

# SOLIDWORKS ELECTRICAL

Real-time integration of 2D and 3D electrical system design



Bottle Filling Machine | Fogg Filler

## MODERNIZE YOUR ELECTRICAL SYSTEM DESIGN

Increasingly products have embedded electrical content, including power systems, user controls, complex wiring, and harnesses. SolidWorks® Electrical simplifies electrical system design with its intelligent design tools, comprehensive parts database, and real-time integration of your 2D schematics and 3D models. The simple, intuitive design makes both electrical and mechanical engineers more productive, enabling increased collaboration and integrated Bills of Materials (BOMs) and project data. The results are fewer mistakes and complications, for faster time-to-market. The SolidWorks Electrical product line includes:

- **SolidWorks Electrical:** 2D dynamic electrical schematic creation
- **SolidWorks Electrical 3D:** Use your schematic data to model your electrical system in 3D (including cables and wires)
- **SolidWorks Electrical Professional:** SolidWorks Electrical and SolidWorks Electrical 3D combined for creating both electrical schematics and 3D models

## ► INTEGRATED ELECTRICAL SYSTEM DESIGN

**SolidWorks Electrical greatly simplifies 2D electrical schematic creation by providing an intuitive interface that gives you faster results. Bi-directional integration in real time with SolidWorks 3D CAD provides better collaboration and productivity, resulting in fewer product delays, more consistent and standardized designs, lower costs, and faster time-to-market.**

# SOLIDWORKS ELECTRICAL

## Energize your 2D electrical and control system design

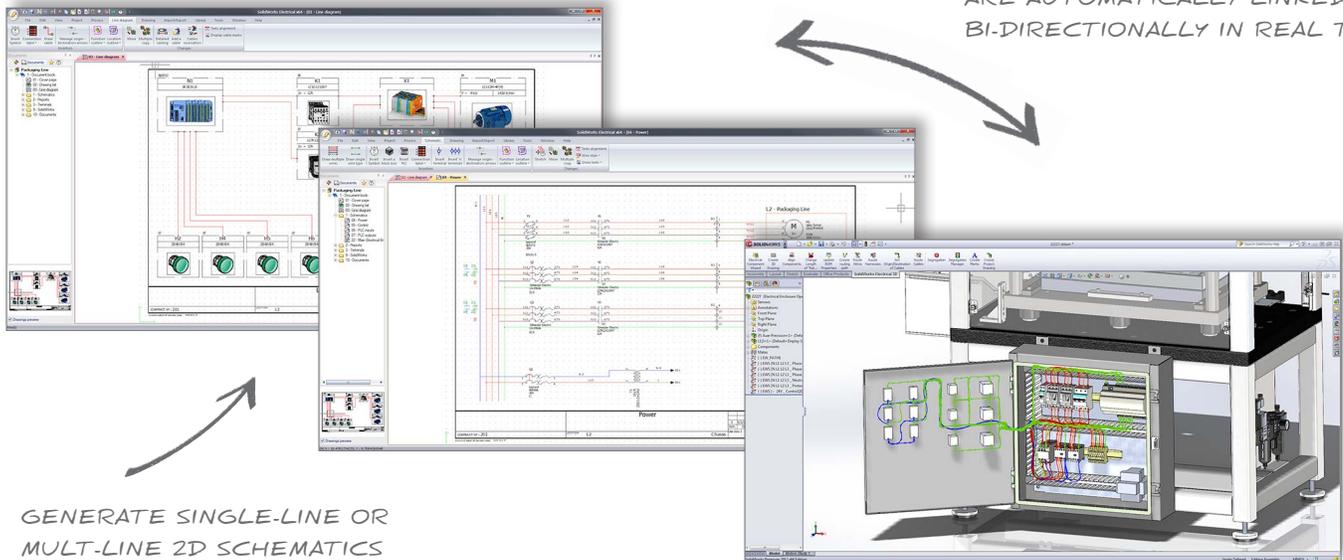
SolidWorks Electrical accelerates electrical system design with efficient schematic design capabilities that simplify your process. Multiple users can work together to generate complex single-line or multi-line schematics and automate wiring of PLCs and terminal strips. You can easily reuse portions of existing circuits in new designs to speed development and maintain consistency.

