

Grid Solutions

# MAJOR US CHEMICAL COMPANY UPGRADES TO INTEGRATED PROTECTION & CONTROL SOLUTION FOR SYNCHRONOUS MOTORS

Case Study



GE VERNOVA

# PROJECT OVERVIEW

<b>Country:</b>	United States
<b>Project:</b>	Upgrading Protection for Synchronous Motors
<b>Customer:</b>	Major US Chemical Company
<b>Technology:</b>	Multilin 869 motor protection relay
<b>Scope:</b>	A legacy GE Vernova 139 protection relay and an SPM synchronous motor protection unit installed in 1990 were replaced by a single Multilin 869 motor protection relay, a member of the 8 Series platform of protection relays. The relay protects a 350HP, 2,300V synchronous motor running a large VPH compressor.

## THE CUSTOMER CHALLENGE

The company is one of the world's largest chemical manufacturing companies with a wide range of products including plastics and adhesives. Synchronous motors are an important part of their production facilities, including one of their facilities in southwestern United States, which produces a number of chemical products. Operators at the site were grappling with outdated protection and monitoring technology in the relays protecting a 350HP, 2,300V synchronous motor. Two legacy relays protecting the motor lacked the modern functionality necessary to identify operational abnormalities or problems and troubleshoot them. As a result, downtime and time to restoration had increased.

## THE SOLUTION

The company replaced the legacy 139 protection relay and SPM synchronous motor protection unit with a single Multilin 869 motor protection relay. An adapting plate was designed to fit the Multilin 869 unit into the cutout space of the 139 and SPM setup, ensuring panel modifications would not be needed.

The Multilin 869 relay is part of the Multilin 8 Series protective relay platform and has been designed for the protection, control, and management of medium and large induction and synchronous motors. It is equipped with an integrated synchronous motor protection module and provides advanced functionality for such applications as high-speed protection, extensively customizable programmable logic, advanced motor monitoring and diagnostics, and flexible configuration capabilities. Advanced communications in the Multilin 869 relay allow for easy integration into process and electrical control systems to provide clear situational awareness and improved asset monitoring and control.





## THE BENEFITS

Consolidation of the two legacy devices into a single unit saved on cabinet space, simplified wiring, and reduced commissioning time, ultimately resulting in total installed cost savings.

Door simplification and reduced hardware led to better visualization and more simplicity with a reduced number of panel indicators. Plus, the configurable graphical display on the 869 provides operators with better visibility of critical status information on the protected motor.

After installation, the 869 was successfully commissioned with a complete start-sequence data evaluation recorded. Excitation was adjusted for load conditions, and the synchronous motor was running at leading power factor, close to unity for maximum efficiency.



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