Performance Description

Contents: Eplan Preplanning 2026
Status: 08/2025

FRIEDHELM *L O H* GROUP

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Introduction

Eplan offers Engineering software and service in the fields of electrical engineering, fluid power, automatization and mechatronics. The company develops one of the world's leading software solutions for engineering, plant engineering and enclosure design. Eplan is also the ideal partner for simplifying challenging engineering processes.

Standardized and individual ERP and PLM/PDM interfaces ensure consistent data along the entire value chain. Whether small or large companies, customers can thus use their expertise more efficiently. Eplan aims to keep growing with its customers and partners and furthers integration and automation in engineering. "Efficient Engineering" is our motto.

Eplan was founded in 1984 and is part of the Friedhelm Loh Group.

All from one provider: Eplan Solutions

Eplan supports the user in setting up engineering across multiple disciplines and independent of location. This means increases in efficiency when working on the Eplan project, because digital data flows seamlessly from solution to solution and is enriched accordingly in the project. Eplan Platform offers added value for collaboration in a team, especially when it comes to tasks shared between different locations.

Eplan allows bidirectional exchange with ERP and PLM / PDM systems via interfaces. Through neutral interfaces the Eplan project data can be exchanged with other software environments and further processed.

Extensions for all cases

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

A comprehensive overview of the current extension options is listed in the licensing overview. Should you have any further questions on this topic, please do not hesitate to ask your Eplan contact person.

Eplan Preplanning

Eplan Preplanning allows you to already acquire engineering data in the planning phase. This, for example, includes the actuators and sensors of a plant, a machine or a building. In the process, data can be imported from external tabular sources, and plant or machine overviews, process and instrumentation diagrams or electrical aspects can be graphically represented in the form of single-line schematics. The data collected and enriched via Eplan Preplanning can also be accessed during subsequent engineering phases.

Collaboration apps

Eplan Data Portal

The Eplan Data Portal has direct online access to high-quality product catalogs of notable component manufacturers. Eplan Preplanning, Eplan Electric P8 and Eplan Pro Panel access this Web service equally. Simple transfer of the offered components into the Eplan documentation reduces the required configuration work and increases the quality of the machine and plant documentation. With its Data Standard based on ECLASS Advanced, Eplan Data Portal provides a systematic framework for device attributes.

Parts management – eStock

The parts management eStock can be used to provide Eplan parts data and part-specific macros, images and documents for defined users. By categorizing parts into different "Collections", parts and component data can be made available to different target groups across all locations.

Project viewer – eView

The project viewer allows structured collaboration with colleagues, customers and service providers. This allows project data to be shared, viewed and modifications to be documented via a redlining workflow, independently of the location.

Through the project viewer Eplan project data is available to all project participants along the entire value chain - from engineering to manufacturing and mounting up to service and maintenance. A Free version can be used free of charge after registration.

The project data that are visualized and commented in the project viewer are provided to the user via the data management.

Greenlinings allow the users to directly enter remarks in the documentation and redlinings allow them to initiate a change process with the engineering team. In addition to the visualization of the project documentation in 2D, a visualization of 3D panel layouts from Eplan Pro Panel is also possible.

Data management – eManage

The data management allows the central, cloud-based management of project-relevant data within the Eplan ecosystem, specifically geared to the internal and external collaboration with partners, suppliers and customers at the project level. The project data can be provided in an extended framework with the data management. With the data management the user can furthermore provide Eplan master data with the familiar access control for other users. Different search and filter functions support the user in finding and storing projects and project-specific data and data formats in an organized manner. If required, Eplan projects can be saved in the current version as well as in the project format of older versions and can be made available for defined users.

Note:

Use of merged software products

The Eplan Cloud apps eStock, eManage and eBuild (referred to as Eplan Cloud apps below) are components of module packages of the products Eplan Preplanning, Eplan Electric P8 and Eplan Pro Panel (referred to as Eplan products below). They are licensed with these as a uniform performance unit ("product seat").

The use of the Eplan products including the Eplan Cloud apps is only permitted within the framework of the provided overall functionality and through the number of product seats licensed to this purpose. The division of product seats, consisting of Eplan products and Eplan Cloud apps, between several users or end devices, which is equivalent to a separate licensing of the listed Eplan products and Eplan Cloud apps, is not permitted.

