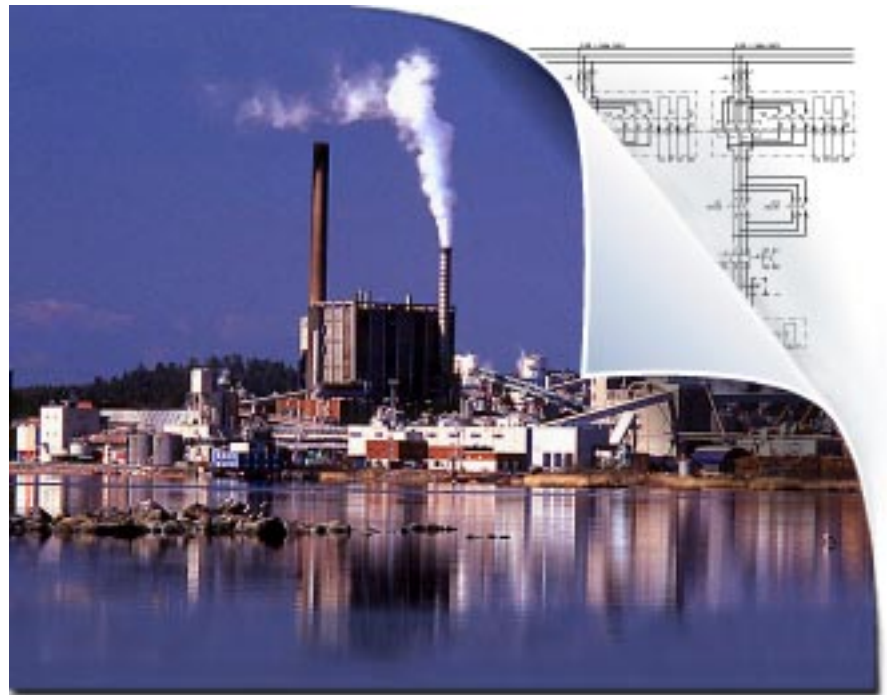


Advant[®] OCS

Open Control System

Computer Aided Electrical Engineering



makes you a more productive electrical engineer

ABB

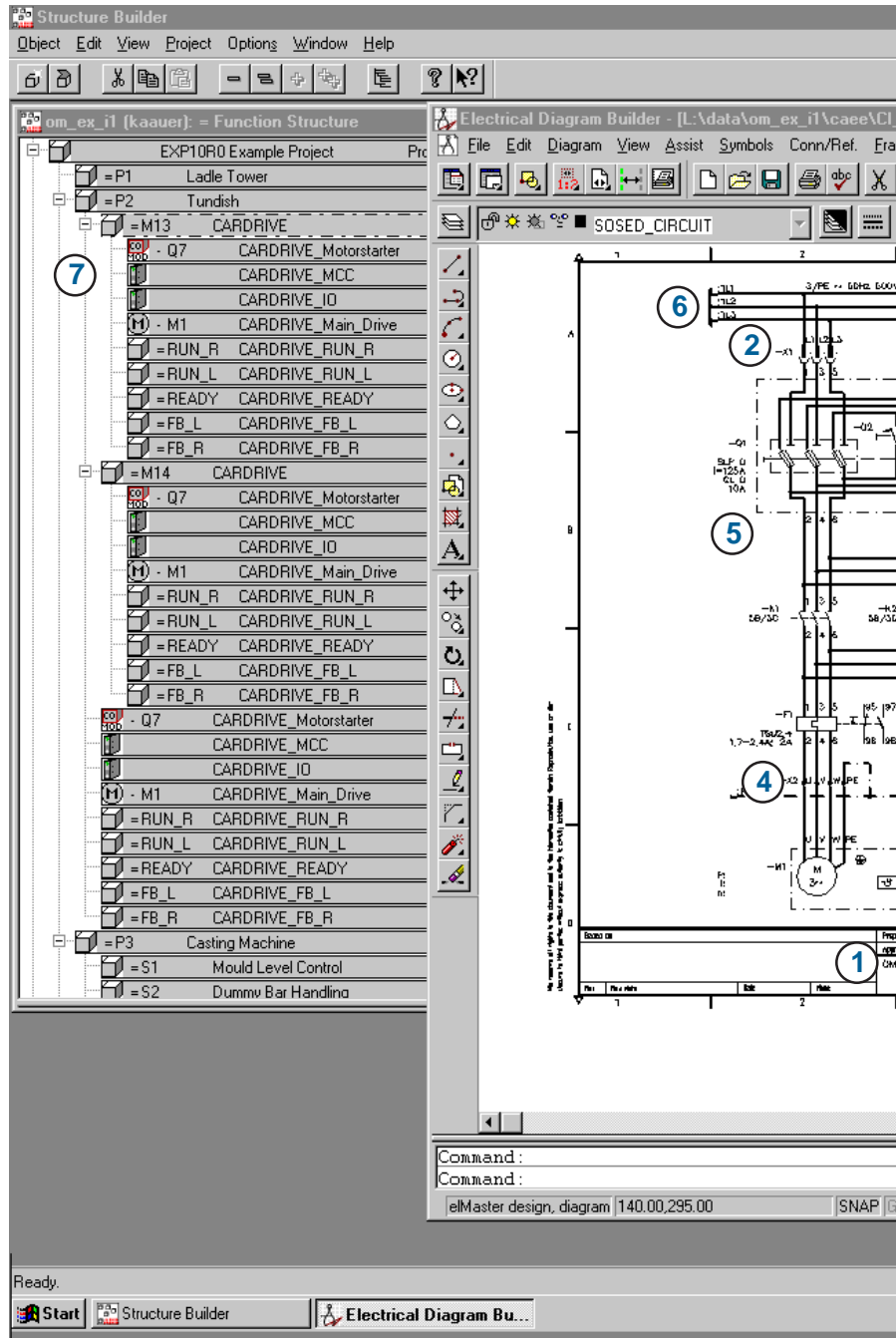
Boost your efficiency with the Electrical Diagram Builder

