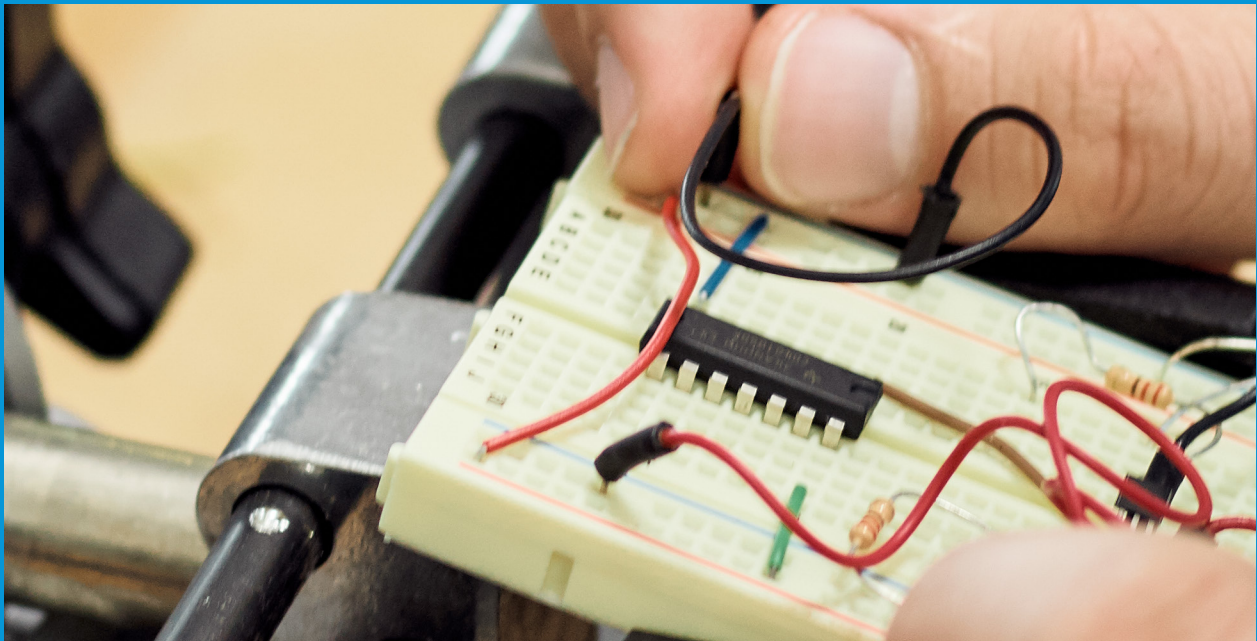


The Benefits of Using the Electrical Toolset in AutoCAD

A productivity study detailing the differences between AutoCAD® and the Electrical toolset



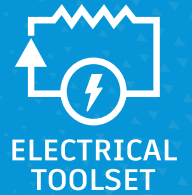
Built specifically to create and modify electrical control designs, the Electrical toolset (previously referred to as AutoCAD Electrical) is now included as part of the AutoCAD including specialized toolsets offering. Purpose-built electrical design tools that help eliminate errors and provide accurate information to manufacturing allow more time for design and engineering. This study details the productivity gains that users may experience when using AutoCAD with the Electrical toolset rather than just basic AutoCAD.*



PRODUCTIVITY STUDY HIGHLIGHTS

Benefits of the Electrical Toolset

The Electrical toolset brings dramatically increased productivity and significant time savings to common electrical design tasks in AutoCAD®

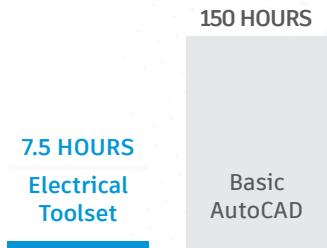


STUDY SUMMARY

Autodesk commissioned a study that compared basic AutoCAD to the Electrical toolset when performing tasks commonly used by electrical engineers.

Results showed that the Electrical toolset provided up to **95% overall productivity gain*** compared with basic AutoCAD, when these tasks were performed by an experienced AutoCAD user.

