# Performance Description

Contents: EPLAN Smart Wiring 2022
Status: 08/2021

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The described functionalities are only available for certain module packages.
See the "Overview of Functions" chapter.

# Introduction

EPLAN offers Engineering software and service in the fields of electrical engineering, automation 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. Working with EPLAN means unrestricted communication across all engineering disciplines. Whether small or large companies: Customers can 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.

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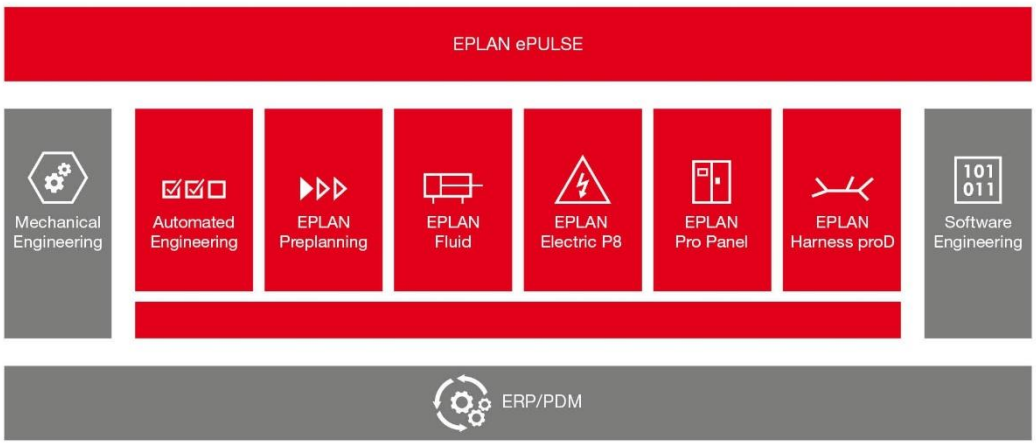
# All from one provider: EPLAN Solutions




EPLAN supports you with establishing your engineering across multiple disciplines. The basis is formed by the EPLAN platform that interconnects our software solutions. For you this means a clear increase in efficiency when it comes to working on your EPLAN project. Since your digital data flow seamlessly from solution to solution and are enriched further in every process step. The Cloud products of EPLAN offer added values for collaboration in teams - in particular for tasks across all your locations.

Together the EPLAN Platform and the supplementary Cloud applications form EPLAN Solutions - or, in other words: the key for your future-oriented engineering.

EPLAN offers a comprehensive framework for your daily work. This way interfaces allow the bidirectional exchange with ERP and PDM systems. With the connection to mechatronic processes you expand your view to a mechatronical engineering perspective. With neutral interfaces you can transfer the EPLAN project data into other software environments and continue working on them.

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## Extensions and modules for all cases

No matter to what extent you are already working with EPLAN solutions in your 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 your tasks.

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

You can find a comprehensive overview of the current extension modules 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 you configure your electrical design for machines and plants in an engineering system consistently, coherently and quickly. The software supports diverse engineering methods: from manual creation to standardized and template-based work. EPLAN Electric P8 automatically creates detailed reports for you as an integral part of the project documentation - if desired continuously or bundled after project completion. This way you supply the downstream process steps with all required information from the engineering process.

## EPLAN Fluid

EPLAN Fluid is your engineering tool, especially for the configuration and automated documentation of circuits of fluid-power plants in the fields of hydraulics, pneumatics, cooling and lubrication.

## EPLAN Preplanning

EPLAN Preplanning allows you to already acquire engineering data in the pre-planning phase. This, for example, includes the actuators and sensors of a plant, machine or a building. You can import data both from external tabular sources as well as plant and machine overviews and furthermore graphically acquire process and instrumentation diagrams. You can also access data that have been collected and enriched in EPLAN Preplanning for downstream planning phases in the engineering.

## EPLAN Pro Panel

With EPLAN Pro Panel Professional you conceive and design control system enclosures, switchgear and power distribution systems for the energy supply in 3D. This way you can solve diverse engineering tasks in one software: from the electrical schematic creation through the planning of the mounting layout in 3D to the virtual routing of connections. A variety of data and information for the manufacturing are provided in an automated way - from the component labeling to the support of manual wiring processes.

## EPLAN Smart Wiring

EPLAN Smart Wiring is your virtual assistant for manual wiring in the enclosure production. From the connecting point to the exact routing track, the software provides you - as the wirer - with all the required information in digital form - if necessary, also in 3D. You can note the status of the wiring with the traffic light principle. If you need to reassure yourself, you can call up the electrical schematic and counter-check it - on the basis of each individual connection. The provision of the project data on a central server makes it possible to manufacture many identical enclosures in parallel or work together with several wirers.

