



# ProPlan


The easy-to-use and practice-based CAE System  
for electrical documentation

 **AmpereSoft**  
*simply faster engineering*

# Optimized Engineering Process, consistent object orientation!







**N**oticeably shorten your engineering process with automated function sequences. The key: standardized material data that was classified, for example, with eCl@ssADVANCED. This enables users of the *ProPlan* CAE solution to generate symbols quickly and simply. A number of symbol trays are also provided.

ProPlan's auto-routing function offers you the latest generation of engineering. Using x, y and z coordinates as a basis, the 3D auto-routing function enables wiring to be routed automatically, taking cabinet doors and other depth dimensions into account. The optimization of your wiring lengths also takes into account whether cable ducts are to be used or not.

Users benefit from the simple and dynamic generation of documents such as parts lists, PLC lists, cross-reference lists, EQID labels, terminal plans, as well as cable and wiring plans.

All forms are based on XML. Users can adapt the forms to their own individual requirements.

The consistent object orientation results in an infinite number of possibilities for listing those parameters from the plan that are important for you.

The automatic output of smart PDF plans with jump labels and cross references rounds off the picture. You decide whether the available lists in the circuit diagram are to be generated again in a PDF document before the output. This ensures that the latest changes are also entered in the relevant lists.

The consistent system structure and management for each individual equipment item simplifies location for engineering and operation in the system.



*Whether in electrical engineering, control and automation technology, or in heating, ventilation, and air conditioning (HVAC) technology: AmpereSoft ProPlan is the powerful engineering tool for many industries.*

**P**roPlan features its own multi-lingual database. This makes it possible to activate and deactivate translation functions selectively. These can cover all languages, even those with Cyrillic letters. The database can output files and, after processing by a translation service provider for example, read them back in.

The project management function makes it possible to structure the projects at any level and enables them to function in accordance with DIN EN 81346-1. This complete overview of the project hierarchy in a tree structure with a direct link to the relevant plan types speeds up the planning process. Plan your documentation for power station construction and offshore plants without any problems in accordance with RDS-PP.

The many functions provided in the *ProPlan Viewer* make it possible to mark and describe modifications during the commissioning or ongoing operation of your plant. For this, you can enter the plant directly using a Windows-based PAD and pass on the noted changes immediately to the planning department. The data of the materials used for your machine or plant is directly available here. All components can likewise be identified with a QR CODE generated by *ProPlan*. A display of the product picture and an interactive product link directly at the symbol round off the range of functions. Any tedious searching in material lists thus becomes a thing of the past.

The safety provided for the user with the material exchange function for equipment is unique. The connections of the exchanged material are checked automatically for identical functions. This ensures that material is exchanged quickly and correctly.

The so-called *Project Explorer* represents the core of *ProPlan*. You use this to manage all your materials and all other information that you require for the engineering. Comprehensive mass maintenance and copy options support you in the rapid engineering of your plant. For example, you can create several hundred meters of cable, switches, contactors etc. and can start engineering immediately. If the EQID or cable numbers have already been provided by the customer, you can read in these EQIDs via one of the many interfaces available. zeichen über eine der vielen verfügbaren Schnittstellen einlesen.





n: Integrated in the  
eSoft Tool**System**




*This enables you to produce standard compliant  
circuit diagrams quickly and reliably.*



PHOTO: MEYER WERFT SHIPYARD



## INTERFACES, NO COMPROMISES!



We have been a driving force in the area of open and standardized interfaces and offer you a range of possibilities in the field of electrical engineering using our own scripting. Whether it's DXF, DWG, PDF, BMP, JPG, TIF, EXCEL, BMEcat on the one hand or the connection of other systems via XML/Automation-ML on the other: Nothing now stands in the way of you connecting to automation portals or ERP solutions such as SAP, ProAlpha or other software systems. A lot can be carried out by drag and drop.

All material data also provides the basis for the feature enhancements *TemperatureCalculator*, *QuotationAssistant* and various product configurators belonging to the *ToolSystem*. Pre-configured interfaces enable you to also exchange the data here trouble-free. You can thus automatically carry out the legally required temperature calculation of your switchgear assembly up to 1,600A, complete the individual verification at the same time and also determine the price of your engineering. In addition to the already mentioned interfaces, *QuotationAssistant* also offers the possibility to read in the data in a GAEB format and also output it. The creation of public tenders thus becomes child's play.

