PTC®

the product development company®

Creo™ Schematics

DESIGN COMPLEX SYSTEMS WITH CONFIDENCE

To succeed in today's markets, companies need to introduce products faster than the competition, at lower cost and with higher quality. Creo Schematics helps you achieve this goal by automating the cabling and piping systems detailed design processes—saving time, effort and money.
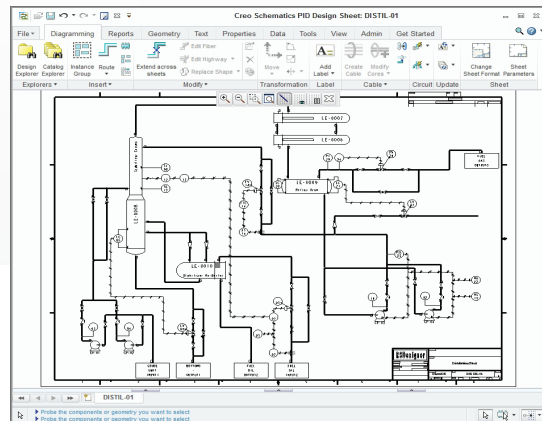
When designing products that contain cabling or piping, it is absolutely essential to create high-quality diagrams that document and plan the schematic requirements. Creo Schematics contains the rich breadth of diagramming tools to satisfy the needs of many disciplines and industries, without forcing designers to compromise.

As part of the design process, mechanical designers route cables and pipes within their 3D assembly using schematic designs as maps. Creo Schematics automates this step, extracting the schematic information and electronically driving the routed systems within any 3D MCAD system that accepts XML data. Creo Schematics is specifically optimized to utilize all the rich capabilities in cable and pipe routing within Creo. This compatibility not only speeds the 3D design by removing the tedious, manual process of interpreting 2D schematic diagrams, but it also virtually eliminates errors by ensuring adherence to the logic defined in the schematics.

Key Benefits

Reduce time-to-market

Creo Schematics provides the rich, multi-discipline tools design engineers need to create schematic designs quickly and easily. Creo Schematics then automates the routing of 3D cables and wires within Creo Parametric and Creo Elements/Direct™, and the routing of pipes within Creo Parametric. This eliminates the process of manually interpreting 2D schematics when creating a 3D digital prototype of harnesses and pipes.

Creo Schematics is a comprehensive 2D diagramming solution for multiple design disciplines.

Reduce total product cost

PTC offers a more comprehensive routed systems solution, consisting of Creo Schematics, Creo Parametric and the Creo Piping and Cabling Extension. This combination of tools enables the complete digital model to be defined, thus reducing the dependence on physical prototypes and significantly lowering product costs. Voltage margin analysis enables engineers to optimize the design for cost and weight, all within the same application. Indirect costs can be reduced as well. Since all diagramming tools are provided in a single solution rather than multiple solutions, users won't need to learn multiple software tools, further reducing training costs. Additionally, Creo Schematics reduces maintenance costs and downtime because there is only one solution to upgrade and learn.

Improve product quality

Creo Schematics enables the digital design to be completely defined, and its information to be transferred directly into Creo Parametric or Creo Elements/Direct™ to drive the 3D design. This eliminates the error-prone interpretation of 2D schematics by the mechanical engineer. Creo Parametric and Creo Elements/Direct can automatically check the completed 3D routed assembly for exact compliance with the 2D schematics, saving the engineer hours of manual, tedious checking, and eliminating mistakes before production— thereby resulting in improved product quality and greater confidence. In addition, simulation capabilities in Creo Schematics allow designers to optimize the design for electrical reliability.

Improve information exchange

Creating a single, comprehensive digital model makes the rich product information available to all teams. The combination of Creo Schematics with the cabling and piping applications within Creo enables routed systems teams to completely define all aspects of the design in a rich digital model, without the need for interpretation or translation. Creo Schematics drives the 3D routing via XML, *.ecad and *.con, which eliminates translation errors and automatically ensures compliance with the 2D schematic design.

