# Preface

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Dear Users,

EPLAN Electric P8 is CAE software that is constantly being further developed. It offers innumerable project editing options and provides new innovations with each new version.

Version 2.5 is the result of continual development of previous versions. This version once again incorporates a wide range of user requirements and requests that have arisen during the practical use of EPLAN.

This fourth edition of this book has been revised and expanded based on Version 2.5 to demonstrate the wide range of functions in EPLAN Electric P8. The book is meant to make it easier to start using the software and to smoothly guide you around initial hiccups when working with EPLAN Electric P8. Numerous practical examples show you what is possible with Version 2.5.

Of course, like its predecessors, this edition cannot and will not describe all of the software’s functions or provide examples for every conceivable function. EPLAN Electric P8 becomes increasingly comprehensive with every new version, as it does with this one, and it offers a variety of functions that cannot be completely covered in a single book. A book that describes all the functions would have thousands of pages and be impractical for the reader.

In Version 2.5, there are also many ways to reach the same goal. I will present and discuss some solutions. Others you will discover yourself and ask yourself why no one has ever tried it this or that way before.

This book will recommend solution approaches and demonstrate solutions that will help simplify your everyday work. It will help you make necessary decisions.

The book is addressed to everyone who uses EPLAN Electric P8 for electrical engineering designs – both daily and sporadic EPLAN Electric P8 users as well as engineers, electrical engineers, pupils and students.
I would like to express my thanks to Julia Stepp and her team at the Carl Hanser Verlag for the opportunity to write and publish this book. I would also like to sincerely thank my family, especially my wife Susanne. They have always been, and continue to be, very patient with me.

I would also like to thank all of the readers who have made this book a success. All feedback, whether criticism or praise, has always been a strong motivator for me to revise this book.

And finally, I would again like to thank EPLAN Software & Service GmbH & Co. KG for their consistent and very friendly support and collaboration in compiling some of the information for this edition of the EPLAN Electric P8 Reference Handbook.

**Important notes**

All of the examples and explanations assume local installation and local operation of EPLAN. Furthermore, the book assumes that the user has all of the user rights in EPLAN and is logged in as the local administrator.

It is possible that, depending on the user's license and module package, certain functionality or a certain function described in the book will not be available or executable in the way in which it is explained and illustrated. Therefore, you should always check to see which licensed add-ons you have (via HELP / ABOUT / LICENSED ADD-ONS TAB).

For this book, EPLAN Electric P8 Professional Edition 2.5 was used.
NOTE for users of previous versions: Certain parts of the functions described here may exist in EPLAN Electric P8 Versions 1.7 to 1.9 and 2.0 to 2.4, but their use, settings and range of functionality may differ from the current Version 2.5.

The examples used in the book are available as an EPLAN Electric P8 project at www.eplan-efficient-engineering.com/handbook.

Some of the settings used in this book, such as those for filters or schemes, differ from the standard EPLAN installation. All of this additional data is available in the sample data. In addition, some custom, non-standard shortcut keys were also used.

The following text boxes are used to visually highlight notes, tips, etc.

NOTE: This box contains important notes that should be observed when using EPLAN Electric P8.

TIP: This box contains helpful tips for everyday working with EPLAN Electric P8.

This box provides additional information and tips.

Whenever this symbol appears in the book's margin, you will find questions and answers to problems that occurred during actual use of EPLAN Electric P8.
After you set all the required information and click **INSTALL**, the Windows Installer prepares the required components and the actual installation begins.
NOTE: EPLAN does not replace your system master data. If you would like to work with EPLAN’s new system master data at a later date, then you must synchronize this data.

By design, EPLAN does not overwrite user-related master data because the user may have modified the original system master data and saved this under the original name assigned by EPLAN. During installation, EPLAN does not recognize whether this data has been changed on purpose and would therefore simply replace it. Usually the user does not want this to happen.

