GE VERNOVA

FACT SHEET

SEMIPOL™ D4.2 CONTROLLER UPGRADE

Advanced technology injected into existing asset

Many reasons to upgrade now

SEMIPOL™ D3.x (D3.0/D3.1) has now become obsolete. Power Conversion & Storage can offer a cost-effective solution to extend the lifecycle of your drive and also improve its performance.

If you are currently relying on vintage controls of the SEMIPOL™, obsolescence is a risk that cannot be ignored. With the cost-effective and standardized controller upgrade for your SEMIPOL™, you can avoid obsolescence, save time, and the expense of a complete system replacement, and at the same time improve reliability.

This efficient upgrade will modernize your controls and data interfaces, thereby substantially improving control capabilities and performance. Extensive diagnostics can enable easier maintenance and GE Power Conversion & Storage's service products can help you get the most value out of SEMIPOL™.

IT'S TIME TO UPGRADE – NOW!

CONTROLLER UPGRADE PROCESS

Status check
Site intervention – recording of SEMIPOL™ D3.x system status

Order upgrade
Definition of project specific details and technical specifications

Engineering
Applying standardized solution for SEMIPOL™ D3.x generation with a tested interface between control components and existing power modules

Installation and commissioning
Replacement of legacy controller components with pre-assembled mounting plate of new controller. Commissioning and one-to-one adaption of old system settings.

Increased timeline
Rely on increased performance and advanced service products

Secure grid compliance
New excitation control will secure compliance with current grid regulations

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Benefits and features

We understand your industry and designed our product features to match your specific requirements.

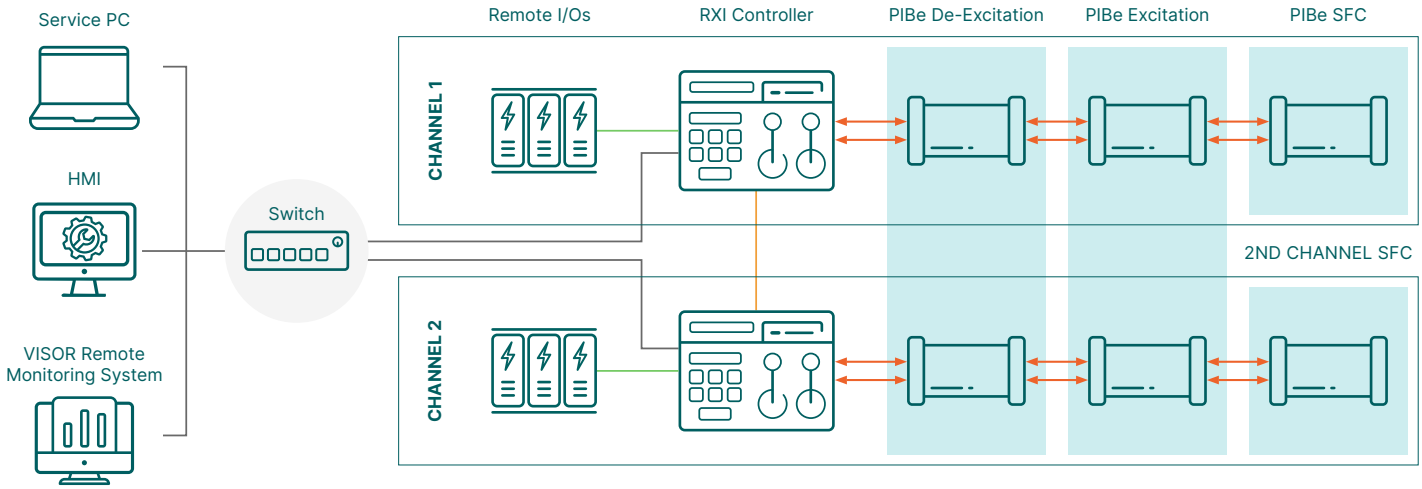
- **State of the art** D4.2 technology with sophisticated tools (PECe based)
- Controller upgrade **allows interfacing with all supplementary Power Conversion & Storage products** (Visor Remote Monitoring, 24×7 Tech Support, Predictive Maintenance)
- **Lifecycle extension** of SEMIPOL™
- **Spare parts** availability for the new controller components as for the old power stacks. D3.x controller parts are obsolete.
- **Performance enhancement** of SEMIPOL™
- **Easy and intuitive use** for the operators
- **Cost-effective** solution – compared to a complete replacement
- **No civil works required** for controller upgrade
- **Reduced maintenance** and downtimes
- Integration of SEMIPOL™ to **modern power plant control systems**

Proven D4.2 technology for tomorrow

Our controller upgrade combines sophisticated hardware control components with high reliability based on the HPCi with PECe.