The Electrical Diagram Builder is a tool in the Advant Engineering Software family for Computer Aided Electrical Engineering (CAEE). It helps you produce electrical diagrams such as circuit diagrams, layout drawings and connection schedules with an ease you probably did not think possible. In fact, when installed on Advant Engineering Workplace, a large number of diagrams, drawings and reports can be created or updated automatically. This is possible thanks to Advant Objects and the extensive re-use capabilities they provide. For a closer look at Advant Objects, see the pamphlet on Advant Engineering Workplace.

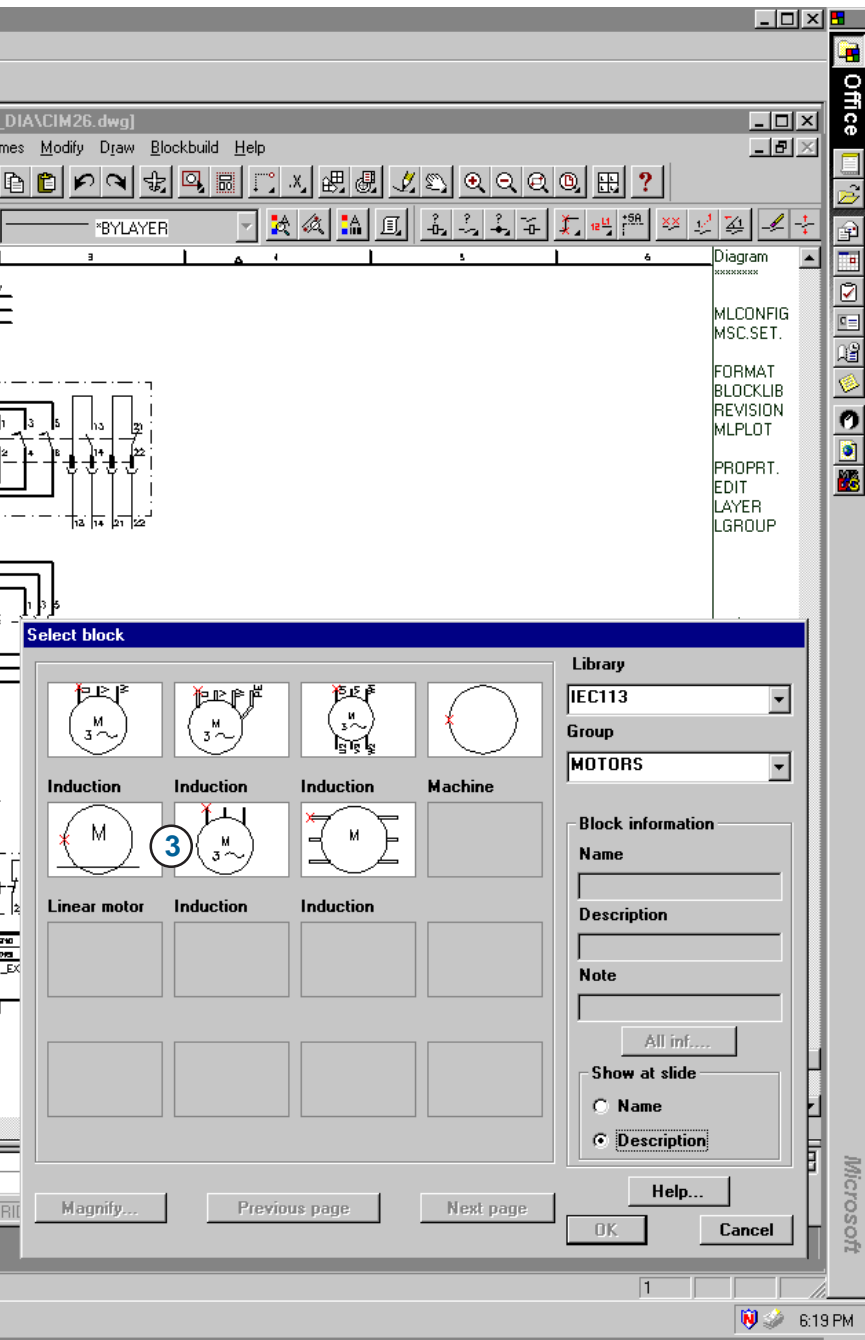
The Electrical Diagram Builder is based on Advant Engineering Workplace and AutoCAD®, the undisputed leader in 2-D CAD, to which a database and electrical design support functionality have been added. These additions elevate electrical engineering to new levels of efficiency and handling ease.

Consequently, in the Electrical Diagram Builder you can:

- 1 select a suitable drawing format from the template library and watch the drawing header get filled in automatically,
- 2 draw multiple connection lines in parallel and automatically connect them at intersection points,
- 3 choose symbols from the symbol library, put them on your connection lines and watch them get connected automatically,
- 4 number connection terminals automatically,
- 5 draw boundary frames around equipment and label them with functional or locational references for easy identification and cross-referencing,
- 6 manage all cross references on diagrams and between diagrams automatically,
- 7 reference plant items (Advant Objects) in the project database, and watch the drawing become updated with supplementary information automatically.



The Electrical Diagram Builder is loaded with power features that speed up and improve the quality of your engineering work, e.g. automatic connection of symbols and automatic terminal numbering.



More than a mere graphics editor

The Electrical Diagram Builder is far more than a drawing tool, it is also a database editing tool. So from it you can:

- ✓ *enter, view and edit plant item (Advant Object) data*
making it easy to add to the body of engineering data as/when the need arises,
- ✓ *copy engineering data within or between projects in bulk*
an effective way of getting a maximum of engineering work done in a minimum of time,
- ✓ *easily find the engineering data you are looking for*
by means of powerful sort, filter and search functions.
- ✓ *manage and edit your article database*
making it possible to standardize on a set of electrical equipment and then recover data from this database automatically where- and whenever needed in subsequent engineering documents,
- ✓ *create and print reports*
an easy way of printing up-to-date documentation such as parts lists for your project,
- ✓ *manage document versions*
thus creating order among successive versions of the same reports or diagrams,
- ✓ *manage and edit your symbol library*
i.e. import symbols or symbol libraries from other CAEE installation, edit symbols, and export symbols or symbol libraries to other CAEE installations.