**T**he professional *MatClass* material management and maintenance program is a fixed part of the *ProPlan* software tool and is integrated in the *AmpereSoft Tool-System*.

This is *the* tool that ensures easy management, flexible distribution and use of your product data to speed up the process.

The detailed technical information in the eCl@ssADVANCED structure describes a product so precisely that tasks in the engineering process, such as symbol creation, wiring routing and temperature calculation, can be carried out automatically via the software.

Standardized classification systems such as eCl@ss and ETIM provide the foundation for the common language between a wide variety of software systems. A large number of adaptable formats such as BMEcat and Excel simplify the exchange of data with business partners and internal systems.

- ✓ Fast finding of the right equipment thanks to multiple search options, user-friendly filters and clear grouping of any material properties.
- ✓ Simple and fast location of identical objects using the bidirectional search in *ProPlan*.
- ✓ The possibility to create individual device combinations from individual components simplifies engineering with complex equipment and systems.
- ✓ Work with multiple material databases simultaneously or design your own material database with your preferred equipment.
- ✓ Use the comprehensive possibilities to centrally store documents such as data sheets, ground plans, operating instructions, product pictures etc.
- ✓ View data sheets and design verifications online in different languages or save them locally in your project.

*MatClass* makes it possible to automatically synchronize locally created data with other sites. This ensures that updated and synchronized company data is always available at any site. This therefore greatly simplifies the networking of different company sites.



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»Advanc





# the Way for the Future: the ed« material management in ProPlan

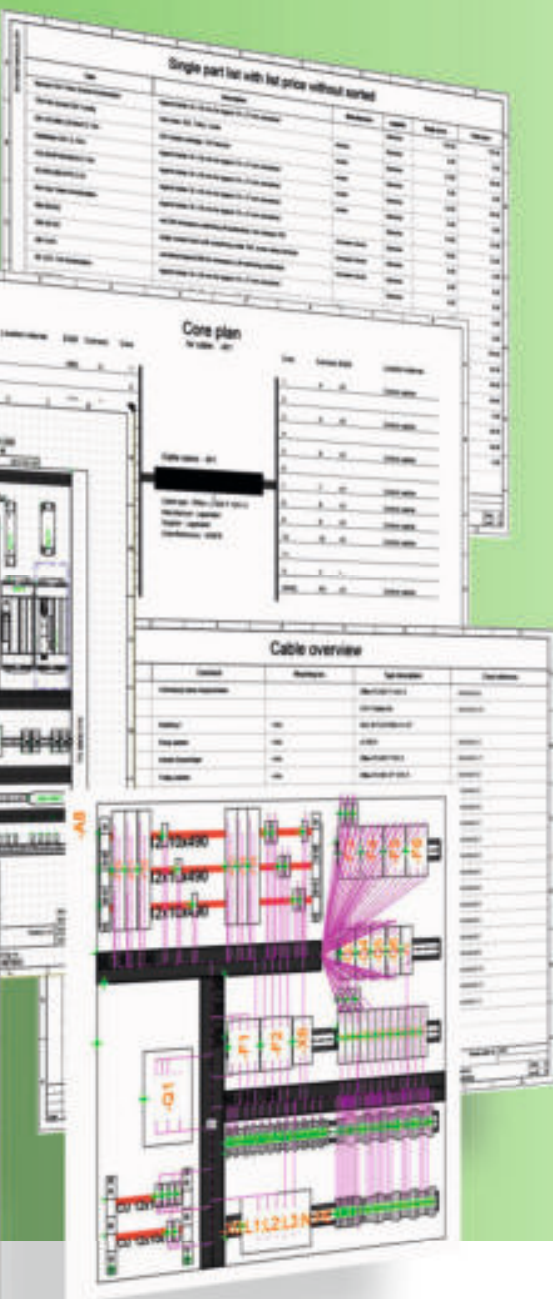


*Maintain and manage your material  
and service catalogs with standardized  
or user-defined classification systems!*

