

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

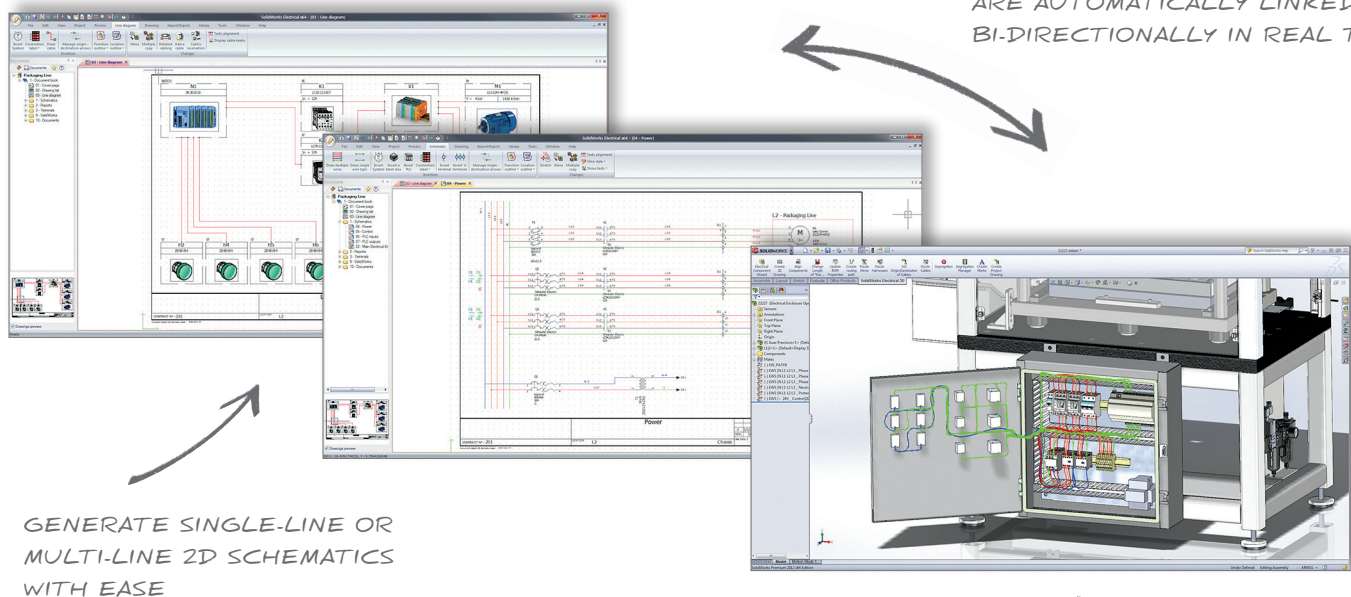
SolidWorks Electrical accelerates electrical system design with efficient schematic design capabilities that simplify your process. Multiple users can work together to generate complex single-line or multi-line schematics and automate wiring of PLCs and terminal strips. You can easily reuse portions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

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SolidWorks Electrical single-line and multi-line schematics integrate with SolidWorks 3D models to enable true concurrent electromechanical design.
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SCHEMATIC AND 3D MODELS
ARE AUTOMATICALLY LINKED
BI-DIRECTIONALLY IN REAL TIME