Since the Electrical Diagram Builder can act as an aspect of Advant Objects, the relevant parts of the above information are also available for viewing/editing from within the project structure of Advant Engineering Workplace. This simplifies data access and saves valuable project engineering time.



Get it done faster with the Electrical Diagram Builder

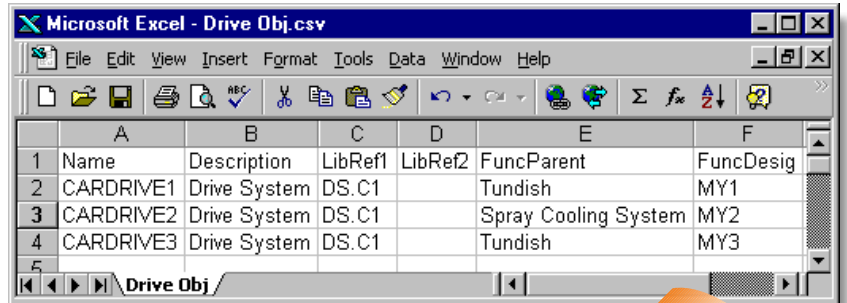
Interoperable with Advant Engineering Workplace

The Electrical Diagram Builder can interact with Advant Engineering Workplace, making it possible to create, copy, delete, open and print electrical diagrams and electrical equipment data by selecting the corresponding plant item (Advant Object) in the project structure. This integration strengthens the overall engineering concept that Advant Engineering Workplace represents and contributes strongly to higher productivity.

Efficient bulk data processing

Advant Engineering Workplace can be equipped with a library of diagram and drawing templates that only require project-specific parameter values to become finished engineering documents. So the quickest way to create ready-to-use, diagrams and drawings is to import textual parameter lists, created in previous engineering phases specifying target objects, drawing templates and parameter values. This capability improves overall engineering efficiency and increases data quality.

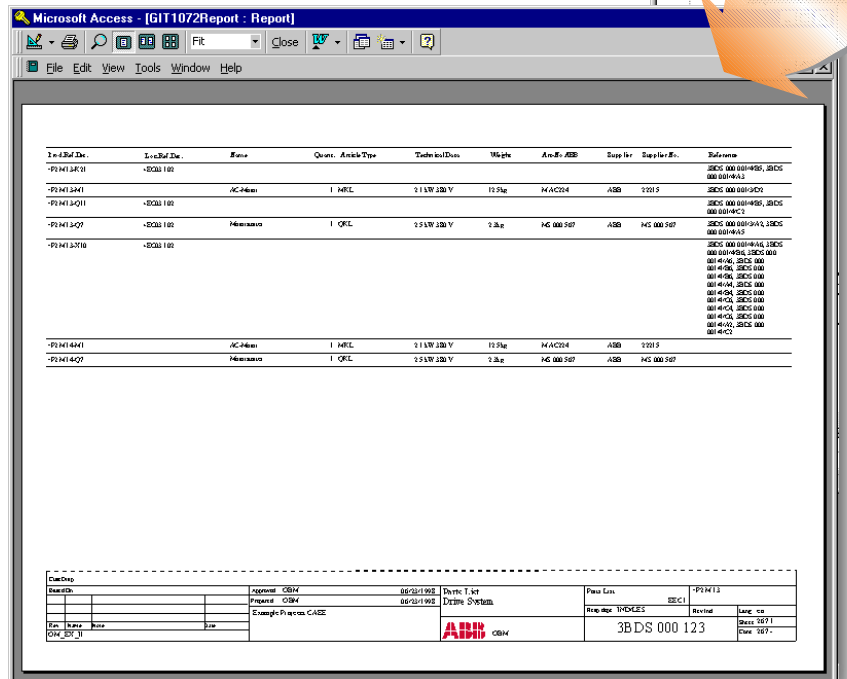
Often one wants to apply commands (e.g. "Print") to entire sets of drawings, not only to individual documents, one at a time. The Electrical Diagram Builder supports this approach by letting you select from a list the diagrams you want to process batch-wise. Search, query and filter functions are available for selecting objects to be processed.



