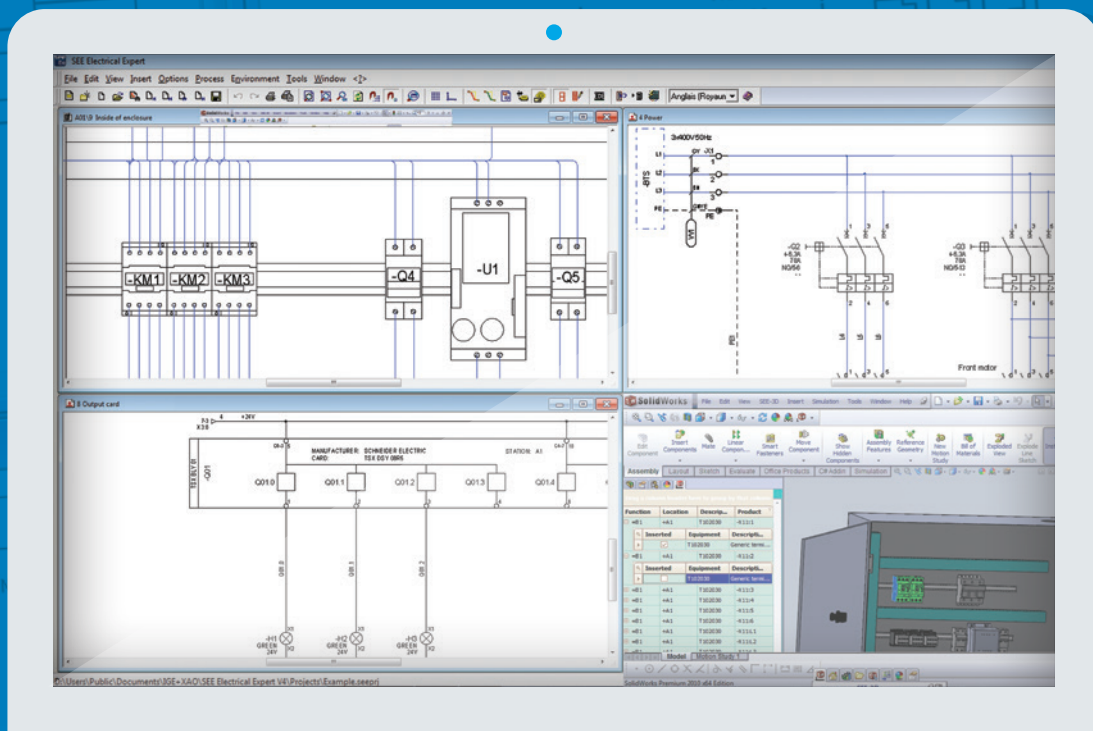


➔ SEE Electrical Expert



“ All the Power of Electrical CAD dedicated to Industrial Automation and Electrical Harnesses ”



www.ige-xao.com

More than 83,000 people worldwide use an IGE+XAO software package

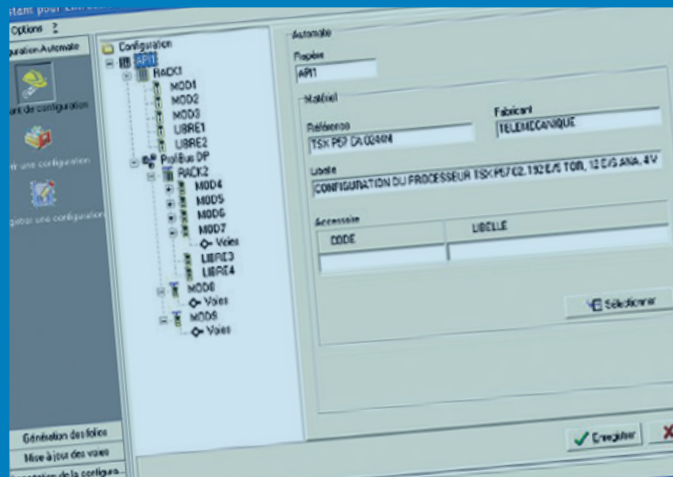
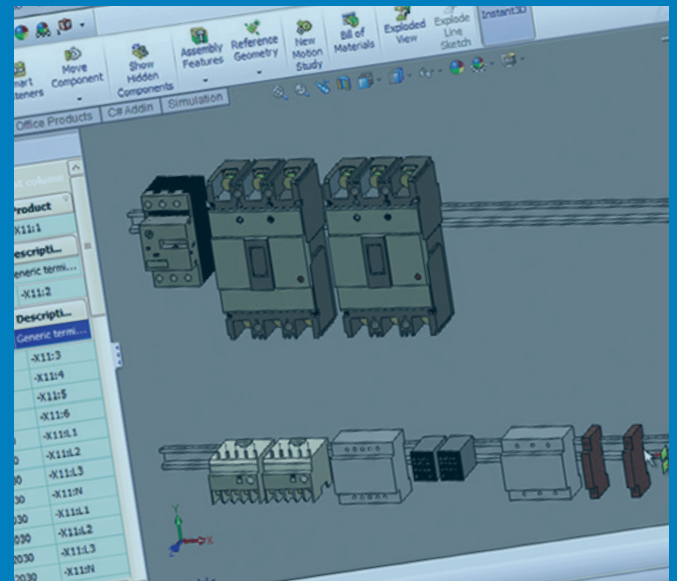
➔ SEE Electrical Expert

