Performance Description

Contents: EPLAN Electric P8 2024
Status: 08/2023

FRIEDHELM **LOH** GROUP

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<Installation directory>\bin\License.txt

The complete license texts for EPLAN Cloud applications and services are available at the following link:

https://goto.eplan.com/EplanCloudLicTxt

Table of Contents

Introduction

EPLAN offers Engineering software and service in the fields of electrical engineering, automation and mechatronics. We develop one of the world's leading software solutions for engineering, plant engineering and enclosure design. EPLAN is also your ideal partner for simplifying challenging engineering processes. Standardized and individual ERP and PLM/PDM interfaces ensure consistent data for your entire value chain.

Working with EPLAN means unrestricted communication across all engineering disciplines. Whether small or large companies: Our customers can use their expertise more efficiently. EPLAN aims to keep growing with you, our customers and partners, and drives the integration and automation in engineering. "Efficient Engineering" is our motto.

EPLAN was founded in 1984 and is part of the Friedhelm Loh Group. The family-owned company is present worldwide with 12 production facilities and 94 international subsidiaries.

Further information: www.eplan-software.com

Extensions and Modules for Every Purpose

No matter to what extent work with EPLAN solutions is already taking place in the company and which requirements have to be fulfilled in the future: Extensions in all directions can be implemented easily thanks to the add-on concept of EPLAN – flexibly and individually for individual tasks.

To this purpose EPLAN offers comprehensive extension options through extension modules and in the form of service packages - the "Elements".

A comprehensive overview of the current extension modules and Elements is provided in the licensing overview. Should you have any further questions on this topic, please do not hesitate to ask your EPLAN contact person.

EPLAN Electric P8

With EPLAN Electric P8, electrical designs for machines and plants are configured reliably, consistently and rapidly in an engineering system. The software supports diverse engineering methods: from manual creation up to standardized and template-based work. EPLAN Electric P8 automatically creates detailed reports as an integral component of the project documentation. If desired, this can be done either continuously or bundled after the project has been completed. This way all required information is supplied from the engineering phase to the downstream process phases – from the consistent planning through to manufacturing, commissioning, maintenance and servicing.

Once recorded in the schematic, the project data form the basis for automated completion of the machine and plant documentation.

Added Values

- Switching symbols can be quickly and easily connected with each other by means of autoconnecting.

- The user can choose between a graphical, logical or device-oriented planning approach to support different work processes.

- Reports such as terminal diagrams, cable diagrams or bills of materials are created automatically.

EPLAN Elements / EPLAN Add-on Moduls

Elements: Compact+

The optional and fee-based Elements "Compact+" includes the functionalities and options described below.

EPLAN Mounting Panel also allows for schematic creation and reports the configuration of 2D mounting layouts for mounting panels and enclosures.

Using so called jump functions, you can switch between 2D mounting layout and schematic view. When placing items on the mounting panel, the program can take account of locked areas and mounting differences.

For the 2D mounting layout, the user can generate item legends that can be bound to the project in a number of different ways.

In order to support the various working methods of designers and engineers, it is also possible to perform a 2D mounting layout independent of the schematic. The part placements used in the 2D mounting layout in this context define a device, even if no corresponding function has been placed in the schematic yet.

During placement, devices used in the schematic or existing in the parts preselection can be displayed in a list structure or tree structure.

Items used in the schematic can be placed on a 2D mounting panel. In the course of the placement a check is carried out whether the positioning is taking place on the correct mounting panel. This furthermore immediately indicates which items from the schematic have yet to be placed on the mounting panel.

The data of the items in the 2D mounting layout can be listed automatically. The resulting enclosure legend can be generated as a window legend – i.e. as a freely positionable graphical object – on the same project page as that of the 2D mounting layout. It is alternatively possible to output the legend as a separate form on its own project page.

EPLAN Multiuser allows several users to edit a project simultaneously in multi-user operation. You can furthermore see which users are currently working on a project with the Elements "Professional+" functionalities of the "EPLAN Multiuser

Management". This allows users to define working sections in large projects in order to have a better overview of the project planning.

Please contact EPLAN Support with regard to the hardware requirements for multi-user operation. We can advise you specifically according to your individual requirements.

EPLAN Overview Reports offers automatically generated overviews and delivers a rapid and correct listing of the items used in the schematic. The following overviews can be generated in this context:

- Cable overview

- Plug overview

- Terminal-strip overview

- Potential & Signal Overview

The potential overview outputs the project data on potentials and signals.