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

AUTOMATE WIRE AND CABLE
ROUTING TO SAVE TIME

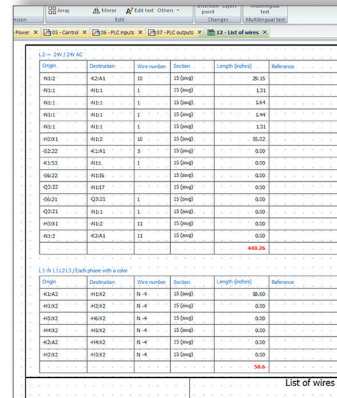
SOLIDWORKS ELECTRICAL 3D

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

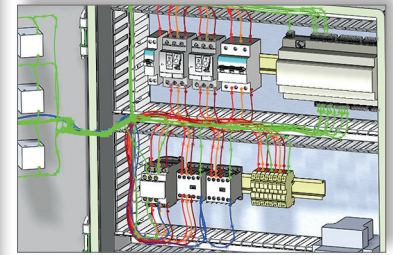


The screenshot displays a 'List of wires' table within the SolidWorks Electrical 3D interface. The table is organized into two sections: '1-2-3D (2D/3D)' and '1-4-5 (3D/2D) (Synchronization with 2D)'. Each section contains columns for 'Origin', 'Destination', 'Wire number', 'Section', 'Length (inches)', and 'Reference'. The first section lists various wires with their origins and destinations, such as R002 to R001, R001 to R001, R001 to R002, R002 to R002, R002 to R003, R003 to R002, R003 to R004, R004 to R003, R004 to R005, R005 to R004, R005 to R006, R006 to R005, R006 to R007, R007 to R006, R007 to R008, R008 to R007, R008 to R009, R009 to R008, R009 to R010, and R010 to R009. The second section lists wires with origins and destinations, such as R002 to R001, R001 to R001, R001 to R002, R002 to R002, R002 to R003, R003 to R002, R003 to R004, R004 to R003, R004 to R005, R005 to R004, R005 to R006, R006 to R005, R006 to R007, R007 to R006, R007 to R008, R008 to R007, R008 to R009, R009 to R008, R009 to R010, and R010 to R009. The table also includes a 'List of wires' label at the bottom right.

Origin	Destination	Wire number	Section	Length (inches)	Reference
R002	R001	01	15 (0m)	36.30	
R001	R001	1	15 (0m)	0.00	
R001	R002	1	15 (0m)	0.00	
R002	R002	2	15 (0m)	0.00	
R002	R003	3	15 (0m)	0.00	
R003	R002	3	15 (0m)	0.00	
R003	R004	4	15 (0m)	0.00	
R004	R003	4	15 (0m)	0.00	
R004	R005	5	15 (0m)	0.00	
R005	R004	5	15 (0m)	0.00	
R005	R006	6	15 (0m)	0.00	
R006	R005	6	15 (0m)	0.00	
R006	R007	7	15 (0m)	0.00	
R007	R006	7	15 (0m)	0.00	
R007	R008	8	15 (0m)	0.00	
R008	R007	8	15 (0m)	0.00	
R008	R009	9	15 (0m)	0.00	
R009	R008	9	15 (0m)	0.00	
R009	R010	10	15 (0m)	0.00	
R010	R009	10	15 (0m)	0.00	
				400.20	

Origin	Destination	Wire number	Section	Length (inches)	Reference
R002	R001	11-4	15 (0m)	36.30	
R001	R001	11-4	15 (0m)	0.00	
R001	R002	11-4	15 (0m)	0.00	
R002	R002	11-4	15 (0m)	0.00	
R002	R003	11-4	15 (0m)	0.00	
R003	R002	11-4	15 (0m)	0.00	
R003	R004	11-4	15 (0m)	0.00	
R004	R003	11-4	15 (0m)	0.00	
R004	R005	11-4	15 (0m)	0.00	
R005	R004	11-4	15 (0m)	0.00	
R005	R006	11-4	15 (0m)	0.00	
R006	R005	11-4	15 (0m)	0.00	
R006	R007	11-4	15 (0m)	0.00	
R007	R006	11-4	15 (0m)	0.00	
R007	R008	11-4	15 (0m)	0.00	
R008	R007	11-4	15 (0m)	0.00	
R008	R009	11-4	15 (0m)	0.00	
R009	R008	11-4	15 (0m)	0.00	
R009	R010	11-4	15 (0m)	0.00	
R010	R009	11-4	15 (0m)	0.00	
				36.30	

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



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.

► 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

► LEARN MORE

To learn more about SolidWorks Electrical, visit www.solidworks.com/electrical or contact your local authorized SolidWorks reseller.



Dassault Systèmes SolidWorks Corp.
175 Wyman Street
Waltham, MA 02451 USA
Phone: 1 800 693 9000
Outside the US: +1 781 810 5011
Email: info@solidworks.com

www.solidworks.com

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