Thanks to IGE+XAO's 29 years of experience, SEE Electrical Expert is a reference in the world of electrical design.

Innovation

An opening to innovation with the following modules:

- «Concurrent Engineering»: all the power of collaborative work in one single module;
- «3D Panel»: 3D installation design integrated to the IGE+XAO world;
- «Harness Documentation» for designing 2D harnesses and routing the wires and cables in accordance with the schematics with maximum reliability;
- «Synoptic»: automatically generates all the terminal strips and cable diagrams and updates the schematics;
- «Open Data»: change optimization;
- «Options & Variants»: design standardization (project numbering as well as change time reduction);
- «Automatic Diagram Generation», «SEE Generative View» and «SEE Compodata»: innovative solutions for automatic generation of electrical projects.



Communication

- Several communication gateways with other software packages:
 - mechanical CAD (Catia, SolidWorks, Creo, NX, Inventor AutoCAD, etc.);
 - PDM (SmarTeam, Windchill, TeamCenter, SolidWorks ePDM,...);
 - ERP (SAP,...);
 - professional software (PLC programming, labelling, panel manufacturing, cable cutting, documentation, archiving, cost calculation, etc.);
- Schematics export in a PDF document that contains bookmarks and interactive hyperlinks on cross references. Redlining made on the PDF document can be imported back in the original project so that modifications can be made;
- 100% unicode environment.

Efficiency

A complete environment for an immediately operational business package:

- more than 1,000 electrical standardized symbols (IEC, IEEE, etc.);
- many design templates built in (motor starters with corresponding control part, drives, PLC cards, etc.);
- updated and online electrical equipment catalogue (SEE Web Catalogue) with more than 700,000 parts (ABB, Legrand, Eaton - Moeller Electric, Phoenix Contact, Rockwell Automation - Allen Bradley, Schneider Electric, Siemens, Socomec, Wago, Weidmüller, etc.);
- hundreds of working methods already available (symbol tagging, wire numbering formats, terminal strip layouts, connectors, cables, management of interconnections, part list templates, terminal and cable lists, XLS and XML export formats...).

SEE Electrical Expert basic packages

SEE Electrical Expert is available in 2 different packages which include all the basic functions for the creation and the modification of electrical diagrams.

➡ Control package

Dedicated to industrial installations and automation:

- component, connection, equipotential and wire tagging;
- real-time cross-referencing management;
- component choice according to logical constraints (number of used and available contacts).

➡ Harness Package

(«Part List» module included)

Dedicated to embedded systems cabling:

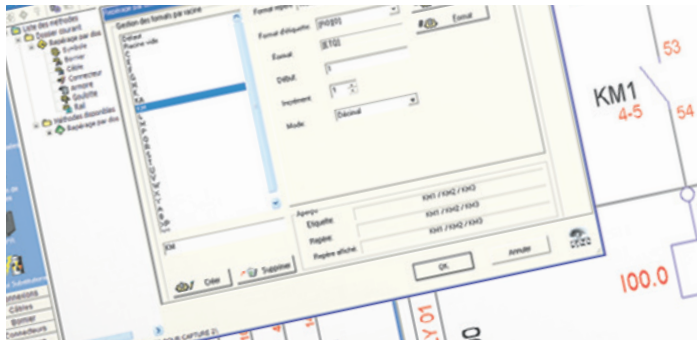
- management of signals, wires, cables, shielding, connectors...
- wire lists, parts lists, cable lists generation.

The additional SEE ELECTRICAL EXPERT modules

➡ Cabling

Terminals:

- terminal strip management;
- automatic terminal and terminal strip tagging;
- management of different types of terminal (disconnect, fuses, diodes, stepped, etc.);
- cable selection assistance (types, wire numbers, colours,...);
- terminal sheet automatic generation;
- cables and interconnection automatic generation;
- navigation between schematic and terminal strip diagrams.



