TechTip: Hardware configuration of SIPROTEC 5 components in Eplan

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1. Recommendations and notes

Knowledge of the Eplan application is required to configure SIPROTEC 5 components in Eplan.

This includes:

- Use of macro variants for the compressed representation of components.

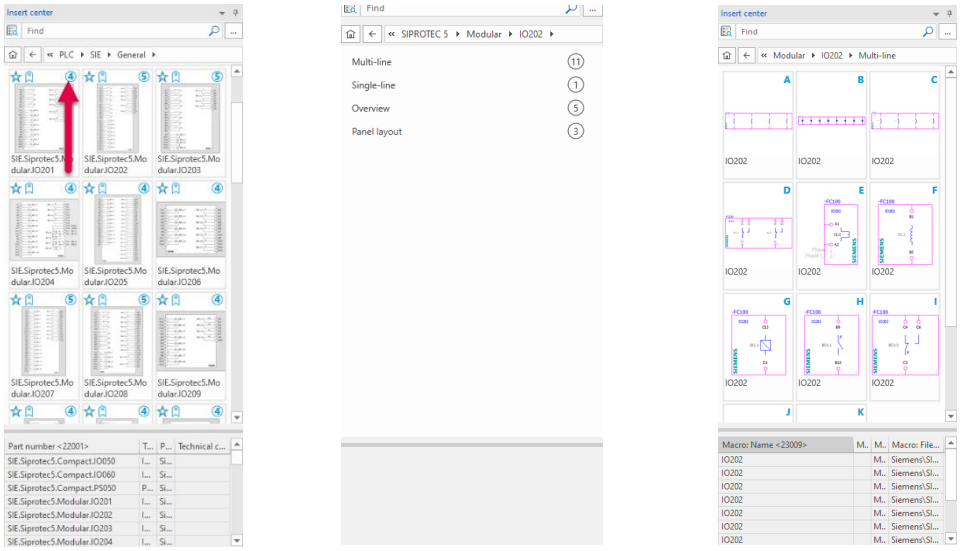

Fig. 1: Representation of the macro variants in the Eplan Insert Center

- Use of the device selection as well as the associated accessory lists to add possible components.

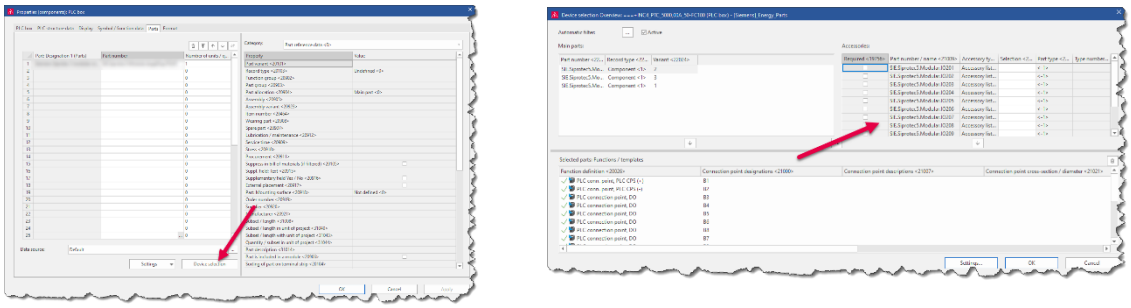

Fig. 2: Device selection for accessory selection

Tip:

The device selection procedure is also described in the Eplan help and is equipped with further notes.
Device Selection: Procedure (eplan.help)

- Switching the representation variants of macros with the **[Tab]** key.
- Placing of the selected macro variant using the shortcut keys **[X]** and **[Y]** at stored coordinates.

Tip:

An overview of the shortcut keys is also available in the Eplan help.
Overview of Shortcut Keys (eplan.help)

2. SIEMENS SIPROTEC 5 configurator

The SIPROTEC 5 configurator can be reached online and contains all the necessary solutions for the configuration of a protective device.

Fig. 3: SIPROTEC 5 configurator with selection options

There are diverse ways to have a configuration displayed or created.

- If the product code is known, you can enter it directly and the selected configuration is loaded.
- If the protective device is not yet configured, you can choose the configuration by using the **Device** button.

The summary provides an overview of the protective device. In addition, settings can also be specified for the display size, number of LEDs, etc. and a PDF file can be created.

Tip:

The downloadable PDF file is helpful for the representation of the protection component in chapter 3 Eplan - Procedure for SIPROTEC 5 representation and should be used.

Note:

For further information on working with the SIPROTEC 5 configurator, please refer to the SIEMENS website or the SIEMENS Mall as well as the device manuals of the respective components.

3. Eplan - Procedure for SIPROTEC 5 representation

After the configuration in the SIPROTEC 5 configurator has been completed, the protective device is transferred into the Eplan project and represented there.

Caution:

In order to display all SIPROTEC devices with all modules in Eplan projects, all Eplan SIPROTEC parts should be downloaded via the Eplan Data Portal.

Fig. 4: Eplan Data Portal

The protective devices are displayed in accordance with the SIPROTEC 5 configurator. In this case the SIPROTEC device types with their variants and modules have to be managed and maintained individually as parts (not an Eplan module) in the Eplan parts management. A kit is available to the user with which the protective device is compiled. Each module of the SIPROTEC family is made available for all possible variants and can be reached via the macro / device selection.

At the core, the protective device always consists of a housing with a device front and a PSxx module and is then configured with the necessary IO modules and interface modules. For this reason, the structure of a SIPROTEC device always starts with the PSxx article plus the type of front panel / display, to which further functions and modules are assigned accordingly via the device selection.

The description of the procedure is shown using the example of the modular SIPROTEC 5 series. This procedure is identical for the non-modular and the Compact series.

3.1. Protective device representation in the overview

The representation of the complete protective device begins in the Eplan project with the generation of an empty overview page that is used for the subsequent representation of the complete protective device.

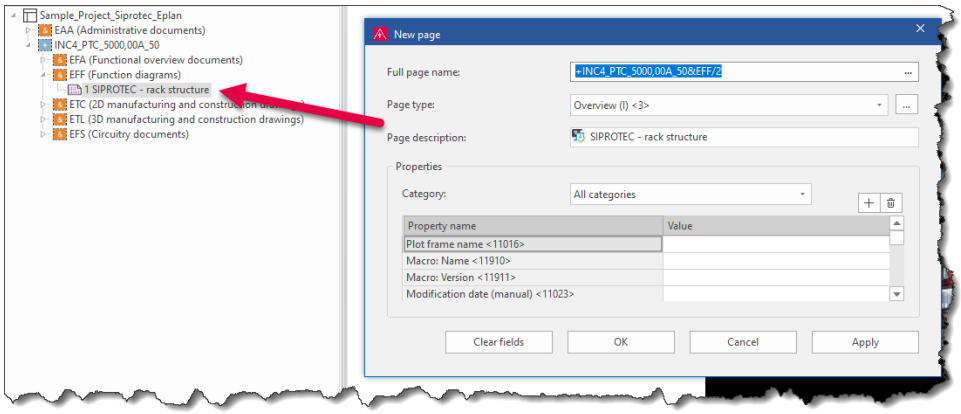

Fig. 5: Generation of an overview page for the rack layout of the protective device

The next step is to select the PSxx module and the display type from the insert center. For this the various combinations of PS module and display type are available as articles according to the SIPROTEC 5 sub-families:

- SIE.Siprotec5.Modular.smallDisp.PS201
- SIE.Siprotec5.Modular.largeDisp.PS201
- SIE.Siprotec5.Modular.noDisp.PS201
- SIE.Siprotec5.non.modular.smallDisp.PS101
- SIE.Siprotec5.Non-Modular.largeDisp.PS101
- SIE.Siprotec5.Compact.PS050

Place the item on the overview page as a rack layout using keyboard shortcuts. Use drag & drop to take the selected SIPROTEC 5 sub-family as an item from the insertion center, use the **[Tab]** key to select the corresponding display variant, e.g. as a rack structure (graphical display of the device) or the purely functional overview display (without graphical display of the device), and use the **[X]** and **[Y]** keys for final placement. In the example in Fig. 6, the article SIE.Siprotec5.Modular.largeDisplay.PS201 is selected as it is a modular device.