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## EPLAN Harness proD

Use EPLAN Harness proD for the efficient design and documentation of cables and wire harnesses. With the software you digitize the typical work processes in cable and wire harness design: From the importing of the connection information as well as the 3D panel layout from the EPLAN Platform through the intuitive routing up to the creation of manufacturing documentation. The software is open for MCAD systems and can in this way be seamlessly integrated into existing system landscapes.

## EPLAN Cogineer

With EPLAN Cogineer you gain the full potential from your engineering in a short time as well as increase the quality of your electrical and fluid-power documentation. You use the switching templates you have already created to structure a macro library and with EPLAN Cogineer realize the automatic schematic creation at the push of a button. Profit from the innovative methods with added value in engineering without long implementation - in all industries and in companies of all sizes.

## EPLAN Engineering Configuration (EEC)

With EPLAN Engineering Configuration (EEC) you illustrate your product portfolio in a modular system with interdisciplinary function units. On this stable basis, EEC becomes your tool for the design and application of configuration user interfaces as well as the automated creation of documentations. The interdisciplinary working method integrates sales, order processing, mechanical engineering, electrical engineering and control technology as well as production and documentation.

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## EPLAN ERP/PDM Integration Suite

Continuous data flows ensure transparency in the product development process. Through the EPLAN Integration Suite, EPLAN manages the integration into existing ERP, PDM and PLM system landscapes. You can optimize your work processes from the schematic through to the master data. The quick and individual provision of the data takes place in bidirectional exchange with the systems, without you having to leave the work environment within the EPLAN platform.

## EPLAN eVIEW Free

EPLAN eVIEW Free lets you implement engineering review processes digitally. This free software allows structured collaboration with co-workers, customers and service providers. It enables you to view and comment on changes to a project through redlining workflows by using a browser and irrespective of your location.

## EPLAN eBUILD Free

New methodology for your engineering process: With EPLAN eBUILD Free you have the possibility to compile schematics from template libraries with a few clicks. Registered users have this application automatically available as a free service. eBUILD Free offers you predefined libraries and a configurator that allows you to create parts of schematic projects in EPLAN practically at the click of a button.

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## EPLAN eBUILD

With EPLAN eBUILD you create your own template libraries which can be re-used by employees and colleagues within the EPLAN Cloud environment. This way you can automatically create schematics in EPLAN across the company. eBUILD is composed of two functional areas which are available to you completely in the full version: In Designer experienced users create their own template libraries on the basis of the EPLAN macro technology. In Project Builder they can then be used repeatedly at any time to compile elements of schematics which are frequently used in day-to-day work with a few clicks.

## EPLAN Data Portal

With the EPLAN Data Portal you have direct online access to high-quality product catalogs from a continuously growing pool of notable component manufacturers. All the solutions anchored in the EPLAN platform 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.

## EPLAN eMANAGE Free

EPLAN eMANAGE Free is your Cloud application for collaborations across all your projects and locations with colleagues, partners, suppliers and clients. eMANAGE enables you to share EPLAN projects with selected project partners across all teams and across the company in a protected Cloud environment. The solution enables simple uploading of projects from the EPLAN Platform or via web browser.

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## EPLAN eMANAGE

Beyond the functions of the free version, the full version of EPLAN eMANAGE offers you practical, functional extensions as well as additional storage for your data. Share project data via eMANAGE at an extended scope - with familiar access control and the same ease of use. Make your master data available with eMANAGE from the EPLAN Platform 2022 and thus make their usage easier for other users. With a click you make current EPLAN projects available in earlier Platform versions as well. This way you allow project partners who do not yet use the current EPLAN version access to the project data you provided in the Cloud.

**Note:**

The properties and functionalities specified in this performance description are based on the maximum scope of performance of the product including all extension modules, Elements and add-ons. Extension modules, Elements and add-ons are available optionally and separately and as a rule cost an additional fee. For further details of the available product variants please refer to the "Licensing Overview" chapter.

# EPLAN Smart Wiring

EPLAN Smart Wiring is a browser-based application with a central web server that supports the process of manual enclosure wiring in an efficient manner.

EPLAN Smart Wiring consists of three components:

- EPLAN Smart Wiring Server
- EPLAN Smart Wiring Application
- EPLAN Smart Wiring Monitor

The provision of project data on a central server allows for multiple users to access the project data file at the same time– either to work on the basis of a project on multiple (identical) enclosures or together on an enclosure line up.

The application makes the wiring information coming from the planning available to the user in digital form as a project file. Here the software is able to visualize the routing track of each connection to be wired from the source to the target in the enclosure as a 3D graphic.

The user specifies whether they want to wire the displayed routing connections individually or in a fixed sequence, routes the real wire between the items in the enclosure and then acknowledges the wiring status in the application. If particularities occur during the wiring, colleagues in manufacturing, the processing preparation or the electrical design can be informed about this via e-mail from the application.