	A	B	C	D	E	F
1	Name	Description	LibRef1	LibRef2	FuncParent	FuncDesig
2	CARDRIVE1	Drive System	DS.C1		Tundish	MY1
3	CARDRIVE2	Drive System	DS.C1		Spray Cooling System	MY2
4	CARDRIVE3	Drive System	DS.C1		Tundish	MY3

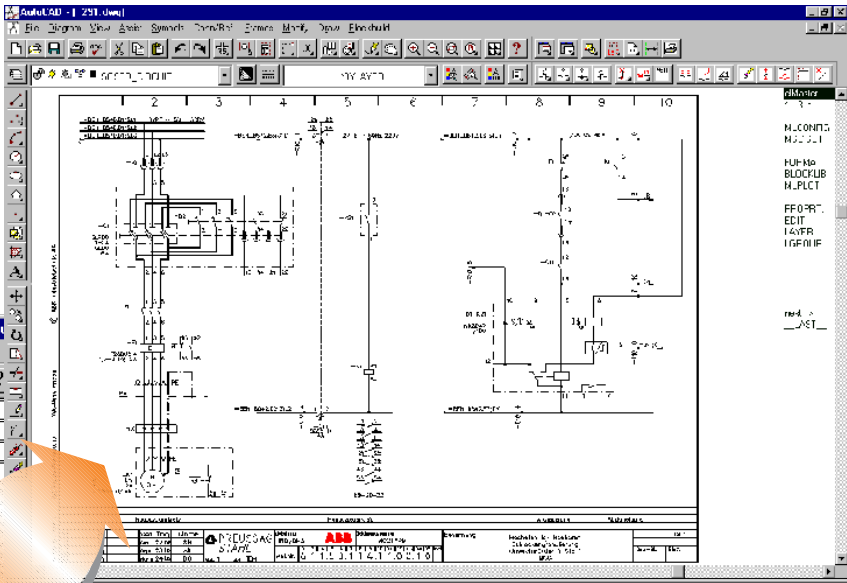
In cooperation with Advant Engineering Workplace and the Structure Builder, the Electrical Diagram Builder is able to create essential engineering documents largely automatically. The input required is simple textual parameter lists, specifying target objects, drawing templates and parameter values.

A parts list created/updated automatically



Inv.#Ref.Dsc	Inv.#Ref.Dsc	Name	Quant	Article Type	Technical Des.	Weight	Art.#.ABB	Suppl.#	Supplier #.	Subname
*PIM13401	*S001180	AC-Motor	1	MFL	113W 380V	11.9kg	MAC04	ABB	2205	SEC5 000 000 955; SEC5 000 000 961
*PIM13401	*S001180	AC-Motor	1	MFL	113W 380V	11.9kg	MAC04	ABB	2205	SEC5 000 000 955; SEC5 000 000 961
*PIM13407	*S001180	Motor	1	QFL	151W 380V	7.8kg	M5 000 587	ABB	M5 000 587	SEC5 000 000 914; SEC5 000 000 955
*PIM13716	*S001180									SEC5 000 000 943; SEC5 000 000 955; SEC5 000 000 956; SEC5 000 000 957; SEC5 000 000 958; SEC5 000 000 959; SEC5 000 000 960; SEC5 000 000 961; SEC5 000 000 962; SEC5 000 000 963
*PIM14041		AC-Motor	1	MFL	113W 380V	11.9kg	MAC04	ABB	2205	SEC5 000 000 955; SEC5 000 000 961
*PIM14207		Motor	1	QFL	151W 380V	7.8kg	M5 000 587	ABB	M5 000 587	SEC5 000 000 914; SEC5 000 000 955; SEC5 000 000 956; SEC5 000 000 957; SEC5 000 000 958; SEC5 000 000 959; SEC5 000 000 960; SEC5 000 000 961; SEC5 000 000 962; SEC5 000 000 963