Whether in electrical engineering, control and automation or in heating, ventilation, and air conditioning (HVAC), *AmpereSoft ProPlan* is the powerful engineering tool



omation technology,  
AC) technology:  
ol for many industries

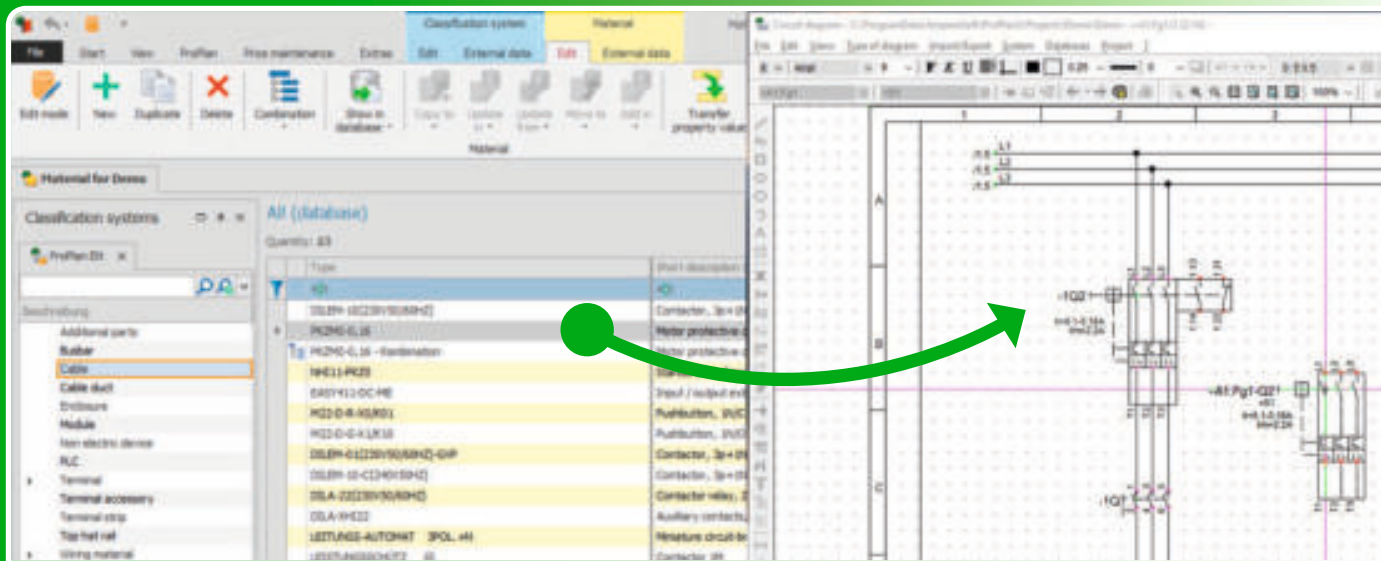


### FAST MOVING BETWEEN PLAN TYPES AND LISTS THROUGH CONSISTENT OBJECT ORIENTATION

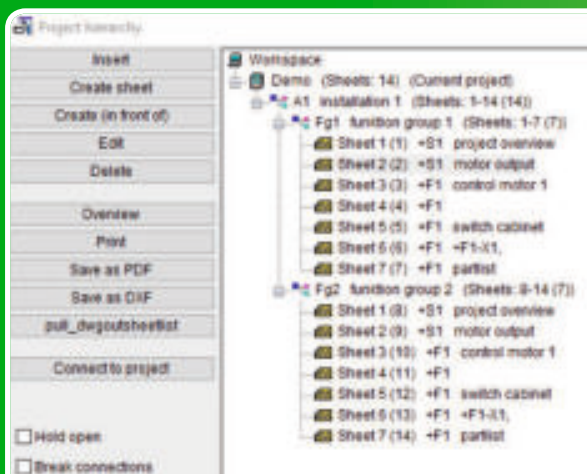
- ✓ Circuit diagram: Multipole / Single-line
- ✓ Assembly plan
- ✓ Terminal plan
- ✓ Cable core plan
- ✓ Cable overview
- ✓ Wiring plan
- ✓ Aggregated parts list
- ✓ Project overview
- ✓ Fluid and P & ID plans