The described functionalities are only available for certain module packages.
See the "Overview of Functions" chapter.

# Installation and license type

Only the **EPLAN Smart Wiring Server** on a Windows-based work computer is required for installation. The **EPLAN Smart Wiring Application** and the **EPLAN Smart Wiring Monitor** can be called up via a browser.

EPLAN Smart Wiring is only available as an EPLAN network license.

# User Interface

Settings can be used to individually adjust the user interface and the program behavior in EPLAN Smart Wiring according to your needs and the working method of the user.

The representation of the connection list can be adjusted to specify whether source and target or the connection designation of the routing connections to be wired is to be displayed. In addition you can specify whether bundles or daisy chains are to be wired.

The output data can be specified, the font size and font selected for the printout of connection properties for labeling wires.

When a wiring project is finished, a special check mode can be activated for the quality control. In this mode you can document the result of the check at each routing connection listed in the connection list.

The software has been optimized for touch input to allow its usage on mobile devices and touch supported monitors.

# Workflow & Integration

The system can be configured by means of settings to meet the needs of the user, company, and project. Dedicated filtering and sorting functions ensure clarity and clear structures in the project editing. The integrated report system allows messages to be drafted for the connections and to be sent by e-mail as well as status reports of the project editing status to be generated.

EPLAN Smart Wiring Monitor provides information, if required, about the status of every EPLAN Smart Wiring project being processed.

# Method

EPLAN Smart Wiring supports various working methods in manual enclosure wiring.

- This means that multiple users can edit different project instances of the same project file.
- The work on project instances that has already begun but not yet been completed can be continued.
- Several users can work simultaneously on the same project instance.

The work method changes frequently or is combined between individual projects but also during the project phases. Any editing sequence is possible.

Editing of a project is logged in the system so that one can always follow the actual course of the project.

# EPLAN Smart Wiring Monitor

With the objective of quality assurance and quality optimization the EPLAN Smart Wiring Monitor allows access to current data of the EPLAN Smart Wiring projects in manufacturing in order to obtain an overview of the project status and the manufacturing progress.

In the context of the utilization of the EPLAN Smart Wiring Monitor project-specific data on and in the system of the respective customer are acquired, stored and processed. In combination with other systems and data of the customer and independently of EPLAN Smart Wiring Monitor, these data can be used to generate data that could be related to persons as well as person-specific and personal-performance-related data.

The described functionalities are only available for certain module packages.
See the "Overview of Functions" chapter.

# Hardware Requirements

## Recommended Workstation Configuration

| | |
|---|---|
| Processor: | CPU not older than 3 years |
| RAM: | 4 GB *1 |
| Hard disk: | 64 GB |
| Monitor / graphics resolution: | Screen / display with a resolution of min. 1280 x 800.<br>Recommendation: Touch screen |

## 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 |

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See the "Overview of Functions" chapter.

# Software Approvals

In the current Version 2.9 the EPLAN Smart Wiring program is available as a 32-bit version.

## Operating Systems

EPLAN Smart Wiring supports the 32-bit and 64-bit variants of the Microsoft operating systems Windows 8.1 and Windows 10.
The EPLAN Smart Wiring user interface language installed must be supported by the operating system.
Internet Explorer 11 or Microsoft Edge is required to use EPLAN Smart Wiring.

The program is identified by EPLAN as compatible in accordance with the requirements specified in this performance description on the following operating systems:

### Workstation

- Microsoft Windows 8.1 (64 bit) Pro, Enterprise
- Microsoft Windows 8.1 (32 bit) Pro, Enterprise
- Microsoft Windows 10 (64 bit) Pro, Enterprise
- Microsoft Windows 10 (32 bit) Pro, Enterprise

### Server

- Microsoft Windows Server 2012 (64 bit)
- Microsoft Windows Server 2012 R2 (64 bit)
- Microsoft Windows Server 2016 (64 bit)

# Overview of Functions

✓ Standard functionality O Optional − Not available

| **Setup** | |
|---|---|
| Installation of the server on the Windows-based work computer | ✓ |
| Access via browser (only for application and monitor) | ✓ |
| **Method** | |
| Wiring on the basis of wiring lists and 3D visualization of the installation environment including routing tracks.<br>Precondition: EPDZ export from EPLAN Pro Panel Professional incl. 3D layout space and 3D connection information | ✓ |
| Wiring on the basis of wiring lists in MS Excel format | ✓ |
| **User Interface** | |
| Browser user interface (application & monitor) | ✓ |
| Vertical view/display (only for import from MS Excel format) | ✓ |
| Touch-optimized user interface and operation | ✓ |
| Mouse- and keyboard-supported operation | ✓ |
| Configurable user interface for list view and detailed information | ✓ |
| Sorting of the wiring list | ✓ |
| Search within the wiring list | ✓ |
| Filtering within the wiring list | ✓ |
| Display of symbols for the connection status instead of only color for better recognition (can be deactivated) | ✓ |
| Search criteria and filters | |
| Connections in an enclosure | ✓ |
| Cross-enclosure connections | ✓ |
| Connections per (EPLAN) mounting site | ✓ |
| Connection types (wires, cables, hoses, jumpers) | ✓ |
| Connection point designation Source/Target / Only source / Only target | ✓ |
| Connection designation | ✓ |