### Key features include:

- Comprehensive integrated library of nearly 500,000 standard electrical parts makes part selection easy and speeds schematic creation
- Integrated single-line and multi-line schematic planning tools
- Dynamic context-sensitive user interface provides only the commands that make sense based on where you are in the design process so you can focus on design
- SQL database architecture enables multiple users to work on projects concurrently
- Copy and paste circuits to reuse designs across projects
- Direct import of existing DWG™ and DXF™ symbols with existing attributes and connections

- 4,000+ symbols for use in electrical schematics and system layouts
- Circuit symbol creation wizard to easily prepare custom 2D schematic symbols
- Customizable symbol and macros palettes for the most frequently used symbols and saved circuits
- Fully automated generation of PLC schematic, terminal strip drawing, and support documents
- Generate DWG, DXF, and PDF documents for projects, with extensive archive capabilities
- Integration with SolidWorks Enterprise PDM to manage documents, generate reports, and create PDF and DWG exports (SolidWorks Enterprise PDM sold separately)
- Localization of product interface and documentation in seven languages
- Complete library managers for symbols, footprints, title blocks, macros, cables, and part references, including customizable ERP connectivity for standard parts

SolidWorks Electrical single-line and multi-line schematics integrate with SolidWorks 3D models to enable true concurrent electromechanical design.



SCHEMATIC AND 3D MODELS ARE AUTOMATICALLY LINKED BI-DIRECTIONALLY IN REAL TIME

GENERATE SINGLE-LINE OR MULT-LINE 2D SCHEMATICS WITH EASE

AUTOMATE WIRE AND CABLE ROUTING TO SAVE TIME

# SOLIDWORKS ELECTRICAL 3D

## Take your electrical schematics to the next dimension

SolidWorks Electrical 3D enables you to use your schematic data from SolidWorks Electrical with your overall mechanical design, opening up a new level of productivity. Concurrent design between electrical and mechanical teams can now be a reality—in real time. You can collaborate easily and naturally, optimize the overall product design, and streamline development.

### Key capabilities include:

- Real-time bi-directional updates between 2D and 3D synchronize electromechanical design so everything stays coordinated throughout development
- Integration of the 2D schematic with the 3D model helps standardize designs and unify your BOMs to reduce mistakes and delays
- Placement of the electrical system and cables/wires in your 3D model enables planning of specific locations and paths for consistent product manufacturing

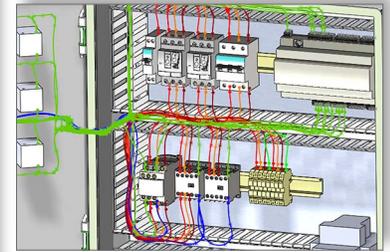
SHARE 2D SCHEMATIC PARTS LISTS AND CONNECTION INFORMATION IN REAL TIME TO SIMPLIFY IMPLEMENTATION

Origin	Destination	Wire number	Section	Length (inches)	Reference
#002	#104	001	15 (0mΩ)	36.00	
#001	#001	1	15 (0mΩ)	1.50	
#001	#001	1	15 (0mΩ)	1.54	
#001	#001	1	15 (0mΩ)	1.49	
#001	#001	1	15 (0mΩ)	1.50	
#003	#002	03	15 (0mΩ)	05.02	
#022	#104	5	15 (0mΩ)	0.00	
#155	#001	1	15 (0mΩ)	0.00	
#002	#006		15 (0mΩ)	0.00	
#002	#007		15 (0mΩ)	0.00	
#021	#001	1	15 (0mΩ)	0.00	
#001	#001	1	15 (0mΩ)	0.00	
#001	#001	03	15 (0mΩ)	0.00	
#001	#104	11	15 (0mΩ)	0.00	
				<b>440.26</b>	