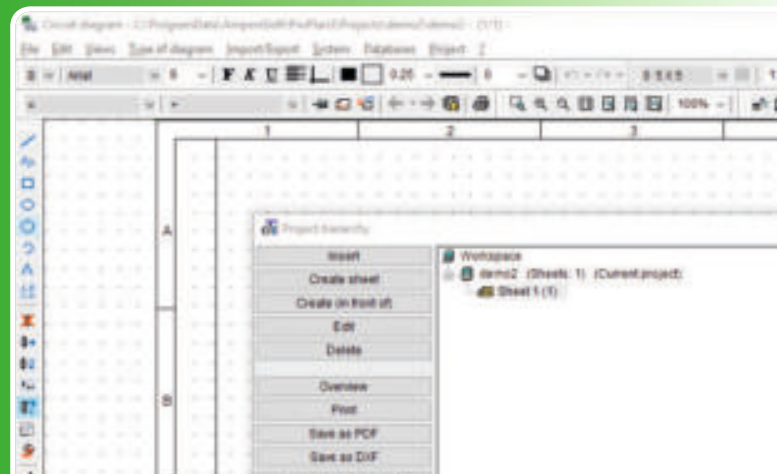
# Overview of the Essential Functions



*Inserting symbols from MatClass to ProPlan by drag & drop*



*Project structure in ProPlan*



*Creating a new project in ProPlan*



Seamless structuring with large projects with any number of levels



FUNCTION	FEATURES	USER BENEFITS
Genuine online functions	No post processing	✓ <i>Up-to-date display at any time</i>
Genuine object utilization	Cohesive display in all plan types, e.g. breakdown of circuit diagram, single pole display, fluid and P&ID overviews	✓ <i>Modification at one point causes the modification in all displays</i>
Drag and drop functions	Insert pictures, material and many other elements by drag and drop	✓ <i>Very easy and straightforward handling</i>
Material structure oriented operation	Devices and material combinations can be taken directly from the database and used in the plans.	✓ <i>All parts with properties are immediately available in the parts list.</i>
Project management	The project structuring to DIN EN 81346-1 in any number of levels and function	✓ <i>Seamless structuring possible with all projects sizes</i>
Material exchange	Individual subareas or over the entire project	✓ <i>Optimum flexibility with types or change of manufacturer during project engineering</i>
Project Explorer	Multiple processing of all objects with the Project Explorer; creating, copying, placing, locating etc.	✓ <i>Convenient processing of large projects, simple overview and processing</i>
Graphic symbols to EN/DIN, IEC	Extensive symbol libraries	✓ <i>Time saving</i>
Alternative symbol management	Assignment of several symbols to a single equipment item	✓ <i>Saving of different symbols for different applications can be assigned</i>
Assembly plan	Easily created through Wizard functions, online relationship to all plan types and lists, 3D view, true to scale	✓ <i>Bidirectional identification to circuit diagram, time saving</i>
Single line diagram	Direct relationship to multipole circuit diagram, assembly plans and lists	✓ <i>Automatic update in the event of changes</i>
P&ID diagrams	Circuit symbols with logical links for P & ID diagrams	✓ <i>Creation of all documents in a single project; logically interlinked</i>
Fluid diagrams	Circuit symbols with logical links for circuit diagrams for hydraulics and pneumatics	✓ <i>Creation of all documents in a single project; logically interlinked</i>
XML-based form creation	Lists for terminals, cables, wires, totals, individual items, PLCs etc. and overviews in modern XML format	✓ <i>Fast evaluation at the click of a mouse; individual adaption of forms; always up-to-date</i>
Potentials management	Cross-system, linked or star	✓ <i>Clearer overview, wiring support</i>
Modules	Simple creation of wired switchgear and controlgear assemblies and standard circuits	✓ <i>Fast compilation of documentation</i>
Efficient copy functions	The versatile copy options enable selected elements or sections to be copied logically.	✓ <i>Reach your goal faster with modular copying</i>
User-defined foreign language database	All texts can be displayed in any language with the click of a mouse (Unicode capable), maintenance of standard texts.	✓ <i>Worldwide use possible, text maintenance, reading in or out of texts, e.g. a translation service provider</i>
Creation of dimension diagrams	Automatic creation of device dimension diagrams based on the dimension entries in the database, 3D functionality	✓ <i>Time saving</i>
Assignable terminal connections	Can be assigned and placed remotely.	✓ <i>Greater clarity during engineering</i>
Graphic interfaces	DXF, DWG, VNS, PDF, BMP, JPG, TIF	✓ <i>Seamless connection with other graphic programs</i>
Reading in and output of DXF, DWG files	Reading in and output of extensive DXF drawings (e.g. ground plans) and complete circuit diagrams	✓ <i>Plans can be included in the ground plan; possibility of reading in from other circuit diagrams</i>
Open XML interfaces	Scripting function and link to AutomationML	✓ <i>Transparency; user-defined scripts can also be integrated</i>
Interfaces to drilling machines and robots	Graphic features can be read in directly by the drilling machines of <i>Kiesling</i> and <i>Steinhauer</i> ; automatic assembly of mounting plates	✓ <i>Seamless workflow, production process optimization</i>
Wiring output	Cable assembly via the CadCabel interface and wiring machines	✓ <i>Makes work easier, production process optimization</i>
Marking / label printout	Data transfer to device/terminal labeling software of various manufacturers	✓ <i>Benefit during manufacturing</i>
Management of PLC texts	Of all manufacturers through direct importing and exporting of the assignment lists	✓ <i>Makes work easier by preventing duplicate entries</i>
Writing material database	Continually updated manufacturer databases and neutral material data	✓ <i>List output with actual products and data</i>