Synoptic:

(includes the features of the «Terminals» module)

- installation synoptic design (localization, cable and terminal strip graphical management; navigation);
- terminal automatic creation and cabling;
- automatic terminal and cable insertion in the schematics;
- multi-connection terminals;
- automatic bridge and neutral management;
- connector management*;
- between enclosures cabling list import;
- automatic management of cable lists;
- creation and automatic insertion of symbols on the connections*;
- graphical cabling list*;
- assistance with the cabling of complex installation*.

**These features are also included in Harness Package*

Harness Documentation:

- logical and physical (2D) electrical harnesses design;
- positioning of accessories;
- automatic routing of cables and wires into the harness according to the schematics;
- automatic calculation of harness wire and cable lengths and branch diameters.

➡ PLC Management

PLC:

- management of PLC configurations;
- networks and field buses management (remote input/output);
- automatic generation of racks and input/output cards schematics;

- import/export of input/output lists;
- input/output card updating.

➡ Cabinet Layout

Panel:

- 2D equipment placement;
- associative dimensioning;
- rail and wireway management;
- enclosure selection assistance;
- navigation between panel layout and schematic diagrams.

3D Panel:

- schematic and 3D panel design integration;
- fast 3D placement of all equipment;
- automatic snap-to-rail feature;
- collision detection;
- consistency check with the schematic diagram;
- import/export support for DWG/DXF, IGES, STEP and STL.

➡ Data Management

Part List:

- automatic generation of bill of material and wire list;
- multi-criteria sorting and filtering;
- user defined page layouts (multiple templates available);

Environment Manager:

- bidirectional environment synchronization;
- «local environment» update according to «reference environment» (stored on server);
- manual or automatic environment update;
- extractions (symbols, part numbers... added or modified in the local environment) can be sent to environment administrator for validation and implementation on the server «reference environment».

Part List Manager:

(Includes the features of the «Parts List» module)

- MS SQL Server equipment database;
- part list management (evolution between 2 revisions);
- equipment list importing (pre-part list);
- advanced research tools in the equipment catalogue (for SEE Web Catalogue service subscribers).

Options & Variants:

- multiple configuration management in a unique folder;
- hierarchical options/variants;
- validity tagging for symbol connections or connection points (validity defined as a Boolean expression);
- schematics and data export filtering.

➔ Manufacturing

Panel Manufacturing:

(includes the features of the «Panels» module)

- wire routing in the 2D cabinet layout;
- wire length calculation;
- wireway filling rate calculation;
- automatic cabling wire list;
- drilling layout generation.

3D Panel Manufacturing:

(Includes the features of the «3D Panel» module)

- advanced wire routing features;
- optimal wire lengths calculated;
- manufacturing reports to support drilling plans and wire cut lists;
- direct output for CNC tools.

Cabinet Thermal Calculation:

- allows for checking the heat properties of cabinets;
- calculates the power dissipation of all equipment;
- calculates the ventilation or cooling required to balance temperature increases.

Harness Manufacturing:

(includes the features of the «Harness Documentation» module)

- harness drawing to scale to insert them in production tables (formboard/jigboard);
- control of the binding radius of the branches;
- formboard table splitting in different areas;
- wire grid insertion at the harness extremities;
- branch diameter display.

End Fitting:

- definition of equipment associated to wire end fittings.

➔ Exchange and Communication

Concurrent Engineering:

- simultaneous work of several users on the same project;
- conflict management (simultaneous access to data);
- modifications made by other users are instantly seen;
- online discussions (chat) tools.

Translation:

- multi-lingual project management;
- project translation in different languages.

DXF / DWG:

- DXF format (AutoCAD) and DWG Import/Export.

Open Data:

- data export for quick and easy editing of project data with Excel or any other application;
- data imported back with consistency control.

PDM Connect:

- electrical data export for integration in PDM or ERP tools (Teamcenter-Siemens, Windchill-PTC, SAP...).

SmarTeam Integration:

- projects and associated documents storing and management into Enovia SmarTeam PDM;
- project management from SEE Electrical Expert and/or Enovia SmarTeam.

SolidWorks ePDM Interface:

- project and attribute storing and synchronization in SolidWorks Enterprise PDM.

Interfaces CATIA, SolidWorks, Creo, NX, Inventor:

- equipment and cabling list export.

Data Extractor:

- XML, XLS format customized data export.

➔ Additional services

SEE Web Catalogue:

- online equipment catalogue with more than 700,000 equipment codes, 900 manufacturers and 20,000 specific equipment symbols.

SEE Parts Libraries:

- on demand specific equipment creation service.

➔ Additional packages

SEE Viewer and SEE Viewer Premium:

- documents viewing and printing.

SEE Generative View and Automatic Diagram

Generation:

- electrical project automatic creation.

SEE Project Manager and SEE Project Manager LT:

- document management.