Excepted from this specification is the use of the Eplan Cloud apps mentioned if these are purchased independently of the Eplan products and are licensed separately. They may be used as individual components and independently of the product seats of the Eplan products.

Eplan functionalities

Electrical engineering

Generating electrical schematics

This functionality offers the possibility to create logical links and relationships of automation projects in the form of electrical schematics.

Multi-line

This option offers the possibility to create multi-line schematics as part of the project documentation.

Multi-line representations are used to represent the logical link of the plant elements in detail, so that individual pole positions of an item or part of a plant can be assigned precisely.

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

Single-line

This option offers the possibility to create single-line schematics as part of the project documentation.

This simplifies the creation of plant overviews considerably. Cables, lines, terminal strips and plugs can be defined easily in advance in order to be used later in the detailed schematic. Single-line representations are often used to represent the logical combination of the plant elements simply and clearly and thus also to determine the protection values.

Using pre-defined macros, Eplan Preplanning can be used to create single-line representations that are used, among other things, for graphical pre-planning. This allows the user to create a complete overview very quickly at the start of the project planning and thus facilitate the planning of the parts to be ordered beforehand. If required, the detailed interconnection of items can also be stored in table form in the database in the single-line representation.

Manufacturing data output

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 made available for external applications such as Excel.

Part 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.

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
  Cable properties

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

Overview reports

The automatic overviews provide a rapid and accurate list of the items used in the schematic. The following overviews can be generated in this context:

- Cable / line overview

- Plug overview

- Terminal-strip overview

- Potential & signal overview

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.

Multi-user operation

Multi-user operation 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 "Eplan Multiuser Management" functionalities. 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.

PLC controllers and bus systems

This functionality provides comprehensive support for the user in the management of 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 of 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.

Net-based connections

This functionality 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.

Comments navigator

The comments navigator allows the creation of comments within Eplan Preplanning, Eplan Electric P8 and Eplan Pro Panel. The history of the imported as well as newly created comments can be viewed at any time. A status can be assigned to the comments, and list-based visualization makes it possible to process and prioritize the comments.

Operational sequence sheets

This functionality supports the user in the creation of operational sequence sheets through forms, symbols, etc.

Operational sequence sheets include the functional diagrams (VDI 3260 standard) and GRAFCET diagrams (DIN EN 60848). GRAFCET diagrams are representations of sequential controls in which the specification language GRAFCET (GRAphe Fonctionnel de Commande Etapes/Transitions) has been used.

Process engineering

Process / piping & instrumentation diagrams (P&ID)

Eplan makes extensive editing functions available for the graphical and database-oriented creation of P&IDs – general plant overviews.

- Process and instrumentation diagram

- Piping and instrumentation diagram

- Plant flowcharts

- Instrumentation schemes

- Bundle, plant or controlling schemes

The efficient graphic and macro functions of the Eplan graphical editor support the user in fast and reliable project planning. Autoconnecting can be used to define connections between the items and to automatically report the associated information and process data.

Parallel to the graphical placement of the PCT loops and devices in the P&ID, the planning objects (such as sensors, pumps, containers, etc.) are recorded in the pre-planning navigator and can be managed there in a tree structure. The association of the instruments and automation components to the individual PCT loops is also managed here.

The described functionalities are only available for certain module packages.

Pipings in the pre-planning and in the P&I diagram

In order to take pipings into consideration as early as possible in the engineering process, the user can create planning objects for pipings in the pre-planning. On the basis of this pre-planning several connections on a P&I diagram can be combined into a piping through a piping definition. In the process important information for the pipings such as pipe classes and substances are managed as independent objects in the segment template navigator. The report types Piping overview, Pipe class overview and Substance overview are available for the reporting of the pipings, pipe classes and substances existing in a project.

Planning objects for connections in pre-planning

"Connection planning objects" are available to the user as segments in the pre-planning (piping planning objects, cable planning objects). Connection planning objects define which segments are connected with each other and describe a piping or a cable in the pre-planning. The connection planning objects are managed in parallel to general planning objects, and behave in a way similar to them. External documents / pages, parts and function templates can be stored at a connection planning object, but not PLC addresses or macros.