EPLAN Single Line offers the possibility of creating single-line schematics as part of the project documentation.

This simplifies the creation of higher-level function overviews considerably. There cables, terminal strips and plugs can be defined in advance in order to be included later in the detailed schematic. Single-line representations are also often used to represent the current distribution simply and structured and thus also to determine the protective values.

The system can be used to create single-line representations from macros for graphical pre-planning amongst others. This allows you to create a complete overview very quickly at the start of project planning and therefore simplify the planning of parts to be ordered in advance. If required, the detailed interconnection of items can also be stored in table form in the database in the single-line representation.

There is a synchronization between multi-line and single-line schematics. This allows you to automatically update the other representation when using copy and revision functions.

Elements: Select+

The optional and fee-based Elements "Select+" includes the functionalities and options described below.

EPLAN PLC & Bus Extension supports the user in managing PLC controllers and bus systems.

Several bus systems and PLC controllers can be managed in one EPLAN project. In the process several bus systems can be connected to a PLC or a bus system can contain several PLC control systems. The PLC information in an EPLAN project can be displayed and edited in a dialog.

PLC connections can be re-addressed automatedly and displayed on overview pages. Settings for different PLC types can be saved in schemes and switched centrally.

The wiring of PLC assemblies can be overviewed at every project stage and edited with system support.

Network Structure

The defined network structure can be mapped with symbols on a single-line schematic page graphically. The system then manages the bus IDs with the dependencies of the slave and master configuration. Different communication protocols can be defined directly at the bus plug.

PLC Data Exchange

Various exchange formats, amongst others AutomationML, are available for the exchange of PLC configuration files with external PLC configuration programs.

You can plan the assignment of the PLC card to the rack slot / module in the same way as the bus cable and the type of station of the node model number. The PLC navigator shows which racks and PLC cards are used to form the network structure in the hardware.

Automatically Generating Schematics from PLC Data

PLC functions can be imported from a PLC configuration file or created interactively in the PLC navigator. Assignment lists and hardware configurations from the PLC configuration programs of the manufacturers are used as source data. The Elements "Select+" allows automatic placement of PLC functions and allows the generation of PLC schematics including overview pages at the click of a button.

This allows PLC configurations to be created using special PLC configuration programs which can then be imported into EPLAN and used to generate a schematic automatically. Schematics, PLC overviews, and hardware structures are automatically generated as target data.

Reports can be created in the form of PLC diagrams and PLC card overviews.

The PLC diagram provides information on PLC connection points of the PLC card. One diagram can be created per PLC card.

The PLC card overview represents the physical cards of the PLC, which are detailed in the distributed schematic view by the individual PLC boxes. This overview graphically displays which inputs / outputs are occupied and which are available, which function these perform, and on which schematic page they are displayed. This type of overview can contain a different number of inputs and outputs, depending on the manufacturer and type.

EPLAN Netbased Wiring allows the planning of the wiring of the components in a plant from the functional view in tabular form. With the "point wiring" the items / connection points that are connected to each other are displayed in the schematic. The order of the connections can still remain open at this point. When the spatial arrangement of the components and their optimal wiring has been clarified by the installer later on, this information can be added.

In the case of strongly distributed potentials the net-based representation makes many interruption points and connection lines in the schematic superfluous. The engineer thus represents complex connections in simplified form. The schematic is better structured and easier to read for the installer.

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Elements: Collaboration

The optional and fee-based Elements "Collaboration" includes the functionalities and options described below.

EPLAN Revision Management allows to automatically record and document modifications at existing projects using a revision control. The user can also access older versions of the project and mark the modified project pages with an approval stamp.

If objects were changed in a revision, these are displayed with a graphical marker in the schematic. The revision states created for a project can be output in revision overviews, which can be either printed or inserted into the current project as separate report pages.

EPLAN Project Management offers the possibility of project management across multiple devices in a local client/server infrastructure. Project-specific and non-project-specific information can be stored and displayed in the project management. Projects which are provided via the EPLAN Cloud Service eMANAGE cannot be managed.

In order to also find existing projects starting from other workstations via the project management, it is possible to load the header data of the EPLAN projects into a project management database.

Project properties can be processed in blocks in project management. A complete view of the project header data of a project can also be output. If desired, the users who are currently editing a project are displayed.

EPLAN Change of Standard offers the possibility of adapting an existing project to the specifications of a different standard on the basis of a wizard function. On the basis of suitable templates you can replace plot frames and forms, rotate schematics (Europe – USA), replace symbol libraries and symbols, and adapt designations and descriptions to the target standard.