Tip:

In the find field of the insertion center you can enter the PS assembly directly and with the search mode for “Devices” you only get the relevant components.
Finding Objects in the Insert Center

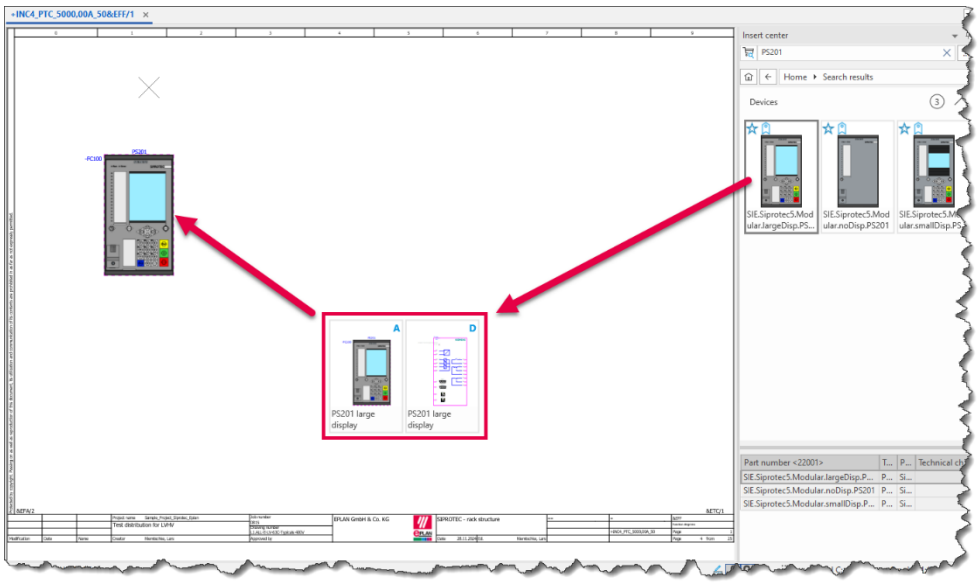

Fig. 6: Placement of the PS201 module in the rack layout

In the property dialog of the protection device, select the device selection on the **Parts** tab to add the modules / functions according to the SIPROTEC 5 Configurator.

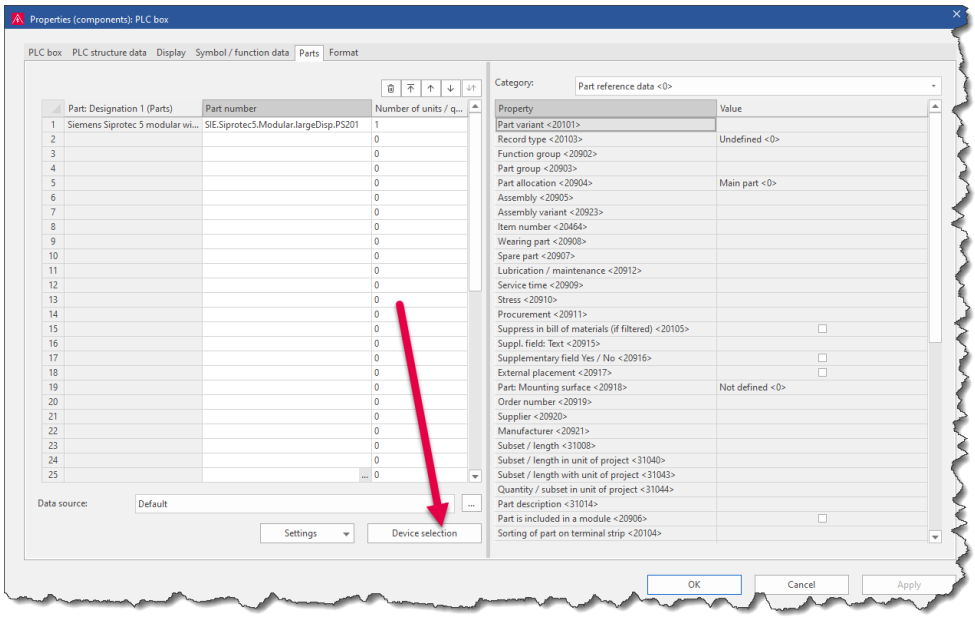

Fig. 7: Device selection for the protective device (always based on the PSxx module)

In the opened device selection dialog, you can choose the assignment of further modules as well as their placement within the protective device (see Fig. 8: Device selection dialog with selection of further modules).

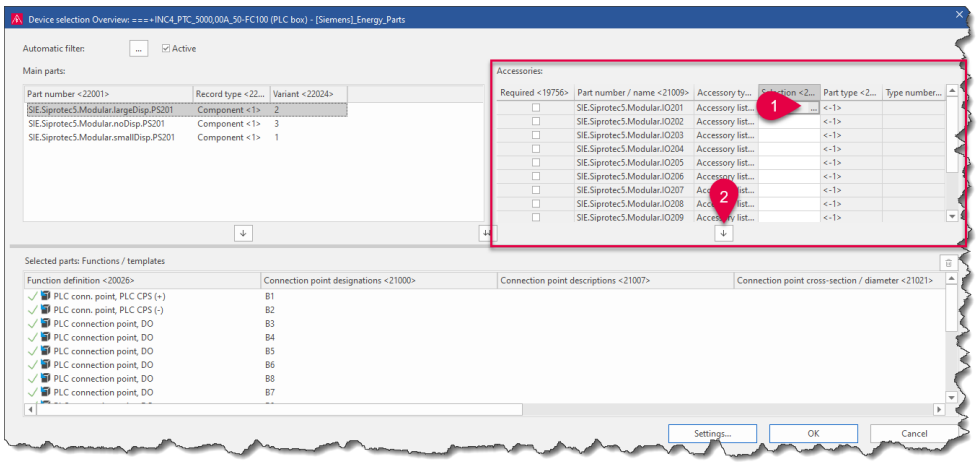

Fig. 8: Device selection dialog with selection of further modules

In the **Accessories** section, the SIPROTEC modules are available as parts via an accessory list. By actuating the button **[...]** (1) you have an accessory list available for selection to select the respective position of the module within the protective device.

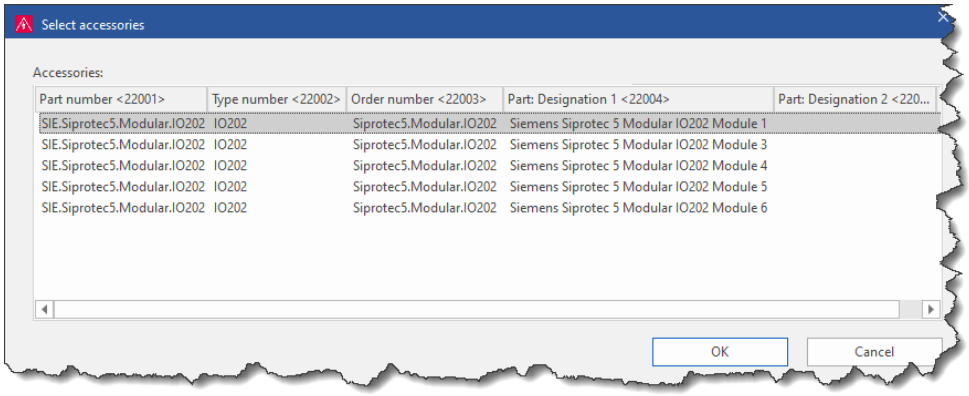

Fig. 9: Accessory list for IO modules and their placement in the protective device

Furthermore, parts are included in the accessory list as components. These are accessories such as extension housings or plug & communication modules.