Once installation is complete, EPLAN displays the completion dialog. Here, you have to click FINISH. Installation of EPLAN Electric P8 is now complete.

EPLAN Electric P8 can now be started from the Start menu or the desktop icon.

If a license has not yet been installed, a dialog prompting or requesting a selection of the appropriate license is displayed before the program starts.
- **Pages**: Defines the handling of pages. What combinations of letters and page names are allowed for subpages? How should paths be numbered: by page, by project or by structure identifier? The most important parameter in these settings is the definition or (subsequent) changing of the global plot frame for the project. A separate plot frame can be defined for every page in the page properties independently of the global plot frame setting. The page settings always have priority over the global project settings.

- **Symbol libraries**: Defines the symbol libraries used in this project. New entries (addition) of symbol libraries are automatically stored in the project after the setting is saved.

### 2.3.1.9 Setting Projects [project name]/Translation

This setting defines the databases to be used for translation or the scope of translation that EPLAN should use.

- **General**: This is where you enter project language settings, settings defining the handling of texts when translating during data entry. Settings for displaying translation languages (displaying translations in the project) are also configured here. You also have to define a source language here.

![Fig. 2.25 Translation](image)

- The definition of a **source language** is crucial, because this is the **first** language EPLAN displays in the various dialog boxes. This helps to prevent operating errors, e.g. entering English in the wrong “language line” by mistake.
If the sequence of the displayed languages is changed in the settings, the source language will still be shown first in the dialogs.
3.2 Creating a new project

- **Storage location** selection field: Specifies the storage location of the new project. Any storage location can be selected using the button.
- **Template** selection field: You select a template using the selection button. The usual range of templates and basic projects are available for selection.
- Input field/selection field **Specify creation date**
- Input field **Specify creator**

![Create project dialog](image)

**Fig. 3.9** Create project dialog

You can, but do not have to, fill in the information under **Specify creation date** and **Specify creator**.

**NOTE:** These fields cannot be changed later on. It is therefore very important to make sure you enter the correct data.

After defining the above entries, you need to select a template. This can be a project template or a basic project.

You simply click the More button. In this example, the **Select project template/basic project** dialog opens, and the basic project **Handbook.zw9** will be used to create the new project. You can select the relevant project type in the **File type** field.
In the **Select project template/basic project** dialog, you now press the **OPEN** button and select and use an existing basic project as your template.

EPLAN then returns to the **Create project** dialog and imports the selected basic project (or the template project) into the **Template** field.

Now, you only have to confirm this dialog by clicking **OK** and EPLAN will generate the new project in the specified directory.

The new project is created from the selected basic project. This may take a while depending on the hardware and the storage location (server, local).
Once EPLAN has successfully generated the data for the new project, the **Project properties** dialog is displayed. You do not necessarily need to edit these at the moment. This can be done later during project editing.

EPLAN opens the **Project properties** dialog with the **Properties** tab. The project properties can now be adjusted or completely changed on the **Properties, Structure** etc. tabs.

There is one limitation: The *structure of the pages*, located in the **Structure** tab, can no longer be changed (grayed out). It is fixed because the page structure was defined in the basic project.

When you click **OK**, the project properties are saved and the project is immediately opened in the page navigator (it can also be opened using the **F12** key or you can display the overview with the **PAGE/NAVIGATOR** menu item). The project can now be edited.
A typical example of changing the Connection point logic is the enabling of the Allow same connection point designation setting when using device connection points (here PE). This makes it possible, like with terminals, to use the same designation several times (PE rail), and the check run will not find any duplicate connection point designations.
4.8.5 Parts tab

On the Parts tab, you can assign one or more parts to a symbol. Click the Part number field and then use the button that appears to switch to parts management.

In parts management, you select the necessary part and click OK to apply it to the symbol. Parts management automatically closes after the part is applied.