Creo Schematics helps you create designs faster by enabling you to view and edit multiple objects.

The right tools

Schematic designers no longer need to rely on office tools that were never intended for schematic design. Nor do mechanical designers have to experience the frustration of interpreting 2D schematics, or manually checking the 3D routed systems for compliance. Creo Schematics, combined with the 3D piping and cabling applications in Creo, offers the 'no compromise' solution for the design of routed systems.

Built on proven technology

A rich diagramming solution built on proven technology, Creo Schematics combines the best functionality from PTC's proven incumbent diagramming solutions, leveraging experience from major aerospace and automotive customers. The result: rich diagramming technology and the connection to drive routed systems within 3D MCAD solutions.

Relocate and rotate objects faster and more easily with drag handles in Creo Schematics.

Features and Specifications

Diagram types

- P&ID

- Block

- Wiring

- HVAC

- Functional

- Schematic

- Hydraulic

- Pneumatic

Data exchange

- Supported export formats: CSV, CGM, DWG, DXF, Medusa, PDF, XML, ECAD and CON

- Supported import formats: CSV, CGM, DWG, DXF, Medusa and XML

- Support for legacy Pro/DIAGRAM™ data

Design manipulation

- Windows® Explorer-style interface

- Context-sensitive, right mouse button pop-ups

- Define any user property

- Fast navigation through multiple sheets

- Update catalogs

- Merge design sheets

Data management

- Managed by Pro/INTRALINK®, Windchill® PDMLink®, and Windchill ProjectLink™

Flexible catalog management

- Central catalog provides a single source for company design libraries

- Free symbol library includes ANSI, CSA and IEEE standards

Properties and parameters

- Parameters are fully user-definable and may be attached to: Folders, Sheet Sets, Sheets, Blocks, Fibers, Groups, Ports, Formats

- Parameters values may be defaulted in the catalog, modified upon instancing, updated by selection from a data set, edited from a multi-selection, or allocated automatically

- Graphical display of properties available on: Sheets, Formats, Blocks, Fibers, Groups, Ports

- Automated assignment of connector terminator information

- Import signal information from PCB applications

Display characteristics

- Any number of attributes

- Any sub-string of any attribute value

- Any fixed strings, delimiters

- True Type font support

- Any layer, color

- Customizable labels

Fast, configurable reporting

- Report types: Parameters, Inventory, Connection

- Reporting classes: Design, Catalogue, Block, Group, Fiber, Port

- Criteria:

  - Integer and real parameters

  - String parameters

  - List parameters

  - Sheet parameters

  - Type parameters

- Report destination: Sheet, Dialog Box, File

- Java Read API
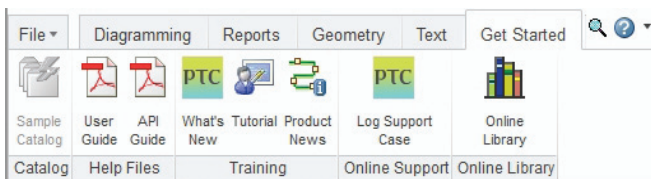
Creo Schematics helps you get up to speed quickly with easy access to tutorials, and online symbol catalogs, and quick links to PTC.com and support resources.

Electrical simulation

- RSDSimulate Lite for analyzing various current and voltage properties between components – (not available with Creo Schematics Lite*)

*Free download at PTC.com/support

Tutorials

- Free tutorials are included to help new users get up to speed quickly with Creo Schematics.

- Free electrical simulation tutorials for new users of RSDSimulate Lite

Language support

- English, German, French, Japanese and Simplified Chinese

Platform requirements

- Microsoft® Windows 7 and XP (32- and 64-bit)

- Please see PTC.com for specific operating system requirements

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

For more information, visit: PTC.com/products/creo/simulate