

What's new in NX Automation Designer and NX Industrial Electrical Design

Boosting engineering productivity with a new level of multidisciplinary collaboration

Benefits

- Leverage multidisciplinary collaboration to increase engineering quality and reduce engineering time
- Use an integrated data model for electrical design and automation software to reduce errors and improve engineering efficiency and consistency
- Use rule-based engineering to eliminate errors, enable control and validation of engineering data and improve reproducibility
- Reduce risk by leveraging mechatronic templates for easy knowledge re-use
- Deliver faster time-to-market through shorter engineering change cycles and use of the digital twin of production
- Reduce cost of ownership by using OOTB software to save IT maintenance costs

Summary

NX[™] Automation Designer software and NX Industrial Electrical Design software provide a central application for automation and industrial electrical design. The combination enables manufacturers of production systems, faced with an increasing degree of automation and flexibility requirements, to manage design complexity, shorten their development lifecycles, and increase the quality of their designs. Through direct integration with Teamcenter® software for product lifecycle management (PLM) and the rest of the NX design portfolio, the software provides a unified multidisciplinary design environment for production systems engineering. NX Automation Designer and NX Industrial Electrical Design are part of the Xcelerator portfolio of software and services from Siemens Digital Industries Software.

Highlights of the new release include:

• 2D schematic creation enhancements

- Improved workflow for naming of terminals in terminal strips
- Support for busbars
- Improved electrical documentation

 Inclusion of project-wide title page
 - Support for definition and visualization of jumpers and wire bridges
 - Integration of mechanical view in 2D schematics
- Expanded automation hardware configuration support
 - Export of third-party hardware configurations via Automation Markup Language (AML)
 - Native drive configuration for TIA Portal
- Improved software generation capabilities
 - Combine software methods from different TIA Portal versions
 - Automatic inclusion of function calls
 - Support for structured variables
- Integrated machine tool engineering
- Engineering efficiency enhancements
 Apply value set based on decision logic
 - Expressions copy and paste between objects
- Simplified library management
 - Product data update with repeated eCl@ss import
 - Library data transfer

The further development of the newly introduced NX Industrial Electrical Design provides electrical engineers with additional capabilities for electrical design within the industrial space. The 2D schematic and documentation tools

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have been enhanced for more complete engineering and improved documentation.

2D schematic creation

With the latest release of NX Industrial Electrical design the creation of 2D electrical schematics has never been easier. The new version comes with an improved workflow for naming of terminals and terminal strips to accelerate and

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simplify the process. Users can quickly change names based on sequential numbering, potential or a combination of both, all from an easy-to-use dialog.

To support a more holistic electrical design environment, NX Industrial Electrical Design also supports the definition of busbars and their connections. This capability enables electrical engineers to implement busbars in their designs and to have busbar connections managed by the system.

Improved electrical documentation

Electrical schematic documentation is a key element of electrical design and is integral in efficient production of machines and robotic cells. The latest version of NX Industrial Electrical Design provides additional functionality to enable electrical engineers to better document their electrical designs, including the addition of a project-wide title page to quickly provide a summary of project information within the schematic book directly from project information.

The latest version also provides enhancements to the terminal diagram reports that allow engineers to define and visualize jumpers and wire bridges on the reports, enabling easier identification during panel fabrication.

To improve the labeling and build simplicity for manufacturing, NX Industrial Electrical Design has added the ability to integrate mechanical views directly within the 2D schematics. These views can be created directly from the





mechanical design models without leaving the NX application or seeking assistance from mechanical departments, saving significant time when creating documentation.

Expanded automation hardware configuration support

The design of automation hardware is a core task of electrical engineers that is often repeated by the automation engineer. To further reduce the duplication of efforts, the latest version of NX Automation Designer includes functionality for exporting third-party programmable logic controller (PLC) hardware configurations in the AML standard, so that the engineering efforts can be

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The latest version of NX Industrial Electrical Design.

imported into downstream PLC programming tools without the need for repeating the engineering. Support for SINAMICS combined drive modules and DRIVE-CLiQ configurations has also been introduced to enable the direct export of these native drive configurations over the existing TIA Portal integration.

Improved software generation capabilities

The latest release of NX Automation Designer also comes with new capabilities to support PLC software developers in creating software faster and more effectively. These include the support of structured variables in the creation of methods and data block generation, leading to a 95 percent time savings in creating methods utilizing such structures.

The enhancements provide significant improvements, particularly for automotive customers that use these often in their programming standards. Customers will also benefit from enhancements enabling the integration of software methods created from various TIA Portal versions. These changes enable a significant reduction in change management required to maintain and update TIA Portal standards over time. In addition, changes to the handling of functional calls to automatically add them from the library when they are used in code improve the consistency of workflows in the system and simplify library management.

Integrated machine tool engineering

Customers creating machine tools will benefit from a new end-to-end engineering workflow that enables completion of the entire electrical and controls design within NX Automation Designer. New functionality enabling the export of SINUMERIK ONE configurations and hardware design to both Create MyConfig and TIA Portal enables



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machine tool designers to simply their design efforts into one tool that shares data with both downstream processes. This significantly improves the collaboration between disciplines when designing such systems.

Engineering efficiency enhancements

One of the core benefits of using NX Automation Designer is increased engineering efficiency through collaboration and re-use of engineering results. The newest release enhances these capabilities further. Through the ability to apply value sets based on decision logic, the collaboration between mechanical and electrical design is accelerated significantly, by allowing electrical design to automate design decisions based on mechanical inputs. In this way, tasks like drive, wire and breaker selections can all be automated by selecting the right components through power information provided by the mechanical design.

New functionality to copy expressions and configuration rules between objects in NX Automation Designer has also accelerated the creation of re-use models within the system and improves the consistency of the models.

Simplified library management

Re-use and the effectiveness of libraries unlock the benefits of an integrated engineering environment. The latest release brings improved handling of electrical device data through the introduction of direct product data updates through the existing eCl@ss import, allowing for simplified product updates when manufacturers provide a new product release. In addition, the release enables a simplified transfer of library data between Teamcenter instances, allowing standards to be shared between organizations.

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