GE
Measurement & Control

OptiComp* Compressor Train Control Suite

OptiComp is GE's newest evolution of compressor control software for axial and centrifugal compressors. Optimizing your process efficiency while controlling and enhancing protection for your Compressor—that's what OptiComp is designed to accomplish.

GE's OptiComp compressor control solution is the culmination of decades of OEM experience with over 600 installations controlling centrifugal and axial compressors in many oil and gas applications around the world.

Compressors are often a critical piece of machinery in the oil and gas industry. Compressor performance and anti-surge controls have a direct and immediate impact on process and profitability. OptiComp control algorithms offer a best-in-class approach to balancing process stability with compressor protection.

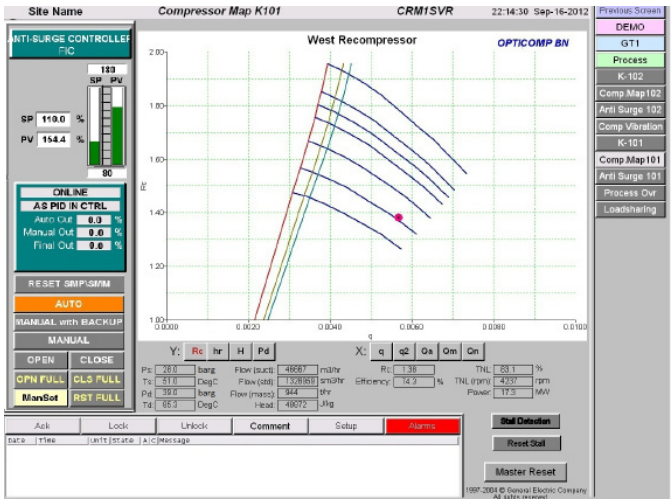
What's New?

GE has enhanced its proven software and algorithms by adding new and improved capabilities.

- Model Based Control incorporating recycle loop dynamics provides improved control and protection over standard PID control†.
- Instrument failure diagnostic based on model prediction reduces potential for unnecessary recycle or trip upon input transmitter failure†.
- High fidelity compressor and process simulation provides preliminary tuning constants, reducing plant start-up time and improving accuracy of compressor map and operating point to optimize overall system performance†.
- Available Inlet Guide Vein (IGV) compensation using double interpolation provides improved surge prevention and process stability for various IGV positions.
- Optional real-time inputs for improved estimation of gas properties such as compressibility, density, and polytropic exponent.

Features & Benefits

- **Better Protection**
  - Polytropic Head vs. Inlet Volume Flow calculations provide improved protection with varying operating and gas compositions.
  - Rate control (derivative response), boost (open loop response), and normalization of valve response as a function of pressure ratio/ gas properties provides improved protection over a wide range of disturbances and process conditions.
  - Advanced surge detection using multiple process variables.
- **Improved Process Stability**
  - Suction and discharge pressure override control utilizes the recycle valve to help stabilize the process.
  - Improved diagnostics for process signals validity and fallback strategies for failed transmitter inputs, minimizes potential for unnecessary recycle.
  - Decoupling between driver and compressor provides more reliable and stable process capability by reducing unnecessary trips and process swings.



- **Efficiency**
  - Parallel/Series Load-sharing parameter selection between driver and compressor performance increases operational efficiency during normal operations, as well as balancing compressor flows during reduced operations.
  - Performance and efficiency calculations using real gas properties provides valuable benchmarking information for evaluating changes in overall train efficiency.
  - Improved surge prevention, reducing recycle and improving efficiency.
- **Simplification**
  - OptiComp can be integrated with motor, gas or steam turbine controls in simplex, duplex and TMR configurations, taking full advantage of sophisticated decoupling algorithms for better coordinated turbine and compressor control responses. In addition, having an integrated system simplifies troubleshooting, maintenance and repair activities providing common, time synchronized sequence of events and trending functionality. The common control platform also reduces the number of vendors to deal with, spare parts and training requirements, as well as multiple control system interface issues.
- **Flexibility**
  - In some applications, compressor control issues are unique and cannot always be resolved using "off-the-shelf" solutions. Customers require both a proven approach along with system flexibility in order to address their specific problems. OptiComp provides just that. The core control responses are used for every compressor control application, with the programming flexibility to meet control challenges. OptiComp is scalable from a single compressor anti-surge and performance control to multiple turbine/compressor trains including all auxiliaries and overall process control.

Additional Features

- Upgradeable and expandable system
- Integrated system means lower costs
- Real-time Compressor Operating Map
- Anti-surge PID enhancements with dead time compensation, anti-hysteresis, and variable gain

OptiComp BN

Radial and Axial vibration from GE's Bently Nevada 3500 for increased performance

The OptiComp BN option is a patented technology that integrates radial vibration signatures from rotating stall conditions in the surge region with classic process measurements to provide better anti-surge protection. Axial displacement measurements provide an incremental and robust surge detection to OptiComp's already superior capabilities.

More Confidence

With GE, you get outstanding compressor protection and control, based on decades of experience as a controls provider and as an OEM for compressors, backed by one of the most successful providers of turbomachinery equipment and controls in the world today.

GE's deep domain and installation expertise in compressors and turbines means OptiComp provides great control and protection for just about any compressor application. When OptiComp is combined with a GE compressor, our optional model based control features provide even better protection and process stability...a winning combination.

For more information please contact:
GE Measurement & Control
North America: 1-888-943-2272; 1-540-387-8726
Latin America (Brazil): +55-11-3958-0098
Europe (France): +33-2-72-249901
Asia/China (Singapore): +65-6622 1623
Africa/India/Middle East (U.A.E.): +971-2-699 7119

Email: ControlsConnect@ge.com
Customer Portal: ge-controlsconnect.com

1800 Nelson Road
Longmont, CO, USA 80501

GEA20303A (05/2015)