Software for design of automation projects.

Elecworks™ is a powerful new generation software tool, that enables electrical designers and automation experts to create automation and electrical installation projects. Through Windows standard interfaces, engineers can produce better installation designs and supporting documentation faster.

Elecworks™ allows project data to be entered right from the preliminary research stages. A huge part of the project planning can be achieved even before completing fully-fledged schematic diagrams, thanks to the processing tools like Cable Synoptic or Components Management.

Elecworks™ has been originally developed to do electrical CAD, it is dedicated to the design engineers professional use. So, to create schematic diagrams you use electrical lines and the symbols, when inserted or deleted, ensure the continuity of the lines. The I/O table is dynamically linked to the project equipments.

There is no learning curve, using Elecworks™ is straightforward. You just drag and drop or use the smart tools designed to automate the schematic generation process. Smart Help and contextual menus will help the user whatever the command. Elecworks™ allows users to create not only small projects but also lets an entire team to collaborate on large scale projects.

A highly innovative and much-appreciated feature : the Cable Synoptic

The Single-Line Diagram (SLD) is a unique tool to Elecworks™ which enables users to draw a preliminary project very quickly in order to:
- Synthesize in a simple way all information on the installation or machine
- Present a professional overview to potential customers and bid for a project
- Give an overview of cable and equipment needed.

Even at an early stage before any detailed schematics, designers can get an insight of the project cost and requirements and plan accordingly; from the start of the project, users can define the connection between each device as a first draft and define both the cables and the number of strands. This data can be employed for costing prior to scheme development. All information applied in the SLD is automatically linked to the detailed scheme’s.

The technology

Elecworks™ is the result of an unprecedented technological development. The graphical part is stored in a native DWG compatible format that enables data exchange between different software in the market. The database is SQL Server, the configuration data are in XML format, the application is 100% Unicode.
The user interface
With the rich experience of 20 years in the field of electrical and mechanical CAD/CAE, Trace Software has created an exceptionally innovative product, bringing all new, faster and more reliable working methods. ElecWorks™ is completely inspired by Windows standards and has multi-level UNDO/REDO available for all functionalities. The product has contextual menus and a ribbon interface that enables the user to access commands in a naturally easy way.

2D schematic
ElecWorks™ Core, functions as a stand-alone solution. ElecWorks™, is an easy to use electrical CAD software, contains all the features needed to design an installation. Users have at their disposal tools to draw schematic diagrams, wiring diagrams, manage terminals and PLCs, edit BOMs, search for symbols in the library or for manufacturer parts, copy or translate project data, share drawings in a native DWG format, export data to Excel or incorporate any type of document into the project.

ElecWorks™ allows multiple users to work simultaneously on a project with any changes being reflected in real-time. Many tasks are automated to maximize productivity: single-line and multi-wire drawing integration, automatic generation of terminal sheets, numbering and cross references updated in real time, 2D panel layout, intelligent copy/paste of drawings or projects, and wizards for creating customized components, etc. ElecWorks™ Core includes the commands and parameters that allow you to utilize existing legacy data such as catalogs, and libraries as well as complete projects in DWG / DXF format.

The interfaces have been carefully designed to make ElecWorks™ easy and enjoyable to use, with intuitive tools, direct controls (multi-selection menus, shortcuts, macros) and smooth project navigation. With an interface in multiple languages, ElecWorks™ is also able to translate project data into any language, and has internationally recognized symbols standards to meet global project requirements. Its flexibility and performances make it an ideal design tool for any type of project.

An extensive component library
Through our partnership with TraceParts, a world leader in 3D modeling of components for engineering, users can download any ElecWorks™ components they need, either directly or through their software, and have free access to a database of hundreds of catalogs and millions of components. ElecWorks™ built-in libraries contains nearly 500,000 electrical parts and over 2,500 electrical symbols to cover all designing needs (pneumatic, hydraulic, electronics, air-conditioning, SFC, flowchart...). Selected component models can be added to the ElecWorks™ library for use in the future. With just the manufacturer name and part number, the user can then insert the component into an ElecWorks™ project.
Elecoworks™ easy upgrade

Elecoworks™ can easily upgrade to 3D design: 100% compatible with SolidWorks Electrical 3D

In 2012 through a partnership signed with Trace Software International, DS SolidWorks Corp. acquired Elecoworks™ 3D features to market them under the SolidWorks brand as SolidWorks Electrical. This 3D electrical design is developed by Trace Software International and sold exclusively by DS SolidWorks Corp.

This technological partnership ensures that Elecoworks™ users an easy and permanent upgrade towards an integrated electromechanical 3D design process: Elecoworks™ is totally compatible with SolidWorks Electrical 3D, which complements Elecoworks seamlessly.

2D design may be a starting point. As requirements may evolve, a link may be needed to facilitate coordination and exchange with the SolidWorks-equipped mechanical team.