The described functionalities are only available for certain module packages.
See the "Overview of Functions" chapter.

| | |
|---|---|
| Tool identification (on connecting point) | ✓ |
| Torque (on connecting point) | ✓ |
| Color | ✓ |
| Cross-section | ✓ |
| Material designation | ✓ |
| Display of the required conductor termination processing | ✓ |
| Comments on the connection | ✓ |
| Bundle association | ✓ |
| Conductor chain association | ✓ |
| Wiring status per connection | ✓ |
| Routing track description in text form (at MS Excel-based data) | ✓ |
| Show connections to a device | ✓ |
| Further information about wiring | |
| Display routing direction from connection point | ✓ |
| Display of the general installation direction source / target | ✓ |
| Visualization of the installation environment | |
| 3D graphic of the mounting layout from EPLAN Pro Panel Professional | ✓ |
| Selection of the 3D layout space to be edited<br>Precondition: The EPLAN EPDZ file contains more than one 3D layout space. | ✓ |
| Detailed view connecting point source<br>(provided a corresponding connection point pattern is available in EPLAN Pro Panel Professional) | ✓ |
| Detailed view connecting point target<br>(provided a connection point pattern is available in EPLAN Pro Panel Professional) | ✓ |
| Highlighting of the selected black or gray wire for better recognition | ✓ |
| View routing track | ✓ |
| Zoom view in / out | ✓ |
| Rotate / Flip view | ✓ |
| Move view | ✓ |
| Rotate view by 90° | ✓ |

The described functionalities are only available for certain module packages.
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| | |
|---|---|
| Display all | ✓ |
| Display / hide components by means of 3D Clip layer | ✓ |
| Full screen display | ✓ |
| Make objects transparent | ✓ |
| Reference to schematic | |
| Display connections in schematic | ✓ |
| Navigate in schematic | ✓ |
| Project Editing | |
| User login | ✓ |
| Loading and starting a project | ✓ |
| Index management for project versions | ✓ |
| Continuing project editing with the last project state | ✓ |
| Updating a project including synchronization and representation of the modifications | ✓ |
| Status processing of the connections in groups | ✓ |
| Make projects available centrally | ✓ |
| Multi-user access to projects | ✓ |
| Simultaneous editing of several instances of a project | ✓ |
| Open projects with QR code support | ✓ |
| Editing of cables on the basis of MS Excel-based data import | - |
| Installation modes | |
| 'Single wiring' installation mode:<br>Wiring in any sequence | ✓ |
| 'Sequential wiring' installation mode:<br>Wiring in an defined sequence | ✓ |
| 'Conductor chain' installation mode:<br>Wiring of conductor chains | ✓ |
| 'Wire terminal' installation mode:<br>Wiring based on Rittal Wire Terminal WT<br>Prerequisite: EPDZ export from EPLAN Pro Panel Professional and CSV export from Rittal Wire Terminal WT | ✓ |

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| | |
|---|---|
| Check | |
| Check mode for installed connections | ✓ |
| Logging | |
| Marking of individual connections | ✓ |
| Save comments for connections | ✓ |
| Send comments about connections via e-mail | ✓ |
| Save comments about the project | ✓ |
| Generating a manufacturing record for the entire project | ✓ |
| Display of wiring status per connection | ✓ |
| Check mode for logging quality checks | ✓ |
| Outputs | |
| Print connection properties<br>(additional printer software and hardware required) | ✓ |
| 'Wire Station' output mode:<br>Export of connection information at the Rittal Wire Station with Rittal semi-automated machines for the wire fabrication. | ✓ |
| Administrative settings | |
| Access through application | ✓ |
| Access through monitor | ✓ |
| Access-code-restricted access to administrative settings | ✓ |
| Working directory can be set | ✓ |
| Storage management/optimization (cleaning project instances) | ✓ |
| Management of the display of the columns of the connection properties | ✓ |
| Optional utilization of the Windows login | ✓ |
| EPLAN Smart Wiring Monitor | |
| Overview of the current status of all EPLAN Smart Wiring projects | ✓ |
| Overview of the progress of an instance of the project | ✓ |
| Overview of the comments from within an instance of the project | ✓ |
| Installation statistic of an instance of the project | ✓ |

The described functionalities are only available for certain module packages.
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