



# SOLIDWORKS ELECTRICAL

## OBJECTIVE

SOLIDWORKS® Electrical helps companies simplify the electrical design process and enables concurrent development of electrical and mechanical aspects of a design. SOLIDWORKS Electrical is unique in its ability to provide a real-time, bidirectional link between SOLIDWORKS Electrical schematics and 3D mechanical models. This offers a clear advantage to any company where two or more users must collaborate on a project, and having up-to-date and synchronized information is a must.

## OVERVIEW

SOLIDWORKS Electrical is a set of computer-aided engineering (CAE) design tools that are integral parts of the SOLIDWORKS design and simulation portfolio. SOLIDWORKS Electrical helps design engineers reduce the risk inherent in innovation, enabling companies to get products to market faster and with less cost, due to a decreased need for physical prototyping. With a powerful and intuitive set of electrical design capabilities, designers can establish an integrated design early in the design process. This helps minimize or even eliminate potential defects and avoids costly design rework, saving time and money.

## BENEFITS

- Streamline the development process.
- Avoid hidden costs.
- Reduce manufacturing defects.
- Avoid time-to-market delays.

## CAPABILITIES

- SOLIDWORKS Electrical schematics are bidirectionally linked to allow multiuser interaction in real time. They're also linked to your 3D SOLIDWORKS assembly, facilitating verification of proper fit; planning of all wire, cable, and harness routes; and calculation of wire lengths prior to assembly.
- Working with ECAD and MCAD together ensures consistency and facilitates the creation of Bills of Material (BOM).
- Component database is easily linked to MRP/ERP to ensure that proper part numbers, pricing, supplier info, lead-time, and other relevant data is captured at the time of design.
- SOLIDWORKS Electrical, with its real-time, multiuser design, enables complex schematic designs to be easily shared across multiple disciplines.

- SOLIDWORKS Electrical translates single-line schematics into detailed multiline power and control and PLC schematics.
- SOLIDWORKS Electrical offers detailed terminal strip management tools.
- SOLIDWORKS Electrical allows for the reuse of existing designs.

## SOLIDWORKS ELECTRICAL SCHEMATIC PROFESSIONAL

SOLIDWORKS Electrical Schematic Professional is a powerful, easy-to-use schematic design tool for the rapid development of embedded electrical systems for equipment and other products. It features built-in and web-enabled libraries of symbols and manufacturer part information to streamline the design process. With these automated design and management tools, users can simplify an array of tedious design tasks, from terminal block to contact cross-reference assignments.

- **Single-line schematic:** Produce complex embedded electrical systems utilizing simple pictorial representations of electrical components and interconnectors with this planning tool.
- **Multiline schematic:** Create traditional schematics with this tool's simplified user interface (UI), optimized to manage repetitive tasks.
- **2D cabinet creation:** Generate 2D panel representations from an electrical schematic, with 2D outlines of electrical components.
- **Electrical component and symbol library:** Access this extensive library of industry-standard schematic symbols, combined with a database of manufacturer parts, to provide an easily customizable and adaptable parts base through easy-to-use import tools.

- **Design and reuse:** Explore the suite of integrated tools for intelligent cut-and-paste, an easy-to-access selection of favorite components and circuit design elements, and the ability to reuse non-SOLIDWORKS Electrical design elements through easy-to-use import wizards.
- **Automated terminal drawing creation:** Automatically generate terminal drawings based on and synchronized with the real-time design.
- **Report generation:** Automatically generate reports based on real-time design database queries, with custom reports possible via integrated custom report-creation tools.
- **Automated contact cross-referencing:** Electrical contacts are automatically cross-referenced in real time and synchronized based on availability and type of contacts from manufacturer-specific components.
- **PLC tools:** The programmable logic controller (PLC) management tools automate many PLC wiring design tasks, along with the ability to import PLC data and labels.
- **SOLIDWORKS Enterprise PDM integration:** Automate publishing of schematic data, drawings, and reports for archival and revision control.

These capabilities increase the speed and accuracy of electrical systems design. Users can create and modify PLC drawing configurations, report templates, and design rules. SOLIDWORKS Electrical Schematic Professional offers the ability to import data configuration and data from Excel, and work with real-time synchronized BOMs.

### SOLIDWORKS ELECTRICAL SCHEMATIC STANDARD

Schematic Standard offers a subset of the features of Schematic Professional for those not needing the full feature set. Contact your reseller for more information.

### SOLIDWORKS ELECTRICAL 3D

This solution allows for the integration of electrical schematic design data with the SOLIDWORKS 3D model of a machine or other product, bidirectionally and in real time. SOLIDWORKS Electrical 3D enables users to place electrical components and use advanced SOLIDWORKS routing technology to automatically interconnect electrical design elements within the 3D model. Users can determine optimal lengths for wires, cables, and harnesses, all while maintaining design synchronization between schematic and 3D.

- **Electrical 3D:** Electrical schematic design data from SOLIDWORKS Electrical Schematic are bidirectionally integrated with the SOLIDWORKS 3D CAD model.
- **Real-time collaboration:** Synchronized, bidirectional environment enables multiple users to work on the same project simultaneously and in real time for easier project collaboration.
- **Auto-routing:** Advanced SOLIDWORKS routing technology simplifies the auto-routing process for wire, cables, and harnesses in the 3D CAD model.
- **Harness development:** Create schematic-driven harness designs utilizing real-time bidirectional functionality, coupled with powerful routing and flattening, and automatic documentation.
- **Real-time synchronization:** All project design data are bidirectionally synchronized in real time between schematics and the electrical 3D model in a multiuser, collaborative environment.
- **Manufacturer's electrical component library:** Extensive integrated library of manufacturer parts provides an easily customizable and adaptable parts base through easy-to-use import tools and wizards.

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