If a housing for modules is required more than once for the placement, add the additional number with the arrow pointing down (see marking "2" in Fig. 8: Device selection dialog with selection of further modules).

Note:

The housings for modules are only required in the following for use with Pro Panel. The housing part for additional modules is not required for the 2D representation!

The plug & communication modules that are used as basic module ports are also selected as accessories and added to the configuration.

The hardware configuration is then available in the rack layout.

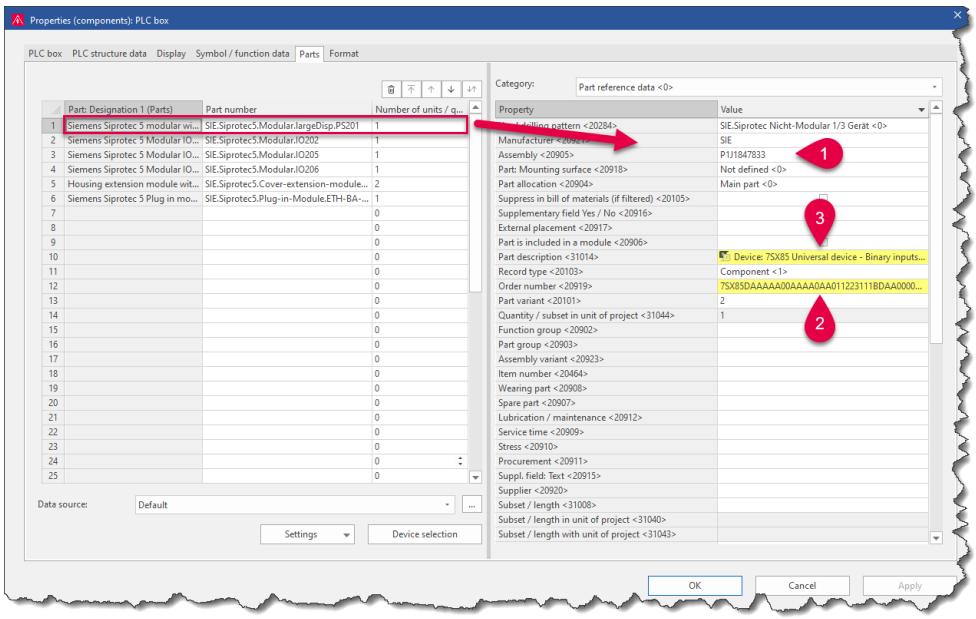

Fig. 10: Protective device component selection – hardware configuration

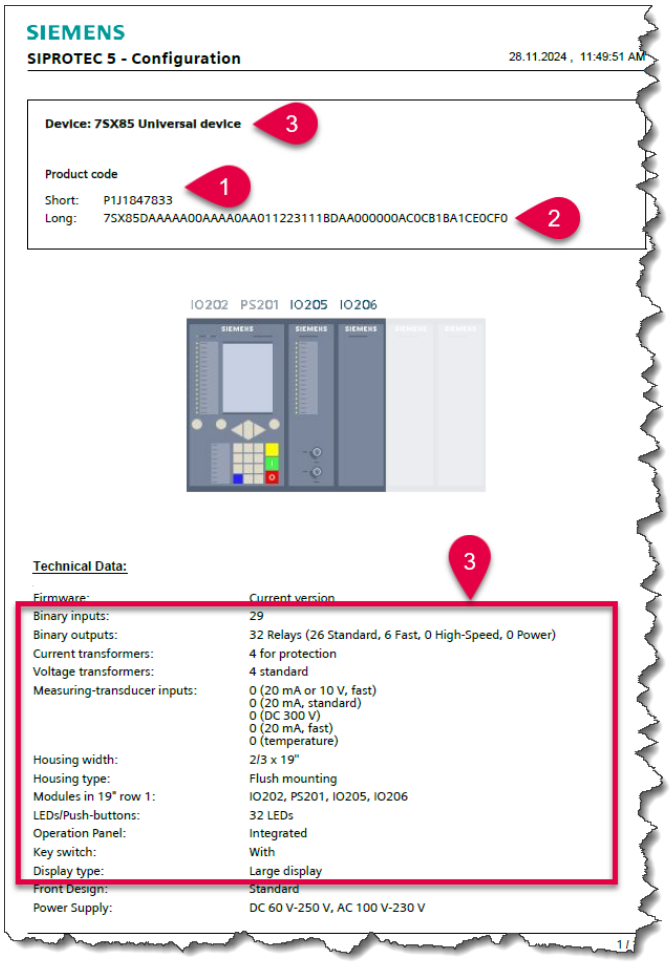

Fig. 11: Summary of the SIPROTEC 5 configurator protection device

In the main part you enter the required information for the bill of materials in accordance with the Fig. 10: Protective device component selection – hardware configuration and Fig. 11: Summary of the SIPROTEC 5 configurator protection device at the part reference.

Select the accessories from the second row with the property **Suppress in bill of materials (if filtered)** (ID 20105).

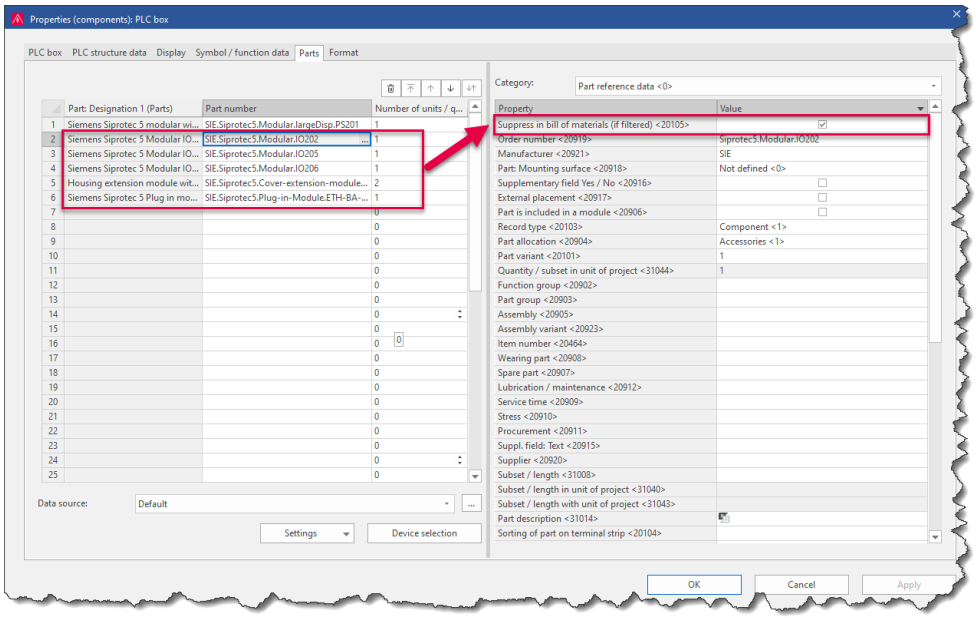

Fig. 12: Suppress selection of the bill of materials filter

In the further step you use the PLC navigator as well as the "Main functions" filter. This is used to place all the other components for the rack layout, and the views are switched over correspondingly via **[Tab]**.

