



# D-VAR<sup>®</sup> RT (Ride-Through) Solution

## Retrofit solution for even the strictest wind turbine ride-through requirements

With renewable energy playing a more prominent role in our power supplies, improved low voltage ride-through (LVRT) and high voltage ride-through (HVRT) capability is becoming critical for existing wind turbines. AMSC's full-featured fault ride-through retrofit solution is the D-VAR RT (ride-through) system, which is designed to allow existing wind turbines to meet even the most restrictive grid interconnection requirements. 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.

### Answer to new regulatory requirements

AMSC's D-VAR RT system brings a comprehensive solution to operators of existing wind turbines that face challenges due to new regulatory requirements. Recent examples include the Spanish grid interconnection requirement P.O.12.3 and the Chinese Grid Code.

### Powerful, cost-effective technology

The D-VAR RT in-turbine system utilizes proven, cost-effective technology that dynamically stabilizes wind turbines. D-VAR RT systems provide reactive current injection during ride-through events to help the system recover quickly and to allow the wind turbine to comply with even the most restrictive LVRT requirements. The D-VAR RT system can be combined with AMSC's widely applied D-VAR STATCOM systems to solve a wide range of issues in addition to LVRT; such as steady state voltage and power factor regulation.

### Smooth ride-through for various disturbances

The D-VAR RT system contains highly tolerant power electronic components and controls that protect wind turbines from a wide range of system disturbances with minimal or no need to modify the turbine hardware or protection system. D-VAR RT systems also provide capacitive reactive current injection during low voltage events to help facilitate grid recovery and offer an option for adding steady-state power factor control.

AMSC's patented D-VAR<sup>®</sup> technology for reactive power compensation is already serving thousands of megawatts of power in wind parks around the world.



- Complies with latest ride-through specifications
- In-tower installation for cost-effective stabilization
- Minimal or no need to modify the existing turbine hardware or protection settings
- Provides capacitive reactive current injection during low-voltage events to meet even the most stringent interconnection requirements
- Can be combined with AMSC's D-VAR STATCOM to provide steady-state voltage and power factor control





AMSC's D-VAR RT system helps new and existing turbines meet the latest regulatory requirements.

**SPECIFICATIONS**

Connection:	690 VAC
Frequency:	50Hz 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 standard Faster response times available
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:	Up to nameplate rating (628 A for 750 kW version) Short-term injection during LVRT events is standard
Ambient Temperature:	-40°C to +40°C (wider ranges available)
Other:	Designed to meet even the most stringent LVRT requirements Simple, highly reliable design Easy installation

**PRODUCT APPLICATIONS**

LVRT and HVRT Retrofit Reactive Current Injection	Wind parks, wind turbines
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**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.