95% Overall Productivity Gain*



HOW THE ELECTRICAL TOOLSET SAVES TIME:

- 1. Comprehensive symbol libraries**
(Time savings with the Electrical toolset up to **85%**)
Simple icon-menu-driven system includes over 2,000 standards-based schematic symbols. Smart schematic symbols align with the wires in the schematic drawing and renumber where applicable.
- 2. Automatic wire numbering and component tagging**
(Time savings with the Electrical toolset up to **82%**)
Places sequential or reference-based numbers on wires and components based on the chosen configuration. Unique component tags/IDs are automatically generated.
- 3. Real-time error checking**
(Time savings with the Electrical toolset up to **83%**)
Helps avoid costly errors during the design process. Requested changes are compared with the current project.
- 4. Real-time coil and contact cross-referencing**
(Time savings with the Electrical toolset up to **77%**)
Sets up parent/child relations between electrical component symbols, even for different project drawings.
- 5. Electrical-specific drafting features**
(Time savings with the Electrical toolset up to **63%**)
Many commands specifically designed for electrical schematic drawings are provided, greatly increasing efficiency.
- 6. Automatically create PLC I/O drawings from spreadsheets**
(Time savings with the Electrical toolset up to **99%**)
Create PLC I/O drawings quickly from spreadsheets using the PLC I/O utility.
- 7. Create smart panel layout drawings**
(Time savings with the Electrical toolset up to **61%**)
Create physical footprint representations of panel layouts in project drawings linked to schematic component symbols.
- 8. Automatic project reports**
(Time savings with the Electrical toolset up to **97%**)
Automatically generate comprehensive project reports including components, wires, Bill of Materials, etc.
- 9. Share and track drawing changes**
(Time savings with the Electrical toolset up to **86%**)
Share project drawings with basic AutoCAD and AutoCAD LT. Changes made outside of the Electrical toolset are easily tracked and reported.
- 10. Reuse existing drawings**
(Time savings with the Electrical toolset up to **81%**)
Import external drawings using the Update/Retag tool. Reduce time spent renaming DWG project files.

*As with all performance tests, results may vary based on machine, operating system, filters, and even source material. While every effort has been made to make the tests as fair and objective as possible, your results may differ. Product information and specifications are subject to change without notice. Autodesk provides this information "as is", without warranty of any kind, either express or implied.

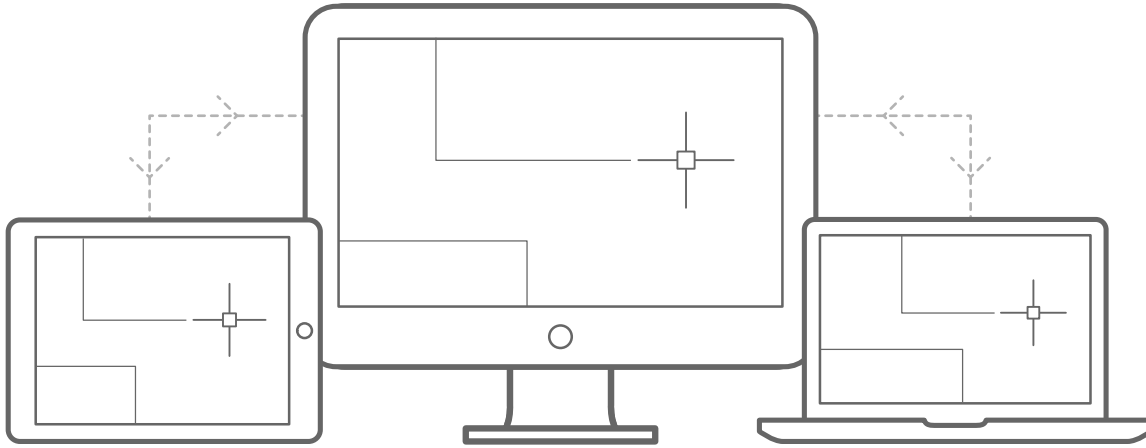
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AutoCAD includes access to all AutoCAD vertical industry functionality as specialized toolsets. Take your work with you with the AutoCAD mobile app and the AutoCAD web app.

A AUTODESK® AUTOCAD® 2022

CAD software to design anything – with time-saving specialized toolsets and AutoCAD web and mobile apps



AutoCAD mobile app

View and edit your latest drawings in the field and on the go with a smartphone or tablet.

AutoCAD

Design in 2D and 3D across AutoCAD and seven specialized toolsets.

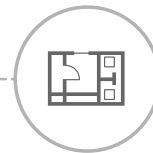
AutoCAD web app

View and edit drawings in a web browser on virtually any computer. No install required.



Mechanical

700,000+ intelligent manufacturing parts. Automate creation of bills of material.



Architecture

8,000+ intelligent architectural objects. Automate floor plans and elevations.



Electrical

65,000+ intelligent electrical symbols for electrical controls systems.



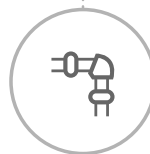
Map 3D

Incorporate GIS and CAD data to support planning, design, and data management.



MEP

10,500+ intelligent mechanical, electrical, and plumbing objects.



Plant 3D

Produce P&IDs and integrate into a 3D plant design model.



Raster Design

Edit scanned drawings and convert raster images into DWG objects.