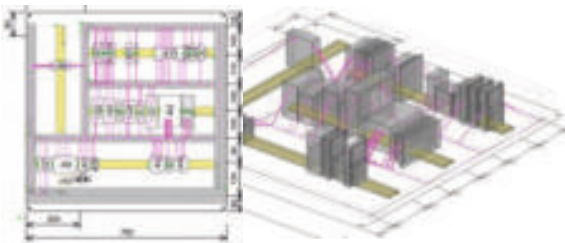
OTHER FUNCTIONS: QR code, AutoRouting, temperature calculation, calculation, as well as search and management options

# The AmpereSoft RoutingAssistant

*Ever wanted to assemble wires but your CAE system doesn't provide a suitable routing system for calculating wire lengths and a transfer format for the assembly machine?*

1		2		3		4		5		6		7	
Wiring list													
from		to		to		to		to		to		wiring parameters	
E00D		Mounting loc.		Cross reference		E00D		Mounting loc.		Type		cross section	
-H0A-S00-1	1	-H0A	-H0A-S00-1	-H0A-S00-1	-H0A-S00-1	2	-H0A	-H0A-S00-1	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-2	1	-H0A	-H0A-S00-2	-H0A-S00-2	-H0A-S00-2	2	-H0A	-H0A-S00-2	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-3	1	-H0A	-H0A-S00-3	-H0A-S00-3	-H0A-S00-3	2	-H0A	-H0A-S00-3	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-4	1	-H0A	-H0A-S00-4	-H0A-S00-4	-H0A-S00-4	2	-H0A	-H0A-S00-4	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-5	1	-H0A	-H0A-S00-5	-H0A-S00-5	-H0A-S00-5	2	-H0A	-H0A-S00-5	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-6	1	-H0A	-H0A-S00-6	-H0A-S00-6	-H0A-S00-6	2	-H0A	-H0A-S00-6	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-7	1	-H0A	-H0A-S00-7	-H0A-S00-7	-H0A-S00-7	2	-H0A	-H0A-S00-7	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-8	1	-H0A	-H0A-S00-8	-H0A-S00-8	-H0A-S00-8	2	-H0A	-H0A-S00-8	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-9	1	-H0A	-H0A-S00-9	-H0A-S00-9	-H0A-S00-9	2	-H0A	-H0A-S00-9	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-10	1	-H0A	-H0A-S00-10	-H0A-S00-10	-H0A-S00-10	2	-H0A	-H0A-S00-10	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-11	1	-H0A	-H0A-S00-11	-H0A-S00-11	-H0A-S00-11	2	-H0A	-H0A-S00-11	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-12	1	-H0A	-H0A-S00-12	-H0A-S00-12	-H0A-S00-12	2	-H0A	-H0A-S00-12	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-13	1	-H0A	-H0A-S00-13	-H0A-S00-13	-H0A-S00-13	2	-H0A	-H0A-S00-13	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-14	1	-H0A	-H0A-S00-14	-H0A-S00-14	-H0A-S00-14	2	-H0A	-H0A-S00-14	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-15	1	-H0A	-H0A-S00-15	-H0A-S00-15	-H0A-S00-15	2	-H0A	-H0A-S00-15	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-16	1	-H0A	-H0A-S00-16	-H0A-S00-16	-H0A-S00-16	2	-H0A	-H0A-S00-16	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-17	1	-H0A	-H0A-S00-17	-H0A-S00-17	-H0A-S00-17	2	-H0A	-H0A-S00-17	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-18	1	-H0A	-H0A-S00-18	-H0A-S00-18	-H0A-S00-18	2	-H0A	-H0A-S00-18	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-19	1	-H0A	-H0A-S00-19	-H0A-S00-19	-H0A-S00-19	2	-H0A	-H0A-S00-19	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-20	1	-H0A	-H0A-S00-20	-H0A-S00-20	-H0A-S00-20	2	-H0A	-H0A-S00-20	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-21	1	-H0A	-H0A-S00-21	-H0A-S00-21	-H0A-S00-21	2	-H0A	-H0A-S00-21	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-22	1	-H0A	-H0A-S00-22	-H0A-S00-22	-H0A-S00-22	2	-H0A	-H0A-S00-22	1	-H0A	0,75/0,75/0,75/0,75	AT	1600