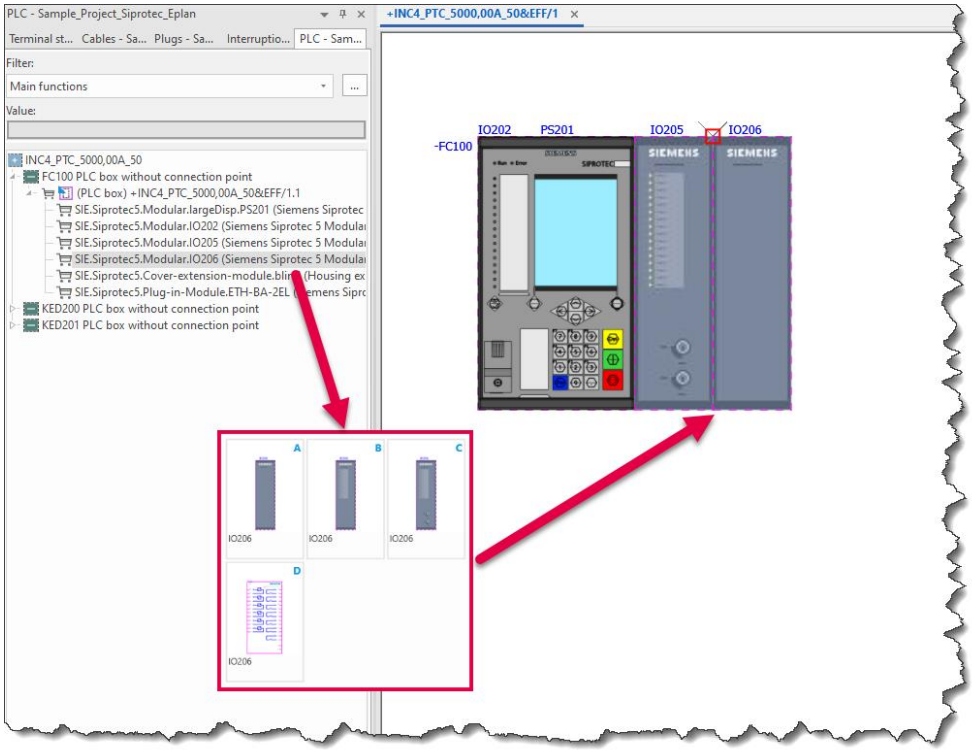

Fig. 13: Rack layout of the protective device in Eplan

You create an additional overview page for each SIPROTEC module so that an overview of the extension modules is available. Use Drag & Drop to drag the component from the PLC navigator, use the **[Tab]** key to select the overview display, and use the **[X]** and **[Y]** keys to perform the final placement.

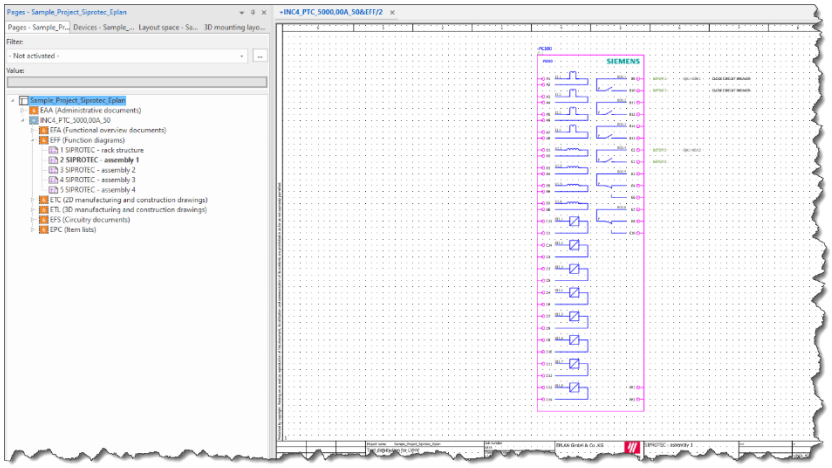

Fig. 14: Placement of the overview representation

3.2. Multi-line placement of protective device functions

Individual macros that can be called up again from the PLC navigator are available to the user for a distributed representation of multi-line functions.

The representation in the PLC navigator should be set to "Channel-oriented" and the filter should be set in accordance with the desired placement function.

Below please find the Eplan filters to be used in the PLC navigator:

- **Digital input** → For SIPROTEC binary inputs

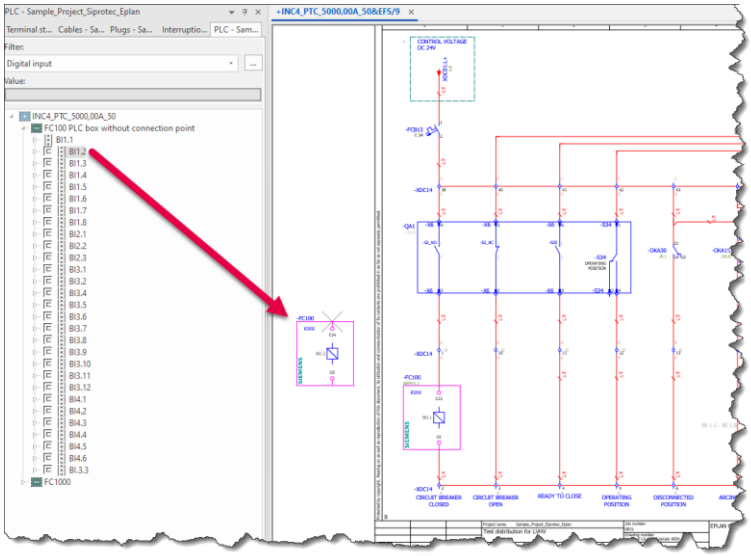

Fig. 15: Use of binary inputs from the PLC navigator

Note:

Rooted binary inputs can be displayed in block form or individually.