Origin	Destination	Wire number	Section	Length (inches)	Reference
#104	#104	N-4	15 (0mΩ)	36.00	
#104	#104	N-4	15 (0mΩ)	0.00	
#104	#104	N-4	15 (0mΩ)	0.00	
#104	#104	N-4	15 (0mΩ)	0.00	
#104	#104	N-4	15 (0mΩ)	0.00	
				<b>36.00</b>	

List of wires



INCREASE COLLABORATION AND SYNCHRONIZATION BETWEEN ELECTRICAL AND MECHANICAL DESIGN

## THE BENEFITS OF INTEGRATING 2D ELECTRICAL WITH 3D MECHANICAL

### Eliminate Hidden Costs

Prevent mistakes and extra costs with your 3D model and schematic linked bi-directionally in real time, as well as a combined BOM for electrical and mechanical.

### Reduce Manufacturing Defects and Scrap

With items selected during schematic creation added to the 3D model, you can ensure fit, check for collision/clash, calculate lengths, plan for efficient material usage, and reduce scrap. Documentation is better and more consistent throughout development, reducing mistakes.

### Improve Time-to-Market

Coordinating electrical and mechanical functions enables teams to work in parallel to save time. Specific time-saving benefits include combining mechanical and electrical BOMs to streamline production planning and faster planning of cable/wire/harness paths using the 3D model.

### Ensure Consistent Manufacturing and Assembly

Including electrical information from the schematic in the 3D model enables detailed planning, documentation, and visualization of overall product design, helping to ensure consistent assembly from unit to unit.

### Streamline Development to Reduce Costs

Faster design, better communication between departments, synchronized plans, up-to-date documentation, and shorter time-to-market all add up to reduced costs throughout the product lifecycle.

"INTEGRATING ELECTRICAL AND CONTROL SYSTEMS INTO OUR MINING EQUIPMENT IS A CHALLENGE. SOLIDWORKS ELECTRICAL PRODUCTS TARGET OUR TYPE OF DESIGN TASKS."

— KYLE STRONG, PMP, Project Manager, Getman Corporation

## CHOOSE THE SOLIDWORKS ELECTRICAL PACKAGE THAT'S RIGHT FOR YOU

### SolidWorks Electrical

2D schematic creation for electrical and control systems for your projects. Includes:

- Unique intelligent schematic tool supports multi-user design
- Database of over 500,000 standard electrical parts
- Harness detailing tools
- Links to SolidWorks Enterprise PDM software (sold separately)

### SolidWorks Electrical 3D\*

Add SolidWorks Electrical schematic data to your 3D model. Includes:

- Access to electrical project data from 3D or 2D
- Automated electrical cable, harness, and wiring routing capability
- Wire and cable path tools including automated cable wire segregation
- Links to SolidWorks Enterprise PDM software (sold separately)

\*Requires SolidWorks CAD software (sold separately)

### SolidWorks Electrical Professional\*

Combine both 2D schematic creation and 3D electrical system modeling. Includes:

- SolidWorks Electrical and SolidWorks Electrical 3D in one convenient package
- Single installation and licensing step

\*Requires SolidWorks CAD software (sold separately)

## SOLIDWORKS PRODUCT DEVELOPMENT SOLUTIONS

SolidWorks software provides users with an intuitive 3D experience that maximizes the productivity of your design and engineering resources to create products better, faster, and more cost-effectively. See the full range of SolidWorks solutions for design, simulation, sustainable design, technical communication, and data management at [www.solidworks.com/products2013](http://www.solidworks.com/products2013).



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## ▶ SYSTEM REQUIREMENTS

- Windows® 7 (32- or 64-bit) or Windows Vista®
- 2 GB RAM (minimum)
- 5 GB disk space free (minimum)
- Video board (certified recommended)
- Intel® or AMD processor
- DVD or broadband Internet connection
- Internet Explorer 8 or later

For additional details, visit [www.solidworks.com/systemrequirements](http://www.solidworks.com/systemrequirements)

## ▶ LEARN MORE

To learn more about SolidWorks Electrical, visit [www.solidworks.com/electrical](http://www.solidworks.com/electrical) or contact your local authorized SolidWorks reseller.