-H0A-S00-23	1	-H0A	-H0A-S00-23	-H0A-S00-23	-H0A-S00-23</								

*Data from your CAE system  
relevant for routing*



RoutingAssistant: Assembly plan  
with eCl@ssADVANCED data,  
wiring optimization and routing  
(with length calculation!)



## Wiring assembly

The parts and wiring list from your CAE system are read into *AmpereSoft RoutingAssistant* via a configurable import interface.

The eCl@ssADVANCED data of the equipment used enables you to generate the symbols and create an assembly plan in no time at all. You obtain your eCl@ss ADVANCED data from your manufacturers. If a manufacturer does not yet have this data available, you can enter this data yourself at any time in your *MatClass* database.

You can carry out the routing at the click of a button, optimize the wire routing and add any missing connections (even without a circuit diagram!). You can naturally add, edit and also automatically calculate the wire properties (wire color, wire cross section etc.) before routing, based on the data of the circuit diagram, the technical features of the components used and a configurable set of rules.

**BONUS FEATURE:** Drilling and milling information included in the assembly plan can be output in DXF format and used for setting up drilling and milling machines.

**BENEFITS:** If you already have a CAE system, which however has no optimum solution for wire routing, no new investment in another CAE system is required. The *AmpereSoft RoutingAssistant* processes the data relevant for the routing that is output from your CAE system in a file format that can be read by the wire assembly machine.

If you don't have a CAE system yet or wish to change it, you can use the *AmpereSoft RoutingAssistant* as a feature enhancement to our *AmpereSoft ProPlan* CAE system. This offers the major benefit that changes in the routing process can be transferred automatically to the documentation (circuit diagram, lists etc.). No more gaps in your documentation!

# The AmpereSoft ToolDataManager

*The cross-project search and maintenance tool for working with AmpereSoft ProPlan.*

- ✓ Find the required *AmpereSoft ProPlan* project in your directory structures (local/network) quickly and easily by using project attributes (fixed texts), key texts, plan texts, symbol names and material attributes.
- ✓ Maintain attributes, or symbols and material for all projects or specific ones.
- ✓ Use the effective mass management tool for importing both materials and symbols, as well as for archiving, compressing and outputting the selected *ProPlan* projects.
- ✓ Use the simple drag and drop functionality to open a *ProPlan* project or create a new one. If required, simply use an existing project as a sample for the new project.