EPLAN Multi Language Translation offers the possibility to output mono- or multilingual schematic documentation.

Texts within an EPLAN project are automatically translated. The support of professional translation agencies can be integrated through a data exchange via XML, CSV or TXT. Unicode characters are supported. The "AutoComplete" functionality minimizes manual inputs.

Elements: Professional+

The optional and fee-based Elements "Professional+" includes the functionalities and options described below.

EPLAN Multiuser Management

Extensive projects are often edited at the same time by several person and are often not transparent for the individual users in view of the amount of data involved. Although the designer only works in a defined part of the project, EPLAN displays the entire project data in dialogs and navigators. In this use case the "EPLAN Multiuser Management" module reduces the amount of data for the individual user.

Defined Working Sections

You can use this option to divide projects structured by identifier blocks into "defined working sections". The division of projects into defined working sections is done on the basis of the existing structure identifiers in the project. Either each user chooses the defined working sections in which he or she wants to work, or the assignment is done centrally by an administrator.

Subproject Management

With this option projects can be divided into smaller subprojects and edited. These subprojects can then be edited independently of the overall project.

Projects can be divided on the basis of different criteria as required, for example by trades or by structure identifiers. The criteria specified by the user for the division are "schemes". The working method also allows comfortable collaboration with suppliers.

After completed editing, the subprojects can be integrated back into the overall project in order to automatically obtain a complete documentation.

EPLAN Multiuser-Monitor offers additional transparency and an overview of the current editing steps, in particular when editing projects with multiple users. In the case of actions with a corresponding execution time (for example check runs, reports etc.), the Multiuser Monitor shows the status of the action.

EPLAN Multiuser-Monitor provides information which users are active in which project and which actions are performed by whom in the project.

EPLAN Project Options defines areas of a machine or plant as options and then displays or hides them within the EPLAN project. This way, configuration characteristics or different designs of a machine or plant can be easily represented and managed.

The currently activated project options are only considered for reports within a project. Hidden project options are not considered.

A project option can also be displayed transparently. With the transparent display it is also graphically easy to recognize that at this point in the documentation a project option has been defined which is, however, currently deactivated and not considered.

Additional information (e.g. in deactivated project options) can be removed from a project prior to delivery. Special reports give an indication which project options are contained in the project and which ones are selected.

EPLAN Project Reference supports the collaboration between client and supplier. Here the "Collaboration" Elements with the EPLAN Project Management functionality is a prerequisite for use.

An incoming or outgoing project can be checked by the supplier as well as the client rapidly and without manual work against the specifications and guidelines of the client. A structured overview of the test results allows a substantiated assessment of the project quality and consistency. The assessment whether the project fulfills the acceptance criteria of the client is thus possible at any time.

The following criteria can be used for a project comparison:

- Is the project free of errors? A project is free of errors if none of the scheduled check runs generate messages.

- Are the project-related settings unchanged?

- Are the project data properties unchanged?

- Are they compliant with the project planning specifications?

Differences to the project specifications are documented by means of a message report.

EPLAN User Rights Management

Access to functionalities and options of the EPLAN Platform can be administered, similar to the Windows rights management.

The usage of dialogs, menu items and commands of the user interface can be restricted using **EPLAN User Rights Management**.

The defined access rights can be defined individually or in blocks and can be assigned to users or user groups.

If certain rights are revoked from a user, the associated menu items will be grayed out. In this way, the system only offers users the commands they need to perform their tasks.

Both users as well as user groups that have already been defined in a company can be transferred simply into the rights management by using Active Directory.

If the rights management is to be used, the "Professional+" Elements has to be used at all the EPLAN workplaces in the company. This is the only method of ensuring that a user cannot circumvent the defined rights structure.

Elements: Ultimate

Prerequisite for the "Ultimate" Elements is the "Professional+" Elements.

The optional and fee-based Elements "Ultimate" includes the functionalities and options described below.

EPLAN FieldSys simplifies the planning of the machine / plant cabling. Automatic routing including length determination takes place in 2D and accelerates the creation of a comprehensive documentation. Extensive reports that are created on the basis of the routing results also support the tasks after the engineering process, such as mounting and maintenance.

EPLAN Fluid (add-on) facilitates the norm-compliant planning of hydraulic, pneumatic, lubricant, cooling, and electrical engineering in one central documentation and on a shared engineering platform. Automatic cross-references between the trades simplify navigation and the processing of hybrid construction elements such as e.g. electropneumatic or electrohydraulic assemblies.

