents and consumption of reactive power during and after the sag

- Minimizes torque in the drivetrain gearbox

- Robust design handles high dv/dt at generator terminals

- Protects auxiliaries by keeping them at proper voltage levels

- Field-upgradable to D-VAR® RT system with reactive current injection
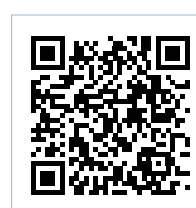
AMSC's Wind-RT system enables existing turbines to meet new Chinese codes and continue operation.

SPECIFICATIONS

Connection:	690 VAC
Frequency:	50 Hz or 60 Hz
Continuous Rating:	750 kW (628 A @ 690 VAC) to 1500 kW, (1255 A @ 690 VAC) Other power/current ratings available (Contact AMSC Sales)
Response Time:	20 ms
Low Voltage Ride Through Capability:	Voltage dips down to 20% remaining voltage Dip duration up to 3 seconds Balanced and unbalanced dips
Reactive Power Injection:	Short term injection during LVRT events is optionally available
Ambient Temperature:	-40°C to +40°C (wider ranges available)
Other:	Designed specifically for the China retrofit market Simple, high reliable design Easy installation

PRODUCT APPLICATIONS

LVRT Retrofit	Wind park and wind turbine

AMSC's support in solution planning

AMSC's Network Planning & Applications Group has decades of experience in transmission and distribution planning. We can analyze your system by performing studies for low voltage, voltage stability, transfer capacity and power quality problems. We'll work with you to develop the most cost-efficient and effective solution for short- and long-term results.

smarter, cleaner
...better energy