## Overview of key functions

Function	Features	User benefits
Cross-project search for symbols, material data and plan texts	Search in freely selectable directory structures (local/network)	Fast finding of the required project parameters
Fast search table	Search for fixed or key texts within the project table shown	Fast finding of the required projects/sample projects
Search results	Display of found hits per project	Simple overview of the search results
Various filter options	Filters, multiple filters and linked filters possible for each table column	Selective searching of projects
Grouping	Grouping of any columns of the project table	Fast overview of projects with the same properties (e.g. grouping by customer)
Data maintenance	Editing of fixed texts, import of material and symbols; project-related or cross-project	Efficient working through mass maintenance functions
Open and create ProPlan projects	By drag and drop or via the menu	Convenient opening and creation of ProPlan projects with or without sample project
Project management	Simultaneous archiving, compressing, moving and output of all selected projects	Simple working of cross-project mass management functions
User columns layout	User-defined columns for fixed and key texts possible	Creation, display and editing of user-specific project attributes
Scripting	Extension and adaption of program functions	Implementation of customized interfaces
Excel import	Feature enhancement for reading in data from Microsoft™ Excel®	Simple and convenient data update or transfer

## THE VARIANTS

### ToolDataManager LIGHT

User-defined project overview as well as search and filter functions for fixed and key texts in read mode. Suitable for users, e.g. from sales or management who wish to obtain an overview of projects / applications and their features. This variant is available for *AmpereSoft ProPlan* users from version 2016.1.

### ToolDataManager PROFESSIONAL

Additional editing functions for fixed texts and project data. Including search functions for plan texts, symbols and material values as well as scripting function for the automation of processes. Cross-project management functions such as archiving, moving, printing and generation of output files (DXF, DWG, PDF file). Project creation with or without sample project.

### ToolDataManager PROFESSIONAL – Excel Import feature enhancement

For importing project parameters from external Excel management files. This process can be automated with scripting.

# MatClass

Convenient data maintenance—  
easy distribution



*Maintain and manage your material  
and service catalogs with standardized  
or user-defined classification systems!*



**M**atClass is the tool integrated in the *AmpereSoft ToolSystem* that ensures easy management, flexible distribution and use of your product data to speed up the process.

### Your optimized engineering process

As an independent catalog system for materials and services *MatClass* offers essential critical support for the smooth running of processes in your company. The detailed technical information in the eCl@ssADVANCED structure describes a product so precisely that tasks in the engineering process, such as symbol creation, wiring routing and temperature calculation, can be carried out automatically via the software.

#### Data exchange

- Microsoft™ Excel®
  - Open Office
  - XML
  - BMEcat
  - ERP Systeme
  - SQL Server
- (depending on the program version)

### Distributing product data – in a standard format

Standardized classification systems such as eCl@ss and ETIM provide the foundation for the common language between a wide variety of software systems. A large number of adaptable formats such as BMEcat and Excel simplify the exchange of data with business partners and internal systems.

### Efficient mass maintenance for your product master data

The clear display of product information in *MatClass* ensures efficient maintenance and easy management. Easy-to-use functions simplify the mass maintenance of commercial, technical, multi-media as well classification data.

### Consistency in the process with the *AmpereSoft ToolSystem*

*MatClass* is the basis for all tools to ensure the effective use of standardized data in the entire *AmpereSoft ToolSystem*. Whether in sales, design engineering, purchasing, work preparation, stock-keeping or production – the material master data is available for all processes.





## Our Seminars—Become a Master of Our Products



*Thanks to the fantastic training seminar  
I soon became a ProPlan professional!*

## We offer the following ProPlan seminars:

### ProPlan basic seminar

Learn the ProPlan functions for creating your electrical documentation effectively. This includes:

- ✓ Circuit diagram
- ✓ Equipment assembly plan
- ✓ Terminal plans
- ✓ Cable overviews
- ✓ Cable core plans
- ✓ Parts lists

After the four-day training seminar you will be able to create a complete electrical documentation.