The exact functional scope is described in the performance description for EPLAN Fluid.

EPLAN Preplanning Professional (Add-on) allows you to record and manage the technical data for process automation, building technology or automation technology in mechanical and plant engineering in the EPLAN Platform already at an early phase of the engineering process.

The exact functional scope is described in the performance description for EPLAN Preplanning.

EPLAN License Manager

The scope of delivery of the EPLAN products encompasses licensing without a dongle. If the license is bound to a hardware copy protection device or Hardlock (dongle), this continues to be required to run the software.

The licensing supports five EPLAN versions retroactively, including the current version.

Management of the Network Licenses on the License Server

In the case of a network license the workstations obtain their license from a central server.

With the network license it is possible to define license packages based on a pool of licenses (system, extension modules, Elements, add-ons).

Rights Management

Access to the license packages can be controlled computer- or user-specifically. A user can then obtain access to one license package, another one cannot be accessed by the user (for example EPLAN Electric P8 / EPLAN Fluid).

Borrowing Network Licenses

Borrowing online

The workplace can borrow the license from the server and subsequently continue working without a network connection. The period for which the license can be borrowed can be set. After this period has expired, the license "expires" on the workstation and is available again on the server. The user can return the license actively to the server before the borrowing period expires, if required.

Borrowing offline

Licenses can be borrowed at the license server and sent per e-mail. Licenses borrowed offline cannot be returned to the server before the borrowing period has expired. If a network connection exists, licenses that were previously borrowed offline can be returned online.

Automated Borrowing

Borrowing of licenses can be automated through the automatic callup.

Reporting

The network license configurator (ElmConfig.exe) shows the current utilization rate and the borrowing status of the network licenses.

On request the license server outputs a log file as a comma- or tab-separated text. The log files can be edited further by the customer in order to generate statistics about the usage of the licenses.

Cross-domain Access

The network licenses can also be managed across domain limits. This means that a simple central management and administration is possible for large companies.

Failover

The centralization of network licenses makes it necessary to draw up a backup concept in order to ensure continued worldwide usage of the software if the server fails.

In the case of a server failure (failure of the primary License Manager) the task of network license management is taken over automatically by the standby License Manager, without user intervention. The standby License Manager functions immediately as a temporary License Manager. This allows the primary License Manager to be returned to service without the software usage at the workplaces being interrupted.

Implementation in the network takes place via two servers within a domain on which one EPLAN License Manager is installed respectively.

EPLAN Assembly Reports

The system includes automatic creation and, if required, online updating of graphical reports such as terminal diagrams, cable diagrams, and bills of materials.

Connected reports for project sections or report types can be grouped into blocks. The reports that belong to a report block are then always updated simultaneously.

The result of the report is displayed in a report page or output to external files, e.g. for the printing of item labels. It is possible to output the report pages into the same or into any other project.

General Reports

- Table of contents

- Title page / cover sheet

- Structure identifier overview

- Plot frame documentation

- Forms documentation

- Symbol overview

- Connection list

Function-related Reports

- Terminal diagram
  One terminal diagram for each terminal strip. Structure and wiring.

- Terminal line-up diagram
  One terminal line-up diagram for each terminal strip.

- Plug diagram
  One plug diagram for each plug. Structure and wiring.

- Cable diagram
  The cable properties for each cable. Source and target of the individual conductors.

- Cable assignment diagram
  The cable assignment diagram shows single-line predefined cables in multi-line representation with pin assignment.

Revision Overview

The revision overview outputs the data of the revisions in the project.

EPLAN Article Reports

Parts list
The parts used in the project are listed individually.

Summarized parts list
The parts used in the project are listed individually. Identical parts are consolidated and listed in summary.

Device Tag List

The device tag list outputs the devices used in the project.

EPLAN Graphical Reports

Connection Diagrams

The connected targets of items are represented graphically in the automatic connection point diagrams. You can tell at a glance how the signal and energy flows between the items are wired.

- Terminal-connection diagram

- Pin-connection diagram

- Cable-connection diagram

Device Connection Diagram

The device connection diagram displays the wiring of the connection points from a device-oriented viewpoint. Sorting is device.

EPLAN Overview Reports

Overviews

The automatic overviews provide a rapid and accurate list of the items used in the schematic.

- Cable overview

- Plug overview

- Terminal-strip overview

Potential & Signal Overview

The potential overview outputs the project data on potentials and signals.

EPLAN Interfacing

For the visual identification of devices and connections, directly on the plant site, it is necessary to label them.