Elecoworks™ 2D secures the initial investment by making easy this cost-effective upgrade to 3D design. Changes made in Elecoworks™ are automatically updated in real-time within SolidWorks Electrical 3D and vice-versa.

SolidWorks Electrical 3D brings also additional cutting-edge features:

- Visualization in 3D and realistic representation of the end product.
- Use of 3D components with electrical capabilities for an automated wiring.
- Automatic routing and wiring with wire length optimization.
- Automatic wire length calculation.

Trace Software is a well-established global software development company with 25 years of expertise in electrical calculation and 2D-3D electrical design solutions. Recognized as an electrical expert by world leading software publishers, Trace Software in 2012 has signed a partnership agreement with Dassault Systèmes ensuring the sustainability of our solutions.

This Elecoworks™/SolidWorks partnership provides for enhanced quality assurance, regular updates, product compatibility and constant cutting-edge innovations. Trace Software also provides outstanding services to its partners and worldwide customers offering online tutorials, technical webinars, content portal, ticket-based web support, etc.

The Trace Software Research and Development team is chartered to create complete electrical solutions to meet all requirements. These solutions are designed so to facilitate a complementary data exchange such as the link between Elecoworks™ and Elec Calc. Created to enhance productivity, an Elec Calc module combined with Elecoworks™ enables users to size their electrical installations and to export their project data to the schematic for automatic inclusion in the multi-line diagram.

Spurred by Dassault Systèmes ongoing commitment, Trace Software is targeted to deliver consistent high quality solutions which enable people to design better controls.

Elecoworks™ compatibility

Version compatibility between Elecoworks™ 2D and SolidWorks Electrical 3D is guaranteed permanently. New versions are released jointly. As project data are formatted in the same way, data exchange between Elecoworks™ 2D and SolidWorks Electrical 3D is immediate and simply needs setting up. In the same way, an Elecoworks™ 2D user can share all project data with a SolidWorks Electrical user with no prior data conversion needed.

To upgrade your Elecoworks™ 2D to 3D design with SolidWorks Electrical 3D, please visit www.solidworks.com and get contact detail on your nearest SolidWorks reseller.
PLCs management and dynamic insertion
The PLC management feature automates the creation of PLCs and the optimization of equipment according to your needs. PLC loop drawings can be generated automatically. Depending on the number of I/Os required, the user can select the required PLC manufacturer part and elecworks™ will associate the card addresses to predefined I/Os.

The generation of the controller card with I/Os is independent of an associated manufacturer part. By using macros, the user can instantly generate those parts of the schemes directly related to the PLC addresses.

In addition to the automatic generation of PLC drawings, you can use dynamic card insertion. This provides great PLC design flexibility. Users can choose to represent any card either fully or partially by selecting the channels required. Users can dynamically select addresses, represent the cards horizontally or vertically, add personalized descriptions and make changes that will be reflected on the PLC card drawings, etc.

Panel design in 2D layout
Elecworks™ can check the size of your installation in 2D. This allows users to precisely position rails, ducts, devices, etc.

The 3D implementation also takes into account the device depth. This feature is available through needs to be SolidWorks Electrical that includes automatic routing of cables and wires, length calculations, fill factors etc.

Link PDM and ERP
The elecworks™ PDM link enables integration of electrical project data within PDM systems. Designed to work with generic links PDM / PLM, customization is also available for advanced integration into EPDM systems. The elecworks™ PDM link enables EPDM to control data access, manage revision control and maintain a complete document set via automated options.

Elecworks Onboard for embedded systems
Elecworks Onboard is a new complete package dedicated to the aerospace, automotive, rail and shipbuilding industries to enable easy generation of embedded system design. Elecworks Onboard is designed for system suppliers to generate intelligent ESSSD’s. Elecworks Onboard comes with a user-friendly management interface, through which can be defined everything from your companies preferred standards for drawings naming conventions, to the field prompts suppliers need to populate.

Intelligent symbols libraries can be provided to exact company standards, or developed by the users during the design process. Libraries include intelligent item lists, LRU’s (Line Replaceable Unit), connector pins...To which can be assigned up to almost a million component parts. Intelligent signals have 17 attributes available that can be customized to match your company needs, such as:

- Segregation code/Separation code
- Signal Description
- Signal Note
- Colour
- Voltage
- Voltage Type
- Wire type/Cable code
- Gauge
- Option
- Minimum/Maximum length
- Signal Group
- Phase
- Two unique identifiers one for the network and another for the individual signals that compose it

Each company has different requirements and the attributes prompts and usage is flexible in order accommodate individual requirements. Extracts are automatically generated from the native drawings files in the ESSD at the push of a button. The number of extracts, their content, and file type can be defined by the company in order to ensure they interface seamlessly with your harness/loom CAE system.

Further customization is available on request, including fully configured program packaged in a unique installation for your company.