The Power Electronics Controller offers daisy chained components with real time processing without buffering or storing, including:

- **Rxi Controller:** Industrial PCs ensuring use of up-to-date processor technology
- **PIBe:** Power Interface Boards with high reliability actual values processing and pulsing for power stacks.
- **Inputs-Outputs (I/O) Module:** Each automatic channel has its dedicated I/O module ensuring maximum redundancy
- **HMI:** Powerful industrial PC with 15” touchscreen for seamless operation, offering user-friendly diagnostic pages for quick and efficient troubleshooting.
- **Power Supply:** Advanced redundancy with complete channel separation using electronically short circuit limiting circuit breakers
- **Visor:** Connectivity via VISOR BOX and immediately generated auto-notifications to the experts for faults and alarms (24×7)
- **Fast De-Excitation Modules:** Replacement of obsolete DC breaker



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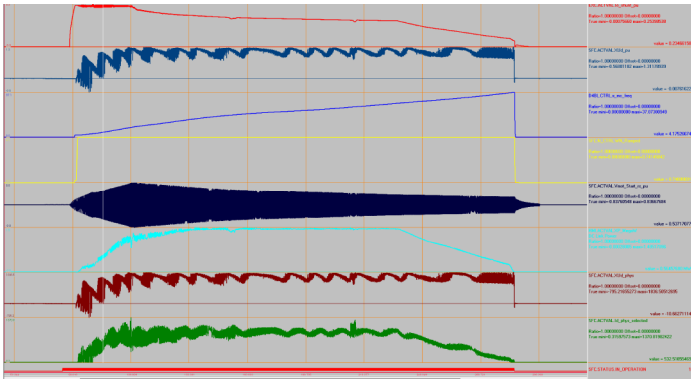
Intuitive HMI Operator Screen

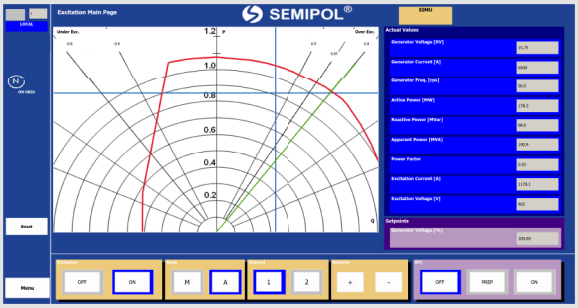
Easy to use – optimized for troubleshooting

Comprehensive diagnostic possibilities featuring simple handling, without complex and confusing fault messages. Designed for operators to troubleshoot faster and most efficiently:

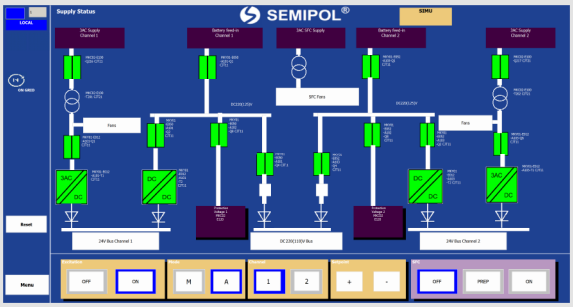
- Extended time of signal recorder
- Real time online scope
- Power supply monitoring pages
- Live single line drawing
- HMI based commissioning tools for pulse /voltage /current testing without needing to handle complex software logic for performing simple tests.



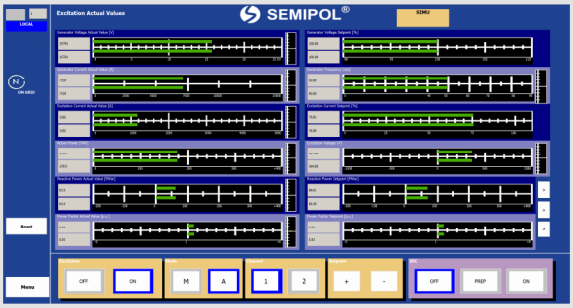
Real time online scope (Pertu)



Operators main SEMIPOL™ screen



Power Supply monitoring page



Actual value monitoring page

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SEMIPOL™ D4.2

Controller Upgrade Key Features

The advanced redundancy will increase the reliability of your SEMIPOL™ system – reducing the downtimes and unexpected shutdowns.

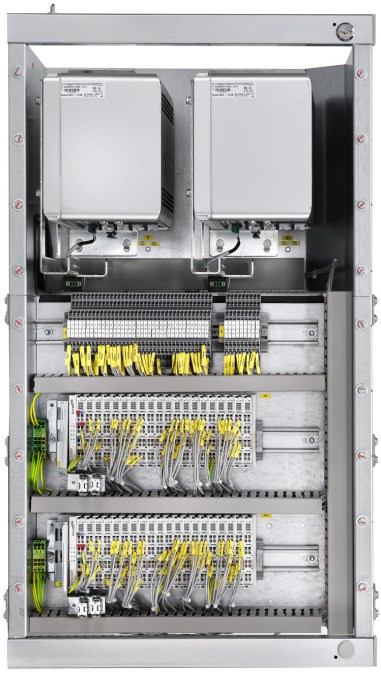
- "State of the Art" PECe system with Industrial PCs and PIBe minimizing the number of different components installed in the system
- Advanced redundancy up to the power electronics and dedicated I/Os in each channel
- Modern and accurate actual value processing boards
- Sophisticated cross monitoring between the two automatic channels
- PSS2B or PSS2C for active power optimization
- Bump-free channel change over due to fast link high speed connection.
- Parts and service availability
- Advanced configuration and diagnostics software
- Extended capability for gird compliance testing

SEMIPOL™ D3.X

Legacy Solution Limitations

Spare parts for the legacy solution technology are limited.

- VME Bus based control rack (different type of boards for every function i.e. control, thyristor firing, actual values processing etc.)
- Limited redundancy with both channels sharing the modules
- Low resolution actual value measurement
- Simple channel monitoring
- PSS2A



THIS SMART UPGRADE WILL:

- **Avoid time and expense of complete systems replacements**
- **Improve control capabilities and performance**
- **Improve reliability and service ability**
- **Extend life of critical control components**

CONTACT US:
semipol.ito@gevernova.com

Power Conversion & Storage
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