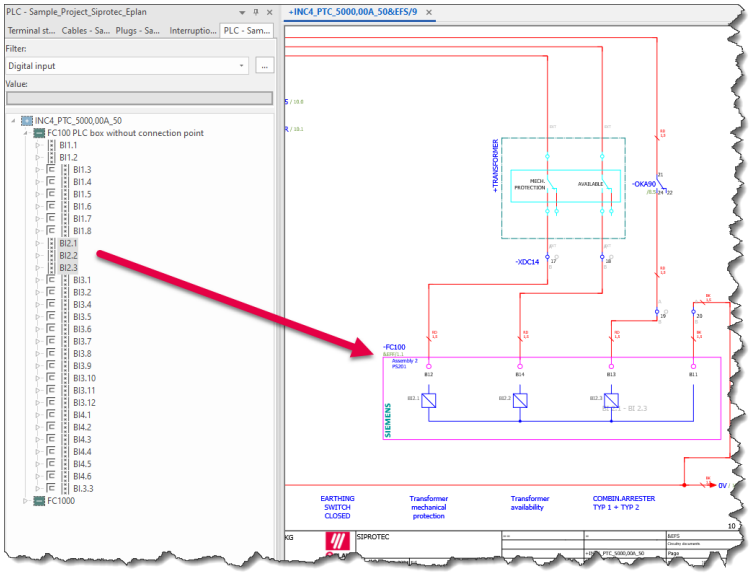

Fig. 16: Use of rooted binary inputs in block format

- **Digital output** → For SIPROTEC binary outputs

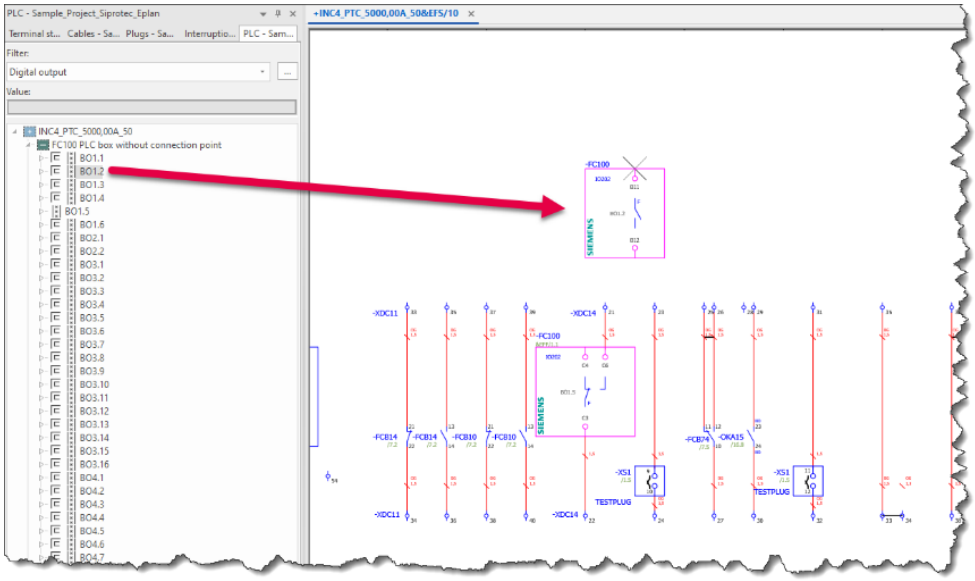

Fig. 17: Use of binary outputs from the PLC navigator

- **Card power supply 2** → For power supply connection points

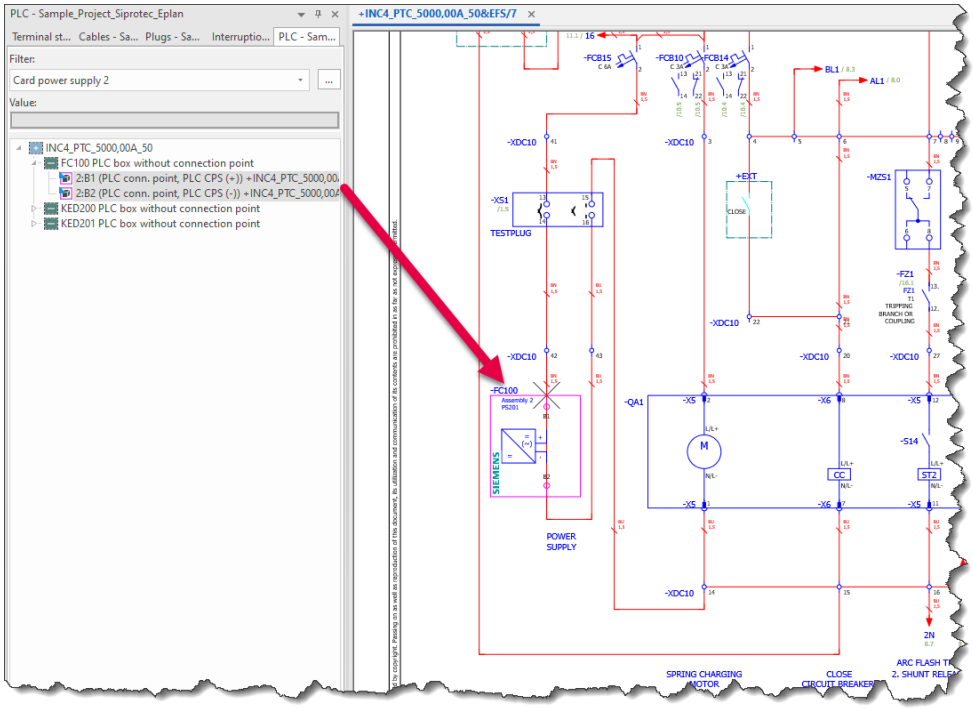

Fig. 18: Use of supply connection points from the PLC navigator

- **Card power supply 1** → For protective conductor connection points

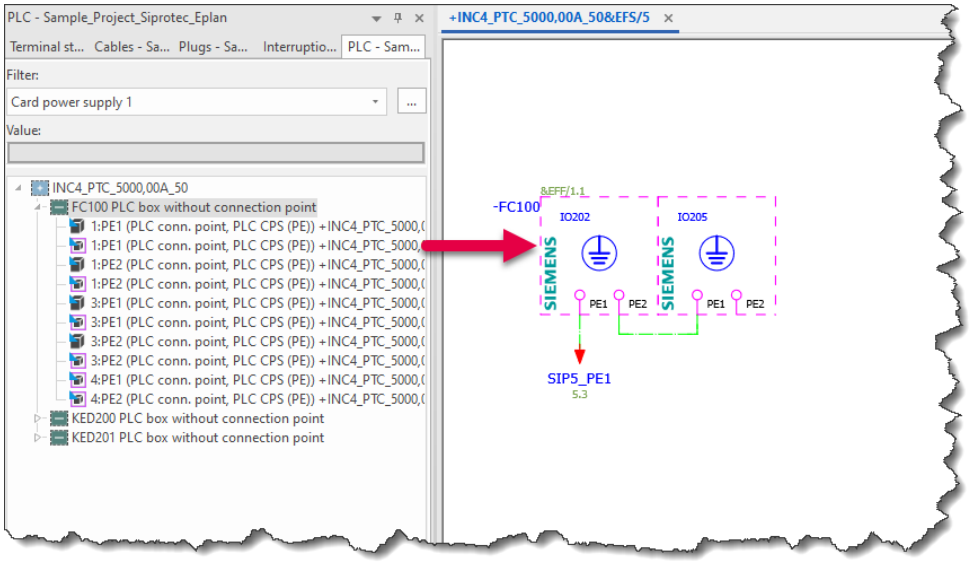

Fig. 19: Use of conductor connection points from the PLC navigator

- **Multi-functional** → For current and potential transformer connection points

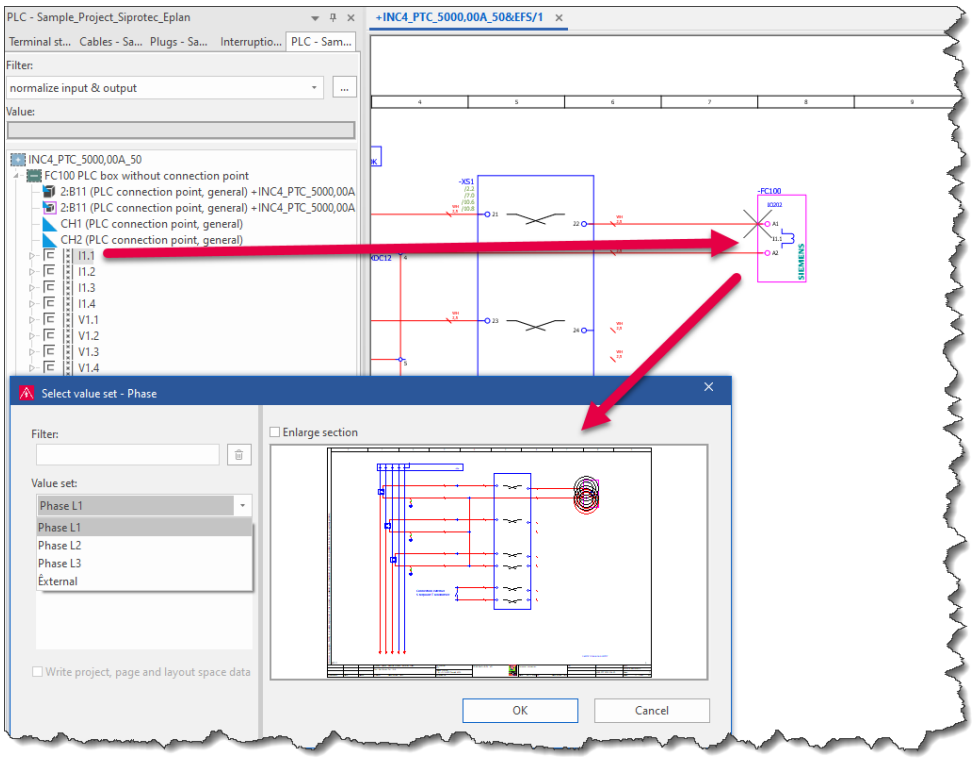

Fig. 20: Placement of current transformer connection points from the PLC navigator

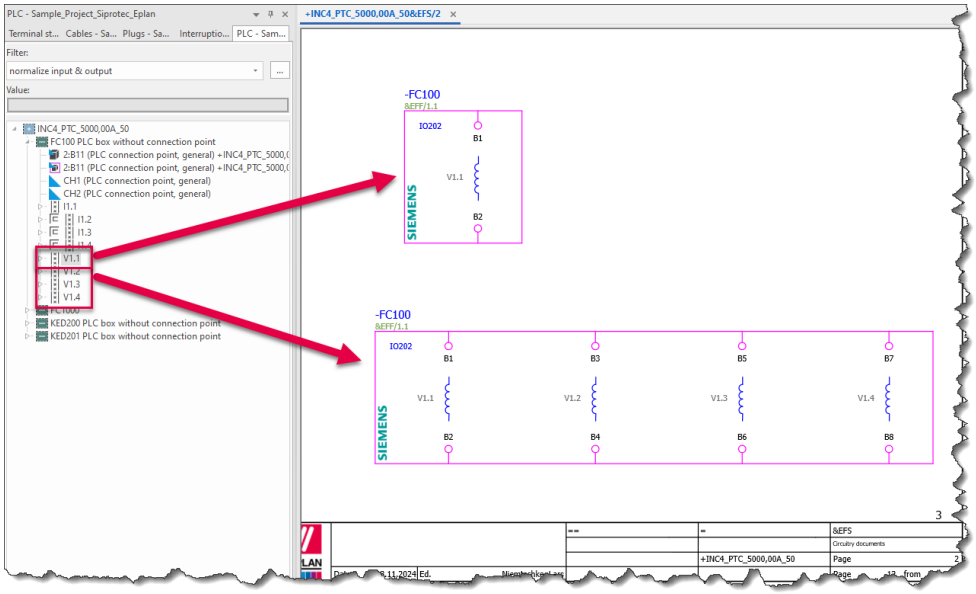

Fig. 21: Use of potential transformer connection points from the PLC navigator

3.3. Single-line placement of protective device functions

Individual macros that can be called up again from the PLC navigator are available to the user for a distributed representation of single-line functions.