Identifying and descriptive information about parts and connections can be prepared for labeling automatically. The data is then output in external applications such as Excel.

EPLAN FieldSys

The optional "EPLAN FieldSys" extension module simplifies the planning of the machine / plant cabling. Automatic routing including length determination takes place in 2D and accelerates the creation of a comprehensive documentation. Extensive reports that are created on the basis of the routing results also support the tasks after the engineering process, such as mounting and maintenance.

Hardware Requirements EPLAN Platform

Workstation

The computer platform is a PC with an Intel Core i5, i7, i9 or compatible processor. Rather select a high-speed computer with less CPU cores than a slower computer with more CPU cores.

Recommended Workstation Configuration

Processor:	Multicore CPU, not older than three years*
RAM:	16 GB
Hard disk:	500 GB
Monitor / graphics resolution:	2-screen solution with a resolution of at least 1280 x 1024 recommended 1920 x 1080
3D display:	Graphics card from AMD or NVIDIA with the latest Direct3D driver

* Processors with the instruction set extension AVX2 are required for the operation of the EPLAN Platform 2024. Therefore hardware components such as the used processor are also checked for compatibility during the start of EPLAN. If processors are found that use outdated instruction sets that are unsuitable for EPLAN, a corresponding error message is displayed and EPLAN is not started. Processors with unsuitable instruction sets are usually older than approximately 10 years. If EPLAN is to run on virtual computers that use the Microsoft Hyper-V component, you must deactivate the two processor options "CompatibilityForOlderOperatingSystemsEnabled" and "CompatibilityForMigrationEnabled".

Network

We recommend using a Microsoft Windows network.

Net transfer rate of the server: 1 Gbits/s

Net transfer rate of the client computer: 100 Mbits/s

Recommended latency   < 1 ms

Multi-user

With regard to minimum requirements for multi-user operation, please contact EPLAN Support. We can advise you specifically according to your individual requirements.

Software Requirements EPLAN Platform

In the current Version 2024 the programs of the EPLAN platform are available as a 64-bit version.

Please observe the notes in the information portal (EPLAN Software Requirements).

Licensing Overview

✓ Standard functionality   O Optional   - Not available

EPLAN Electric P8	Compact	Select	Professional
Schematic pages	40 max.	Unlimited	Unlimited
EPLAN Assembly Reports	✓	✓	✓
EPLAN Article Reports	✓	✓	✓
EPLAN Graphical Reports	-	-	✓
EPLAN Interfacing	✓	✓	✓

Licensable Elements	Compact	Select	Professional
Compact+	O	✓	✓
EPLAN Mounting Panel			
EPLAN Overview Reports			
EPLAN Multiuser			
EPLAN Single Line			
Select+	-	O	✓
EPLAN PLC & Bus Extension			
EPLAN Netbased Wiring			
EPLAN Single Line			
Collaboration	-	O	✓
EPLAN Revision Management			
EPLAN Project Management			
EPLAN Change of Standard			

EPLAN Multi Language Translation			
Professional+	-	O	O
EPLAN Multiuser Management			
EPLAN Multiuser Monitor	* Requirement is the "Select" module package		
EPLAN Project Options			
EPLAN Project Reference			
EPLAN User Rights Management			
3D Panel Layout	O	O	O
EPLAN Pro Panel (Add-on)			
STEP Import			
STEP Export			
Ultimate*	-	-	O
EPLAN FieldSys			
EPLAN Fluid (Add-on)			
EPLAN Preplanning Professional (Add-on)	* Requirements are the module package EPLAN Electric P8 Professional and the Elements "Professional+"		
EPLAN Pro Panel (Add-on)			
STEP Import			
STEP Export			

Licensable add-on systems and modules	Compact	Select	Professional
FieldSys	-	O	O
Fluid Compact (Add-on)	O	-	-
Fluid (Add-on)	-	O	O
Pro Panel Professional (Add-on)	-	O	O
Preplanning Professional (Add-on)	-	O	O
Cogineer	-	O	O
Cogineer Advanced	-	O	O
API Runtime	-	O	O
Licensable extensions			
EPLAN ERP/PDM Integration Suite**	-	O	O
EPLAN Cloud			
EPLAN Data Portal*	✓	✓	✓
EPLAN eVIEW Free	✓	✓	✓
EPLAN eMANAGE	O	O	O
EPLAN eSTOCK*	✓	✓	✓
EPLAN eBUILD	O	O	O

* Only for Subscription licenses!

** Only incl. associated services

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