In addition to simple part selection, this dialog also has a DEVICE SELECTION button. In contrast to simple part selection, this will offer only devices for selection that fit the existing functions of the symbol in the project. This ensures that EPLAN selects, for example, a coil for a coil rather than a motor overload switch. DEVICE SELECTION is the preferred method.

Fig. 4.156 Device selection

Fig. 4.155 Simple part selection
5.2.5.2 Disable

The protection is easily disabled again by selecting the objects and then clicking the PROJECT DATA/DEVICES/DISABLE DEVICE PROTECTION menu.

5.2.6 Import (device data)

The IMPORT function in the device navigator allows for external data lists to be imported in EPLAN.

An import scheme must be used in EPLAN in order to import the data. EPLAN data fields and external data fields are assigned in this scheme.
A default import scheme can be configured in the settings under OPTIONS/SETTINGS/PROJECTS/[PROJECT NAME]/DEVICES/IMPORT.

After selecting IMPORT, EPLAN opens the IMPORT DEVICE DATA dialog. Here, the type of data source, the data source itself and, of course, the import scheme (field assignment) are configured.
Here you should select/enter the full DT (the terminal strip designation), the numbering pattern and the setting defining whether or not these are multi-level terminals.

It is also possible to select a different function definition instead of the default terminal. Just click the button. EPLAN switches to the FUNCTION DEFINITIONS dialog where you can select a different terminal and apply it by clicking the OK button.

However, this is not a precondition. All function definitions can be easily changed later using block editing in the terminal strip navigator.

We return once more to generation of the functions: The functions can only be generated when all entered data is correct (EPLAN will enable the OK button). If an error exists in the numbering pattern, e.g. a missing comma, then the OK button is not enabled. You must check for this. When the OK button is clicked, EPLAN generates a terminal strip according to the specified options.

![New terminal strip with placed and unplaced terminals](image)

**Fig. 5.88**  New terminal strip with placed and unplaced terminals

**NOTE:** The newly created terminals do not have any parts data. This data must (can) be assigned later using device selection.

### 5.3.6 New terminals (devices)

In addition to the easy generation of new terminal strips and new terminals, it is also possible in the terminal strip navigator popup menu to generate new terminals as devices on the basis of existing parts and their function templates.

Start the NEW TERMINALS (DEVICES)… menu entry from the popup menu.
Fig. 5.89 Generate terminals (devices) dialog

EPLAN opens the **GENERATE TERMINALS (DEVICES)** dialog. The entries are similar to the previous section. You need to select a DT, a numbering pattern, and, most importantly, a part (the device) from parts management.

When all entries are correct, you can start device generation by clicking the **OK** button. EPLAN saves the functions in the navigator as unplaced functions.

Fig. 5.90 Generated, new terminals (devices)
In contrast to the last section, these new terminals are real devices. They already have parts data.

Fig. 5.91 Terminal parts data

Fig. 5.92 Function template of the terminal part

5.3.6.1 Main terminals/Auxiliary terminals

It is important to know that, in addition to the generation of terminals or of terminals as devices, EPLAN has introduced new terminal functions and a new term in Version 2.0 – the **Main terminal**.

What is a main terminal? It is comparable to a main function; a terminal with multiple function definitions can only be identified once as a main terminal. All of this terminal’s other functions cannot be designated as main functions. These are so-called **auxiliary terminals**.
If all of the settings were properly selected, EPLAN can now generate the assignment list. Use the EXTRAS button in the ADDRESSES/ASSIGNMENT LISTS dialog to select EXPORT ASSIGNMENT LISTS. In the EXPORT ASSIGNMENT LISTS dialog, you can check the settings once more and adjust the settings if necessary. Depending on the existing CPUs (there might be several controls in the project), select the correct option before an export in the ADDRESSES/ASSIGNMENT LISTS dialog.

![CPU filter](image)

**Fig. 5.152** CPU filter

You then simply confirm this dialog with OK. EPLAN generates the assignment list in the desired PLC software format and saves it in the specified directory.

