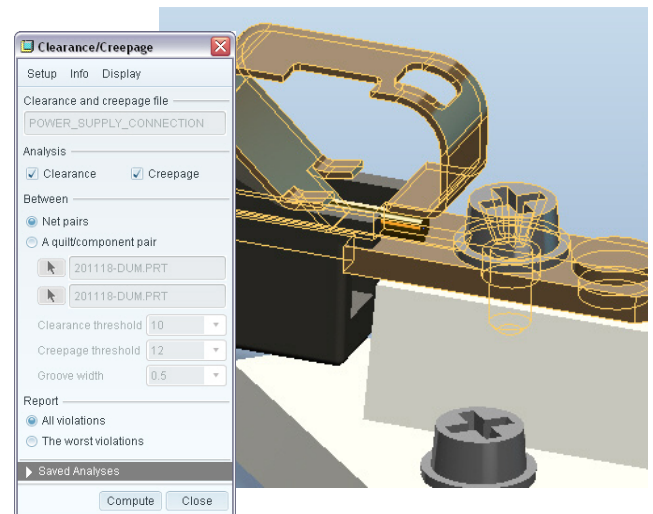# Pro/ENGINEER® Spark Analysis Extension

AUTOMATE YOUR CLEARANCE AND CREEPAGE ANALYSIS

Electrical product safety is a necessity in today's competitive market. It is a growing challenge across industry verticals such as Automotive, Aerospace & Defense, and Electronics & High Tech, as more products now have mechatronic elements incorporated into their designs. The smallest electromechanical design errors can cause circuit damage, overheating, and even fires or explosions. While companies must get products to market faster and more cost efficiently than ever before, they must also minimize the increasing risks of product failure and injury.

Electromechanical product safety is often plagued by inefficient design processes due to the use of "rule of thumb" design for safe electrical clearance and creepage distances. This often results in products that are over-designed, yielding designs that are too large, too expensive, or simply unable to meet space and performance requirements as the complexity of products increases. In addition, manual calculations are still frequently used to analyze clearance and creepage characteristics. These calculations are not only error-prone, but they become impractical as the number of components increases to over 1,000 or even 10,000 for products such as networking communications equipment. Thus, many companies rely either on time-consuming and expensive physical prototyping and testing or on less-rigorous analyses, which can result in costly field failures and product recalls.

Today, in order to streamline your design process to get winning products to market faster and ensure product safety, traditional clearance and creepage analysis methods are no longer suitable. The Pro/ENGINEER Spark Analysis Extension (SAX) is the only solution that can help improve the speed and accuracy of your analysis. With the Pro/ENGINEER Spark Analysis Extension, you can ensure product safety and optimize your electromechanical detailed design process.

Pro/ENGINEER Spark Analysis Extension helps you automate electrical clearance and creepage analyses of 3D designs.

Key Benefits

- Automates electrical clearance and creepage analysis directly on the digital model
- Clearly identifies product safety issues
- Improves design quality by helping optimize designs for electrical product safety
- Saves time and reduces prototype costs
- Reduces production rework and scrap

Faster Clearance and Creepage Analysis

Capabilities and Specifications

Easy-to-use, Automated Clearance and Creepage Analysis

- Provides easy model setup
- Defines the minimum distances required to provide proper insulation
- Verifies that measured distances comply with clearance and creepage files for nets (a group of conductive components and/or quilts), components, and assembly quilts

Model Setup

- Quickly define the conductivity of components by adding the Comparative Tracking Index (CTI) parameter to parts
- Temporarily colorize components and quilts based on the CTI to enable fast visual feedback
- Use Microsoft® Excel® to define nets and associated clearances

Flexible Analysis

- Define the minimum distances required to ensure product safety
- Define the groove width for short-circuit path calculation
- Analyze and verify clearance and creepage distances between quilts, components, or nets

Analysis Results

- Easily investigate violations in the results window; when a violation is selected, the path will be displayed in the graphics window to help the user better understand the failure
- Quickly determine whether a net has been analyzed, passed, or failed, or whether a failure has been overridden, by viewing the status of all nets listed in the results window
- Gain greater insight into design decisions; results that have been overridden automatically save the user name in the assembly, along with information that describes why the violation was overridden
- Save analysis results with the top-level assembly for design reviews
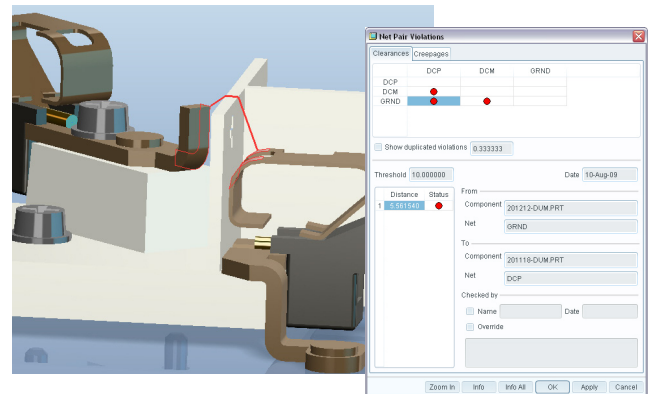
Language Support

English, German, French, Italian, Spanish, Japanese, Chinese (Simplified and Traditional), and Korean

Platform Requirements

Microsoft Windows (Vista and XP)
UNIX (Solaris)
64-bit processor recommended
Minimum 32GB of RAM
200GB swap space recommended

For the most up-to-date platform support information, please visit:
PTC.com/partners/hardware/current/support.htm

For more information, please visit the Pro/ENGINEER Spark Analysis Extension page on **www.PTC.com**

Pro/ENGINEER Spark Analysis Extension helps you easily identify product safety violations.

The Pro/ENGINEER Advantage

Pro/ENGINEER is simple to learn and use, and is available in a variety of packages designed to meet your company's specific needs. Whether you need a cost-effective 3D CAD system that contains the basic design capabilities, or a comprehensive Product Development System that seamlessly connects your extended supply chain, you'll find exactly what you need in a single, fully scalable solution. Choose the package that fits your needs today, and as your needs change and grow, you can easily upgrade to the package that is right for you tomorrow, while leveraging the same powerful platform—this means no data translation and a consistent user experience.

Pro/ENGINEER Spark Analysis Extension helps you streamline electromechanical design processes. As part of the Pro/ENGINEER family of integrated 3D CAD/CAM/CAE solutions, it delivers a distinct advantage for engineers and designers since Pro/ENGINEER is fully associative. That means any change made to the design is automatically reflected in all downstream deliverables—without any translation of model information. By eliminating data translation, you not only save time, but also avoid the possibility of translation errors in your design. Pro/ENGINEER gives you everything you need to create high-quality, winning designs.