The filter in the PLC navigator should be set correspondingly to "Main function" and the single-line diagram should be open. The components can be placed correspondingly via Drag & Drop. You can still switch the macro variant by using the **[Tab]** key.

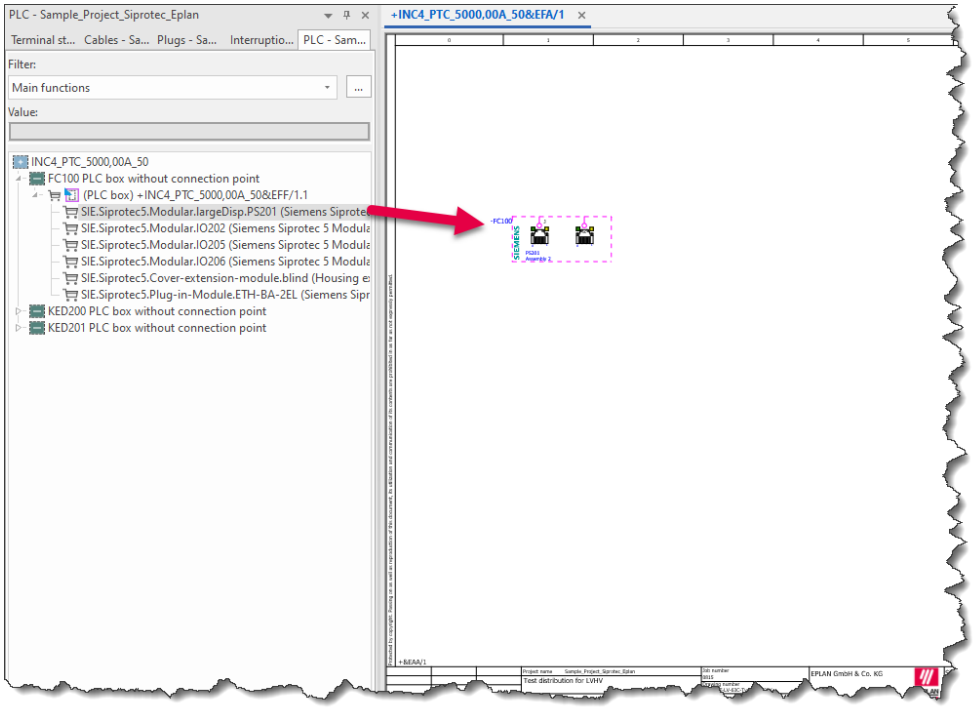

Fig. 22: Single-line placement of Ethernet and COM connection points

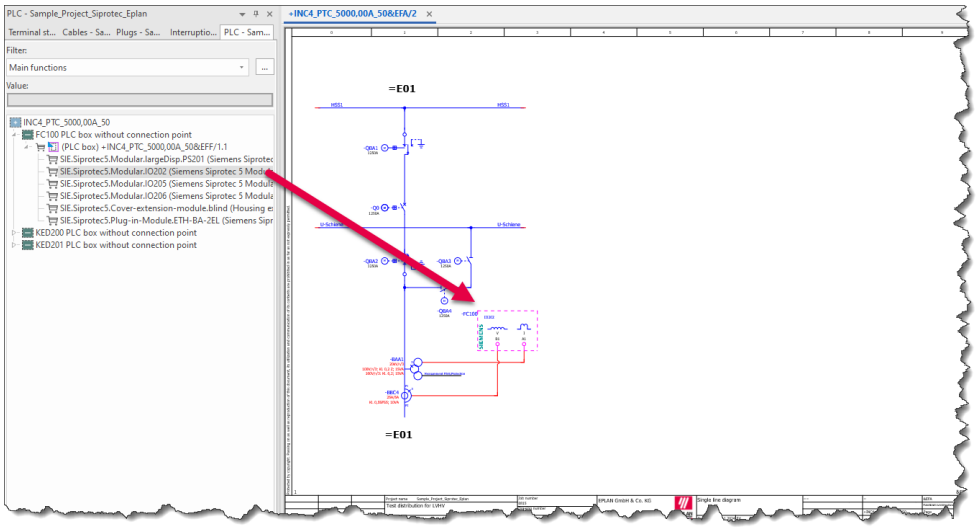

Fig. 23: Single-line placement of the current and potential transformer connection points

3.4. 2D panel layout - placement of the protective device

The 2D panel layout is also considered in the display of the protective device. The *2D panel layout navigator* is used to place the components on a 2D panel layout page. The components can be placed correspondingly via Drag & Drop. Use the **[Tab]** key to switch the macro variant (e.g., representation with a large, small or no display). Furthermore, the extension modules can also be switched in the required representation in accordance with the SIPROTEC 5 configurator.