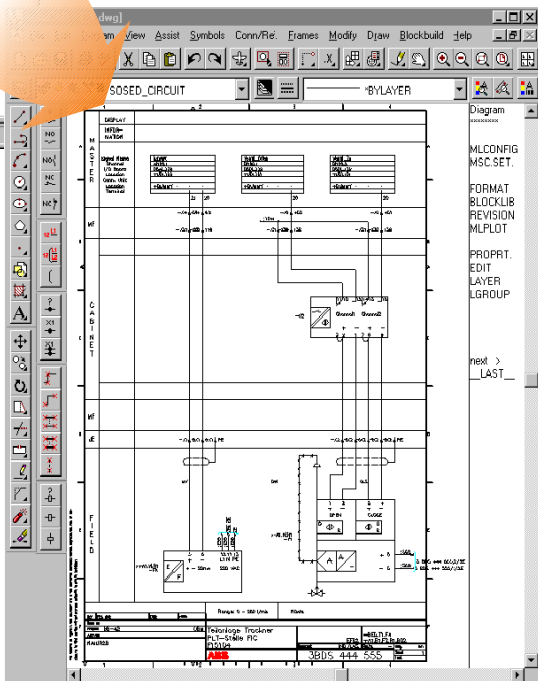
Date: 08/20/2002		Approved: OSW		Drawn: T.H.J.		Part: 3BD S 000 123		Rev: SEC1	
Description:		Project: OSW		Drawing: Drive System		Title: INDICES		Rev: 001	
Scale: 1:1		Sample Project CASE		Author: OSW		Date: 08/20/02		Draw: 107	



A circuit diagram updated automatically

me 1	measuring Equipment
me 2	Transducer, Transmitter
me 3	Signal
me 4	Signal
me 5	Transducer, Transmitter
me 6	Valve
me 7	Signal
me 8	Signal
me 9	Tag
me 10	Process Object
me 11	Process Object
me 12	Process Object
me 13	Process Object
me 14	Drive System
me 15	Process Object
me 16	Process Object

A loop diagram updated automatically



Article database for use over and over again

The Electrical Diagram Builder supports the creation and maintenance of an article database where data on all kinds of electrical equipment can be entered and then be used (i.e. referenced) over and over again. Consequently with the Electrical Diagram Builder you can assign equipment data to plant items (Advant Objects) by simply referencing items in the database.

Automatic generation of parts lists

Once you have drawn the circuits you need in your project you naturally want to know what equipment you need to realize them. Solving that problem is as easy as requesting output of a parts list by choosing an appropriate report out of the database. You can use standard reports shipped with the system or create your own.

Document version handling for better order

To keep the project under control as it progresses it is possible to enter and display approval and version data of electrical diagrams and reports. The function works with the following document categories:

- ✓ *Current document versions*
are those that are being edited at the current time,
- ✓ *Approved versions*
are locked to prevent further editing,
- ✓ *Old versions*
can be kept as a data, information and/or solutions bank for possible use later.



Make your craftsmen happy, go for the Electrical Diagram Builder

Symbol editing, import and export capabilities

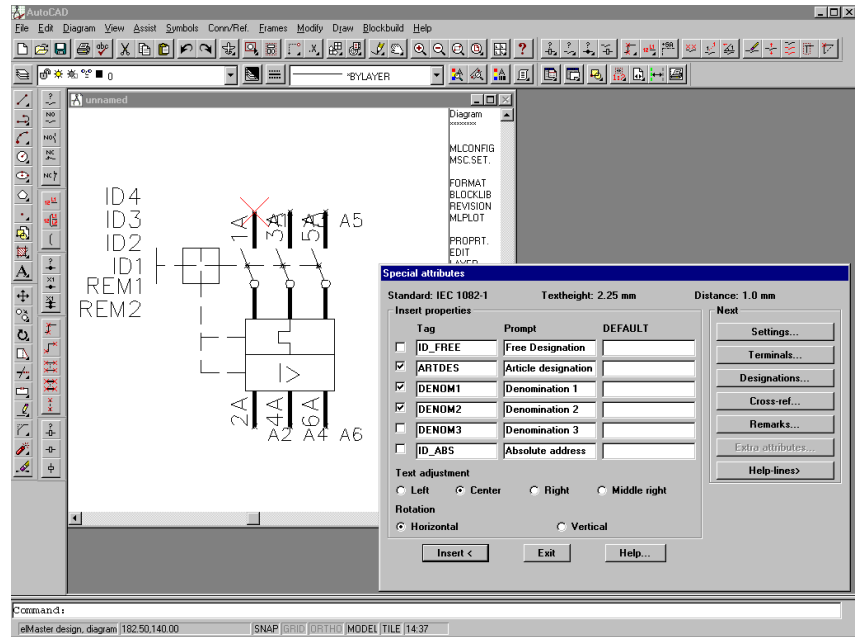
The symbol library available for use with the Electrical Diagram Builder saves engineering time and effort. It includes the relevant parts of the international IEC113, IEC1082 and IEC617/IEC11714 standards, e.g. relays, motors, sensors, transmitters, transducers, signaling devices, circuit breakers, fuses, terminals, etc.. Symbols include the necessary attribute definitions which are updated from the article database. This symbol library can easily be maintained by editing, importation and deletion. The software also offers export capabilities, making it possible to output parts of, or the entire symbol library to other AutoCAD® or Electrical Diagram Builder environments for re-use in other projects.