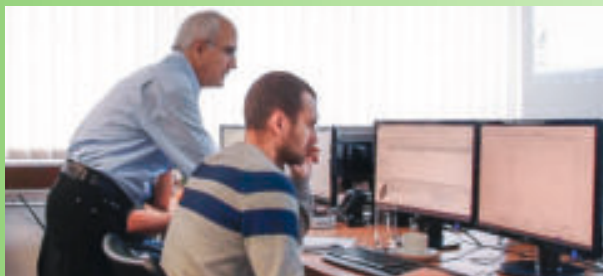
### ProPlan Expert seminar

The Expert seminar builds on the training provided in the basic seminar. It is designed for trained and experienced ProPlan users.

The three-day seminar includes training in how to create user-defined databases, forms, expert symbols, subcircuits and modules, and how to modify lists. *ProPlan* functions for PLC devices with regard to the labeling of I/O cards and the associated assignment to the PLC programs.

### ProPlan update seminar

The seminar trains you in the new functions of the latest *ProPlan* and *MatClass* version. It also enables you to consolidate the acquired knowledge about *ProPlan* functions for optimizing the process chain. The training seminar is one day long.



### Dates and topics

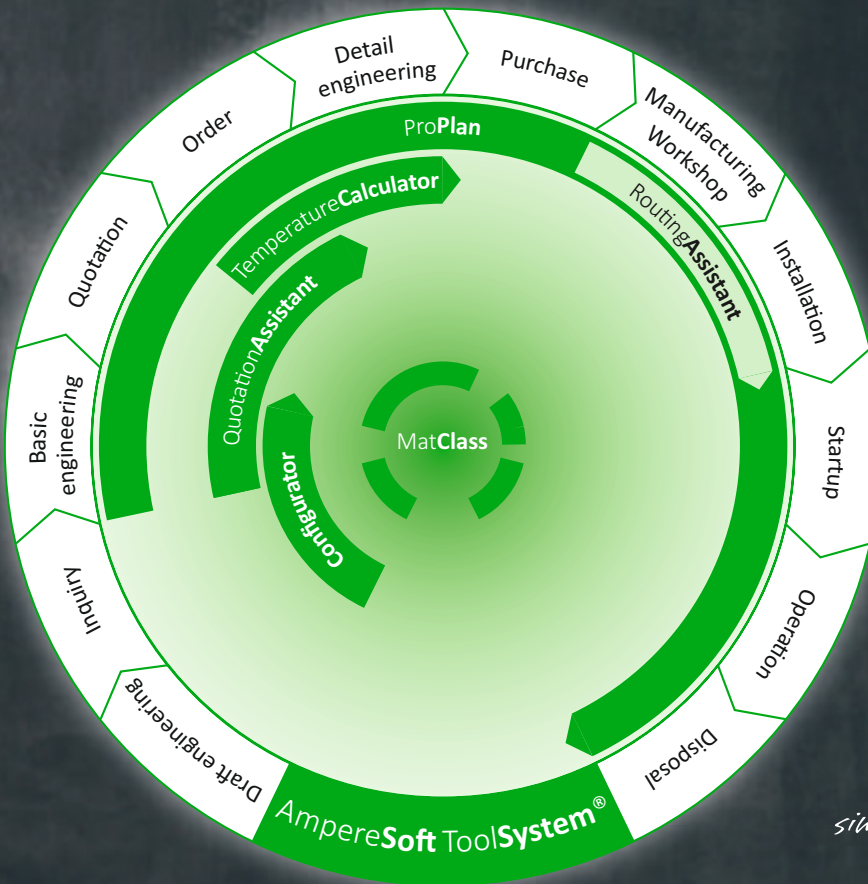
Further information is provided on our web page [www.amperesoft.net](http://www.amperesoft.net).

### In-house seminars

We will be glad to train you together with your colleagues in-house at your company. We can provide you with a specific quotation on request.

# AmpereSoft ToolSystem

Optimize your engineering processes



**T**he AmpereSoft ToolSystem combines innovative software tools for your engineering process. You benefit here from the shared use of data once it has been entered. With each process step your projects will gain more information, giving you the overview and allowing you to track any changes and ensure they are taken into account in all process steps. The shared database—for example, the comprehensive and detailed product data of the manufacturers—is accessible to all tools at any time. This ensures the required quality assurance and documentation.

*simply faster engineering  
with the AmpereSoft ToolSystem*

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**I AmpereSoft**  
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