Collaboration

Revision control

The revision control allows modifications to existing projects to be automatically recorded and documented by means of revisioning. 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.

Project management

The project management offers the possibility of cross-drive project management in a local client / server infrastructure. Project-specific and non-project-specific information can be stored and displayed in the project management. Projects that are provided via the data management 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 overview of the project header data of a project can also be output. If desired, the users who are currently editing a project are displayed.

Change of standard

The 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.

Automatic translation

Automatic translation allows you to output monolingual or multilingual schematic documentation.

The texts within an Eplan project are translated automatically. 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.

Rights management

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

The rights management can be used to block the use of dialogs, menu items, and commands in the user interface.

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.

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 they want to work, or assigning is done centrally by an administrator.

Defining subprojects

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 stored in "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.

Note:

The description of the functional overview always refers to the highest module package. Which functionalities are contained in the different module packages is specified in the associated licensing overview.

Integration

Eplan ERP Integration Suite

Continuous data flows ensure transparency in the product development process. With the Eplan ERP Integration Suite, Eplan manages the integration into existing ERP system landscapes via bill of materials and parts synchronization. Rapid and individual provision of the data takes place in bidirectional exchange with the systems, without the work environment within the Eplan platform having to be left. In contrast to the Eplan ERP/PDM Integration Suite, the Eplan ERP Integration Suite does not have the options for document management.

Add-on systems and add-on modules

Eplan ERP/PDM Integration Suite

Continuous data flows ensure transparency in the product development process. Through the Eplan ERP/PDM Integration Suite, Eplan manages the integration into existing ERP, PDM and PLM system landscapes. This allows working processes from the schematic to the master data to be optimized over the entire value chain. Rapid and individual provision of the data takes place in bidirectional exchange with the systems, without the work environment within the Eplan platform having to be left.

Through the provision of connectors for the most common PDM and PLM system landscapes an integration can be implemented rapidly.

Eplan API Extension

The optional Eplan API Extension extension module allows you to control Eplan externally through a programming interface or to extend and customize it customer-specifically. The program functions available in Eplan are structured in modules. They can be addressed directly from other programs through the programming interface. It is also possible to integrate customer-specific extensions into the Eplan user interface.

In principle only a text editor and a ".NET" compiler are required for this functionality. For development support, we recommend an integrated development environment such as "Visual Studio".

Languages supported by .NET can be used as programming languages. The code can be directly loaded, compiled, and executed in the system as a script.

Hardware and software requirements for Eplan

Please observe the notes in the information portal (Software and hardware requirements). These requirements are only available in English.

Licensing overview

	Eplan Preplanning Stand Alone	Eplan Preplanning Add-on
International page limitation	No	No
Concurrent license	Yes	Yes
Collaboration apps		
Eplan Data Portal	X	-
Parts management - eStock	X	-
Project viewer - eView	X	-
Data management - eManage	X	-
Electrical engineering		
Electrical engineering schematic generation	-	-
Multi-line representation	-	-
Single-line representation	X	-
Manufacturing data output	X	-
Part assemblies	X	-
Function-related reports	X	X
Overview reports	X	-
Graphical reports	-	-
Harness proD extensions	X	-
Configuration of PLC controllers/bus systems	X	-
Net-based connections	X	-
Comment navigator+	X	-
Operational sequence sheets	X	X
Importing and synchronizing pre-planning data	X	X

Process engineering		
P&I diagrams	X	X
Process / piping & instrumentation diagrams (P&ID)	X	X

Collaboration		
Revision control	X	-
Project management	X	-
Change of standard	X	-
Multilingual translation	X	-
Rights management	X	-
Multi-user operation	X	-
Multi-user management	-	-
Multi-user monitor	-	-

ERP integration		
Eplan ERP Integration Suite	X	-

Add-on systems and add-on modules		
Eplan ERP PDM/PLM Integration Suite	Optional	-
Eplan API extensions	Optional	-
Language package (All)	Optional	-
Eplan Preplanning add-on	-	-
Eplan Pro Panel add-on	-	-

X Standard functionality   Optional (fee-based)   - Not available

Errors and changes reserved.