### 5.6.5 Address

EPLAN allows simple addressing or readdressing of PLC terminals via the ADDRESS function in the PROJECT DATA/PLC menu. The functions in the logical PLC overview and the functions in the schematic for the PLC terminals in distributed view will be readdressed or addressed for the first time.

**NOTE:** In order for all PLC functions to be addressed, it is sufficient to select the PLC card in the PLC navigator (but it should no longer have any messages from message management, that is, it must be “error-free”). This ensures that all of the functions, those of the logical PLC overview and the PLC functions represented in distributed view, are included and subsequently addressed.

In the PLC navigator, you select the card to be addressed. Then you call up the ADDRESS function in the PROJECT DATA/PLC menu.
EPLAN now opens the **READDRESS PLC CONNECTION POINTS** dialog.

**Fig. 5.153** Selecting the card to be addressed and calling up addressing

**Fig. 5.154** Defining start addresses
In the **Digital start address** and **Analog start address** fields, the new address is entered *without* a prefix. EPLAN obtains the relevant prefix, meaning whether an entry begins with E or with I, according to the selected scheme, which is entered in the *PLC-specific settings* selection field. It is possible, however, to enter a prefix in the start address entry field, an “IX” for example. EPLAN would then use this primarily during addressing, and ignore the setting of the *PLC-specific settings* scheme.

I recommend leaving the *Preview of result* parameter switched on. When you click **OK**, the **ADDRESS PLC CONNECTION POINTS/PREVIEW OF RESULT** dialog is displayed, and you can use the **CANCEL** button to stop the process if necessary.

Fig. 5.155 Checking readdressing

If the result is correct, you click **OK** to confirm the **ADDRESS CONNECTION POINTS/ PREVIEW OF RESULT** dialog and EPLAN readdresses the PLC functions of the selected cards in the entire project.

**5.6.6 New**

As in the other navigators, new devices with a function definition can also be created in the **PLC navigator**. The **NEW...** item in the popup menu is used for this.

EPLAN opens the **FUNCTION DEFINITIONS** dialog. In the PLC navigator you can only select PLC function definitions. After applying the function definition by clicking the **OK** button, EPLAN opens the **PROPERTIES (COMPONENTS) PLC BOX** dialog. Here you must make the desired entries and save the properties. You can also immediately perform a *device selection* for the new PLC card.
Now, select all elements using the mouse, then close this action with the second clicked point. All objects are assigned to this macro box now.

![Fig. 5.193 Assigning exterior objects to the macro box](image)

To verify, you can call the popup menu of the macro box and click the **SELECT ASSOCIATED OBJECTS** menu item. EPLAN selects the corresponding objects.
Fig. 5.194 All objects associated with the macro box

This assignment can be broken up again by calling the popup menu of the macro box and selecting the DISCARD MANUAL ASSIGNMENT menu item.

5.8.3.2.4 Ignore macro box when inserting on mounting panel

The IGNORE MACRO BOX WHEN INSERTING ON MOUNTING PANEL option ensures that the macro box will be ignored when placing such a macro (Panel layout representation type).

5.8.4 Macro navigator/Generate automatically

Once the macros and corresponding data, such as macro name, have been assigned and/or entered, go to the PROJECT DATA/MACROS menu and click GENERATE AUTOMATICALLY.
The dialog is divided primarily into the Reports and Templates tabs, and the right part, which contains the report data, e.g., from which page the report should be generated, which filter and sorting settings should be used, and much more.

The Reports tab is usually empty before reports are generated from the project data for the first time, i.e., there are no entries, and the Templates tab is also usually empty.