Note:

The extension housing is only required when used with Pro Panel (see chapter 3.5 3D panel layout - placement of the protective device). The part for the extension housing is not required for 2D representation!

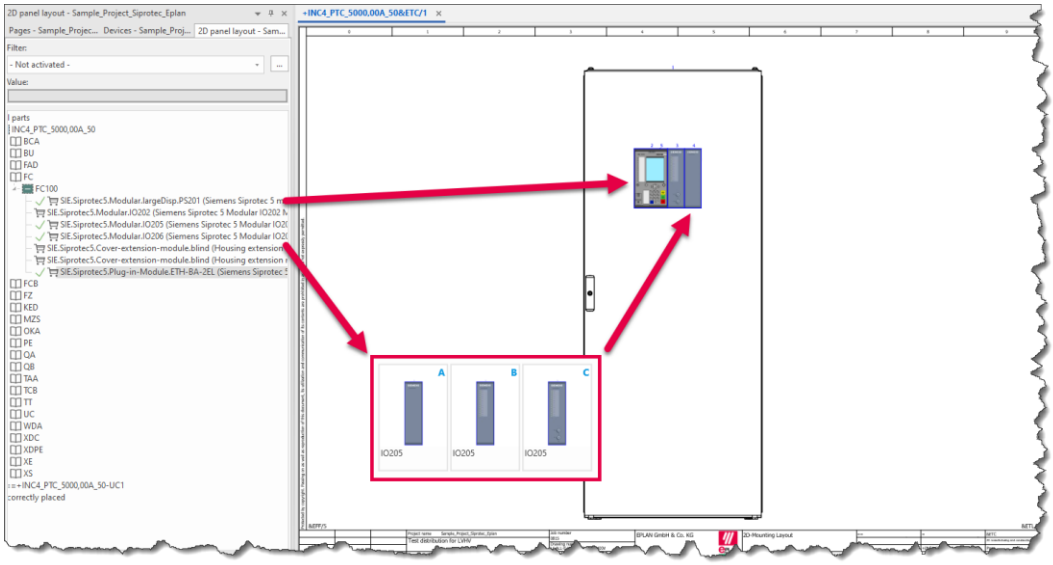

Fig. 24: Placement of the protective device in the 2D panel layout

3.5. 3D panel layout - placement of the protective device

A representation of the protective device with accessories can be displayed in the section of the 3D application (Pro Panel). The drilling pattern is then automatically stored for the mechanical structure, and the corresponding connection point patterns are stored for routing and wire fabrication. The components from the 3D mounting layout navigator can be placed correspondingly via Drag & Drop in an existing layout space. Furthermore, the extension modules can also be switched in the required representation in accordance with the SIPROTEC 5 configurator.

A multiple selection allows the placement of several components simultaneously through predefined mounting points.

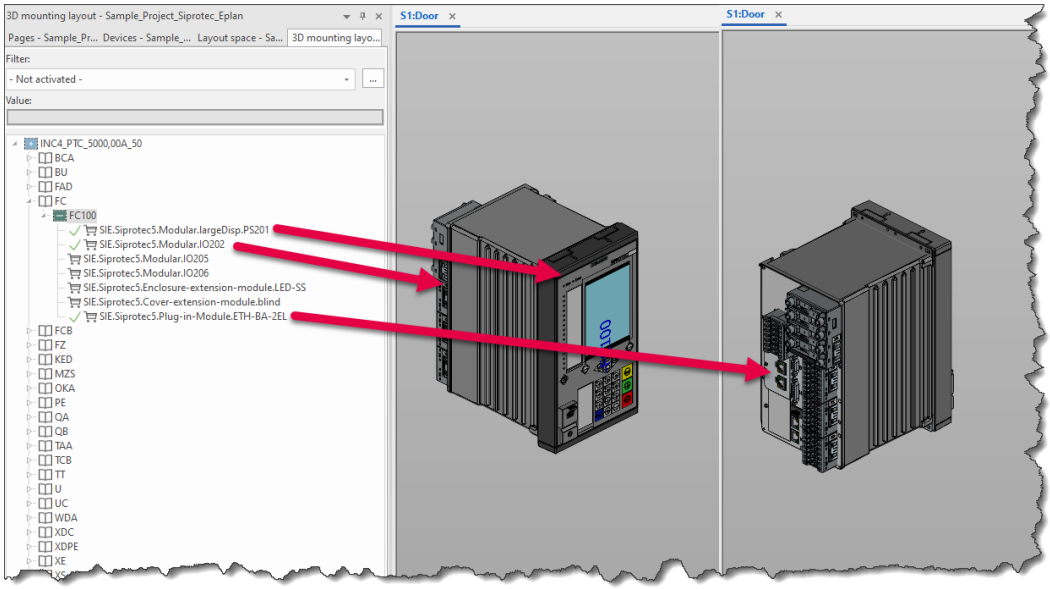

Fig. 25: 3D panel layout with placement of several components

Note:

If the drilling patterns for the extension housings are required, they must be moved and repositioned (see chapter 3.5 3D panel layout - placement of the protective device). The article for the extension housing is not required for 2D representation!

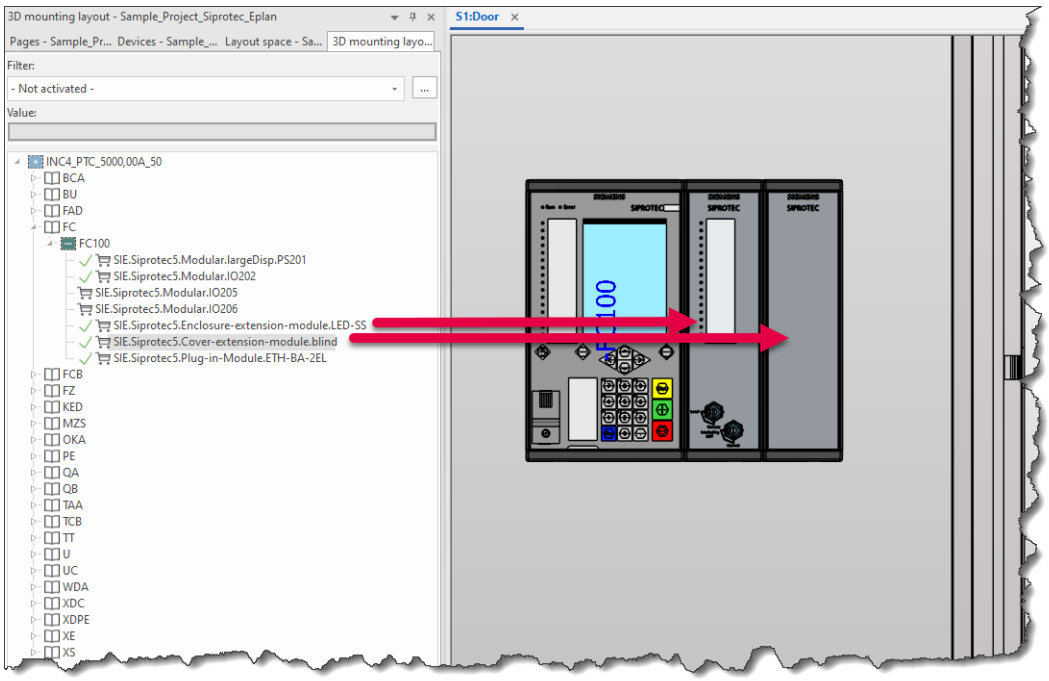

Fig. 26: Placement of the extension housings

Tip:

