

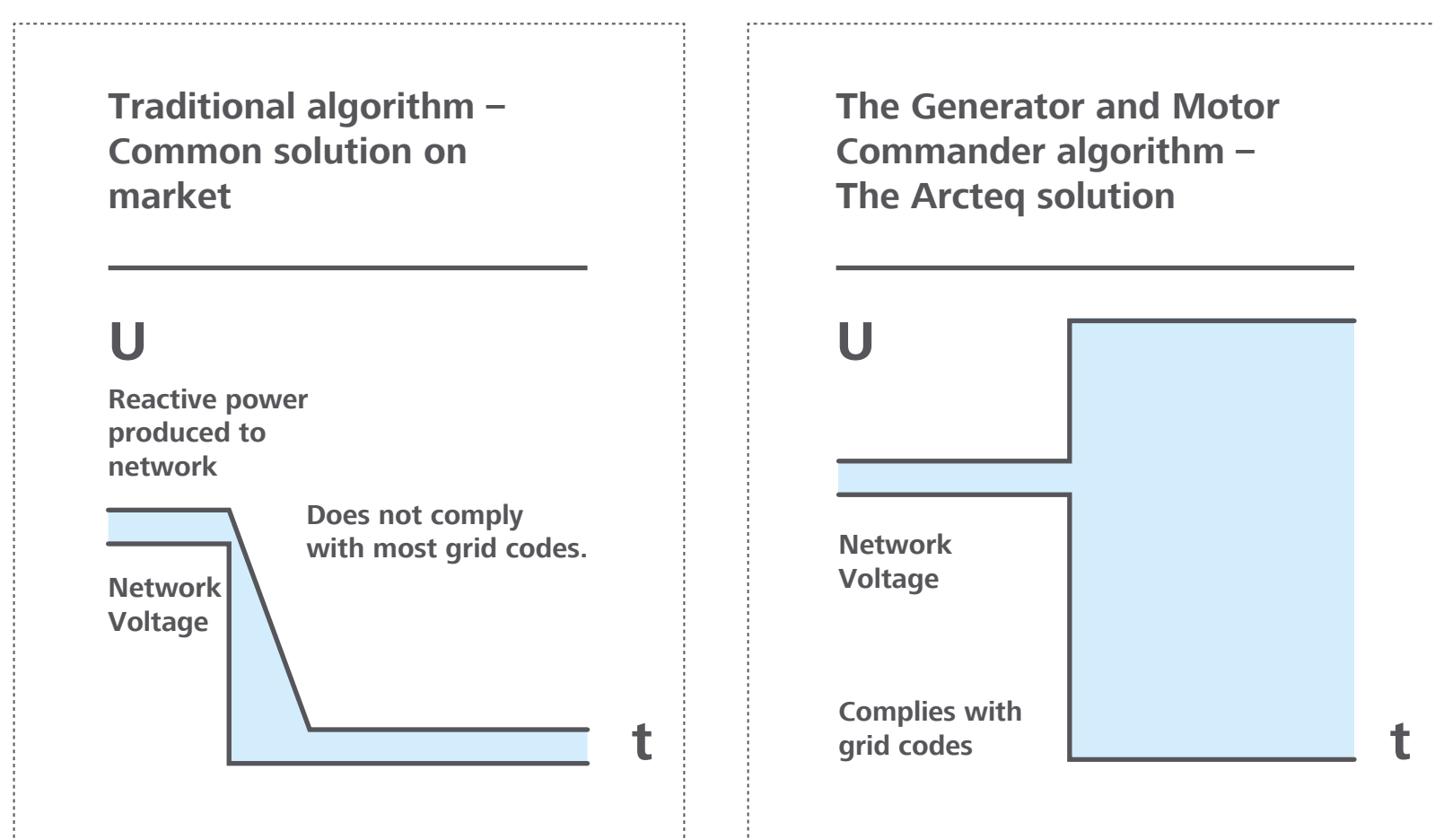
Arcteq Innovation: Generator and Motor Commander

Synchronous machine control & protection in one package

The Generator and Motor Commander is a novel solution combining machine protection and control into one unit. Compared to traditional systems with several separate units and software, the Generator and Motor Commander takes less space and saves considerable hours of engineering time. Operation is smooth as there is only one interface to the system. The Commander is suited for synchronous generators and motors of up to 250 MW, making it ideal for any power plant or industrial application where both protection and control of generators or motors is needed.

The Commander is equipped with a sophisticated network compensation algorithm and Power System Stabilizer making it compliant even with the most rigorous grid codes. The included features of synchronizer and synchro check allow for safe power grid connection.

The network compensation algorithm can utilize Automatic Voltage Regulator (AVR) as a base control mode and MVar control mode as a supportive mode. As a result, the algorithm can effectively compensate the networks voltage dips.



Common solution in the market where MVar control will follow the network voltage dip. The Commander compensates the network dip by applying AVR and MVar control modes simultaneously.

When used in the motor mode, the Commander provides for versatile motor start-up sequences for either direct started or transformer or reactor started motors. Utilizing Commander's intelligent MVar control algorithm, the parallel running synchronous motors compensate the reactive power consumed by the starting motor by pushing more reactive power to the network. After successful start-up the motor is synchronized and switched automatically to AVR control mode.

Included in the Generator and Motor Commander:

- » Generator or Motor Protection
- » Differential Protection
- » Synchronizer with synchro check
- » Excitation control with external IGBT bridge
- » Power and energy measurement (0.2S)
- » IEC 61850, IEC 103/101/104, Modbus, DNP 3.0 and SPA protocols

Benefits of the Generator and Motor Commander

- » Up to 40 % savings in time & cost for installation and commissioning
- » Reduced maintenance and life cycle cost.
- » Only two spare parts needed for the whole system
- » Up to 86% space saving
- » Easy to duplicate for redundancy
- » One tool, one interface to all functionality
- » Software wizards for automatic setting calculations