![Fig. 6.79](image1) Left area with tabs

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Cable overview with part list</td>
</tr>
<tr>
<td>Start page of report block</td>
<td>Example=Chapter + 06.3.3/10</td>
</tr>
<tr>
<td>Supplementary field: Sheet no.</td>
<td>1</td>
</tr>
<tr>
<td>Source project</td>
<td></td>
</tr>
<tr>
<td>Filter setting</td>
<td>Cable typ</td>
</tr>
<tr>
<td>Sort setting</td>
<td></td>
</tr>
<tr>
<td>New page if property is changed</td>
<td></td>
</tr>
<tr>
<td>Functions: Filter setting</td>
<td></td>
</tr>
<tr>
<td>Functions: Sort setting</td>
<td></td>
</tr>
<tr>
<td>Functions: New page if property is changed</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td>General</td>
</tr>
<tr>
<td>Manual page description</td>
<td></td>
</tr>
<tr>
<td>Automatic page description</td>
<td>Check (✓)</td>
</tr>
<tr>
<td>Page sorting</td>
<td>From settings</td>
</tr>
<tr>
<td>Form</td>
<td>HBE_F10_003_FF1</td>
</tr>
</tbody>
</table>

![Fig. 6.80](image2) Right area with additional information

**NOTE:** If the project was copied with the Copy with reports option, then the old reports will, of course, be visible in the Reports tab. Templates may also already be present.

![Fig. 6.81](image3) Tree: Pages

After graphical reports, such as a parts list, have been generated from the project data for the first time, the Reports tab will contain an overview of all reports in the project. Normal graphical outputs (each graphical output on a new page) are then shown in the Pages folder and are visually distinguished by a small graphical symbol.

The graphical symbols have the following meanings:
### Symbol | Node | Description
--- | --- | ---
Source project (if applicable) | Contains the project that has been entered as the source project for the project or the reports/templates (if applicable)
(Report) Pages | Node contains generated reports
Function-related report types | Node includes function-related reports, such as terminal diagrams
Report type for overview reports | Node includes overview reports, such as a cable overview
Report blocks (function-related reports) | Node includes reports that belong to a report block of function-related reports
Report blocks (overview reports) | Node includes all reports that belong to a report block of overview reports
Report pages/placed reports | Displays a report page or manual placement of an embedded report
Embedded reports | Node includes all embedded reports that have been generated

### 6.5.2 Generate reports without templates

In general, you can directly generate reports in EPLAN. You do not need to create any templates for this. To generate a report, you simply begin by clicking the NEW... button.

![Select report](image)

**Fig. 6.82** Selecting a report
Management tasks in EPLAN

NOTE: An unwanted replace action can only be undone by exiting the IDENTIFIERS dialog with the CANCEL button.

Fig. 7.23  More buttons

In addition to the previously described SORT and EXTRAS buttons, the dialog also has the OK, CANCEL and APPLY buttons.

You use the OK button to exit the IDENTIFIERS dialog and, depending on the actions you have performed, you may need to confirm your changes in a subsequent dialog.

Since identifier editing has no UNDO function, unlike other features in EPLAN, the CANCEL button is very important, because it allows you to discard all changes made.

The APPLY button applies (saves) the changes made in structure identifier management without closing the IDENTIFIERS dialog. When performing comprehensive actions such as renaming or deleting of unnecessary identifiers, you should first save the contents of the IDENTIFIERS dialog via the APPLY button before performing the replacement action.

If something goes wrong with the replacement action, you can click CANCEL to exit the Identifiers dialog. The status will then be exactly the same as before the replacement action started.

Fig. 7.24  Prompt after you click the OK button

NOTE: A kind of “interim save” (APPLY button) is helpful when editing the identifier structure so you do not lose all changes.

7.1.5 Configure protection (protect identifiers from changes)

Apart from the functions already described, EPLAN also allows for the option of preventing identifiers from being changed.
If you select the identifier and call the *Configure protection* function from the popup menu, EPLAN opens the **CONFIGURE PROTECTION** dialog.

**Fig. 7.25** Popup menu – Configure protection function

**Fig. 7.26** Configure protection dialog
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