Automatic generation of cable and connection schedules

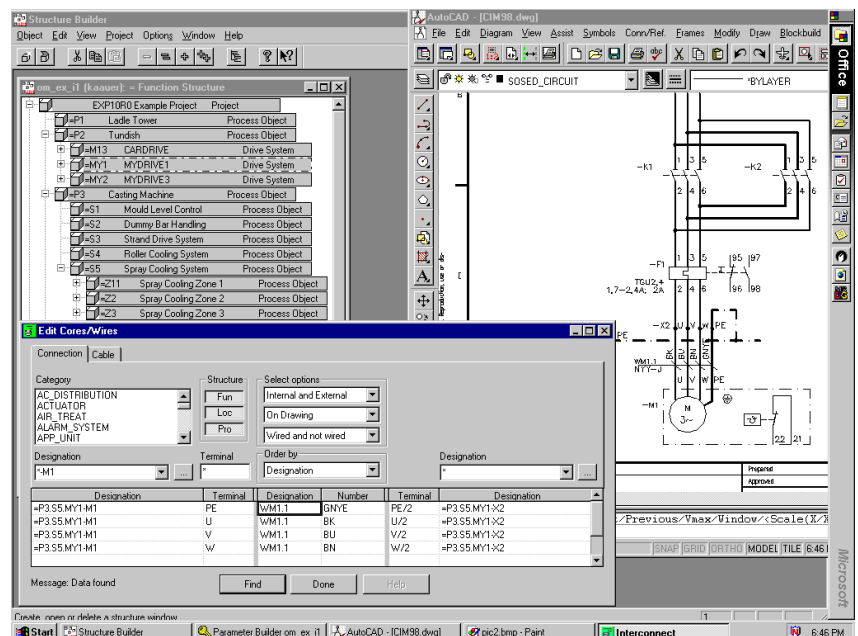
The optional Wiring Builder offers easy compilation of cable and connection schedules in close cooperation with the Electrical Diagram Builder. The application lets you:

- ✓ make use of connection information in circuit diagrams automatically,
- ✓ make preliminary cable definitions,
- ✓ assign wire numbers and wire part numbers manually or automatically,
- ✓ assign cable and cable part numbers or use existing preliminary cable definitions,
- ✓ update circuit diagrams with cable and connection information automatically,
- ✓ create cable and connection schedules.

All with the greatest ease and speed.



The symbol library available for use with the Electrical Diagram Builder can easily be maintained and improved by editing, importation and deletion. Symbols can also be exported to other AutoCAD® or Electrical Diagram Builder environments for re-use in other projects.



Assigning cable and cable part numbers to a range of selected cables is easy with the Wiring Builder.

The way to do better

Every professional knows that, to do a good job, good tools are essential. Well, in the area of industrial electrical design and engineering you cannot be better equipped than with the Electrical Diagram Builder. Try it! You are likely never to look back.





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ABB's Automation business segment includes major product areas such as control products and systems, instrumentation, analytical devices, meters, robotics, drives, motors and machines. Major industry lines served are pulp and paper, metals and minerals, marine, chemicals, pharmaceuticals, oil and gas, food and beverage, manufacturing industries and utilities (electrical, gas, energy, water, etc.). More information about Advant automation and control products can be found at: <http://www.advantocs.com>

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