Deactivate the **Collision check** so that the components can be placed.
Tab Insert > Options > Collision check

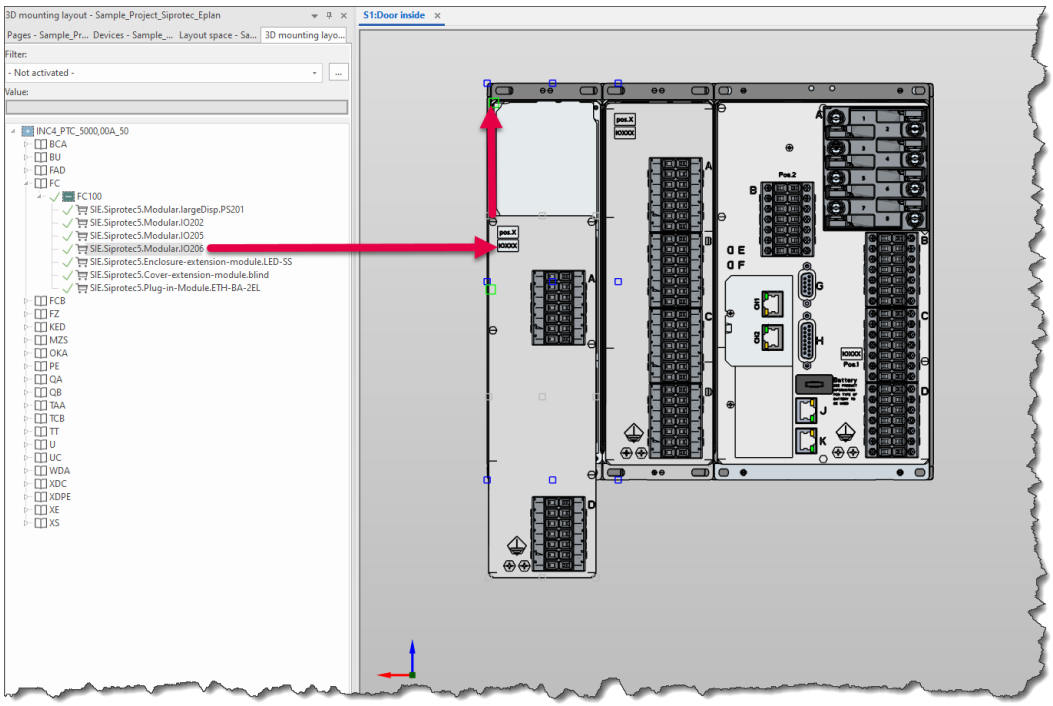

Fig. 27: Placement of the extension cards at the extension housing

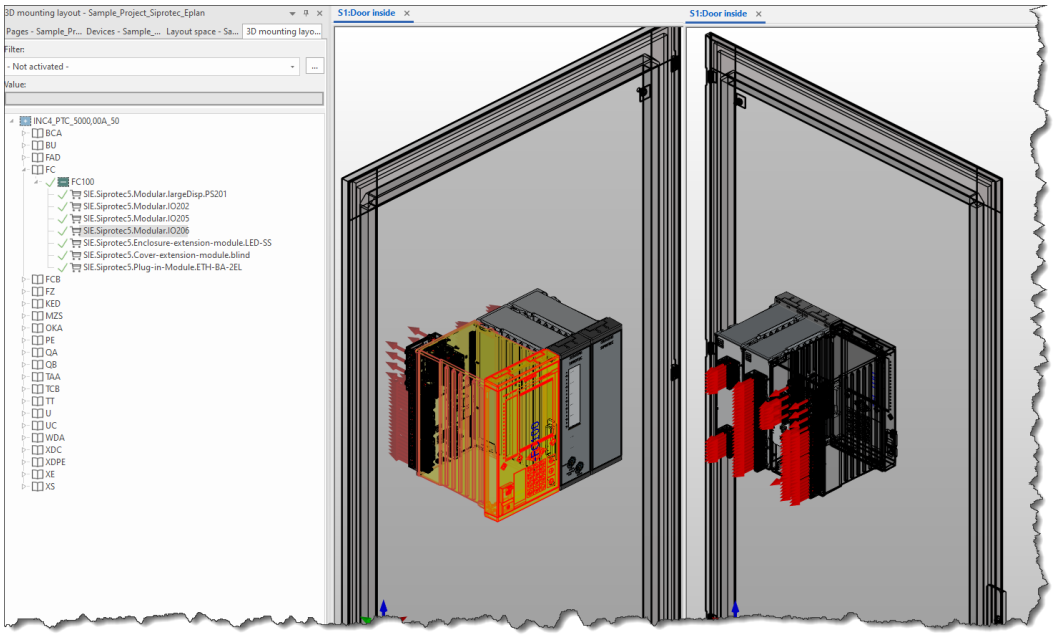

Fig. 28: 3D mounting layout of the protective device

3.6. Project report

A generation of model views as well as drilling views is possible with the project evaluation. Manufacturing data for machining and wire fabrication can also be exported.

The summarized parts list can be generated. In the form and in the filter some entries should be modified so that an output solely of the module with the short code including the long code and description is possible.

To this purpose you create a filter with the following information:

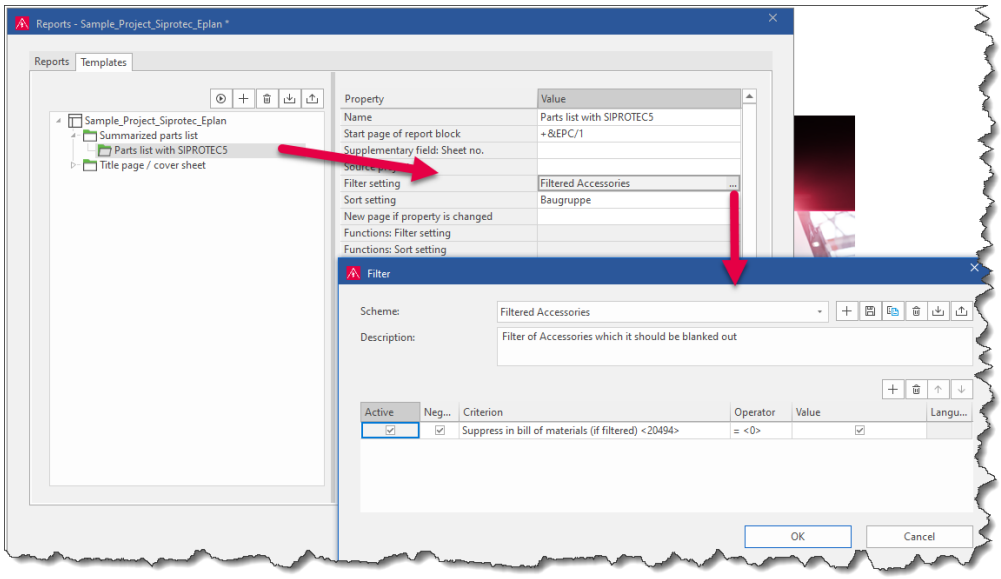

Fig. 29: Filter structure for the protective device

Furthermore, the form must be modified in the subsequent fields.

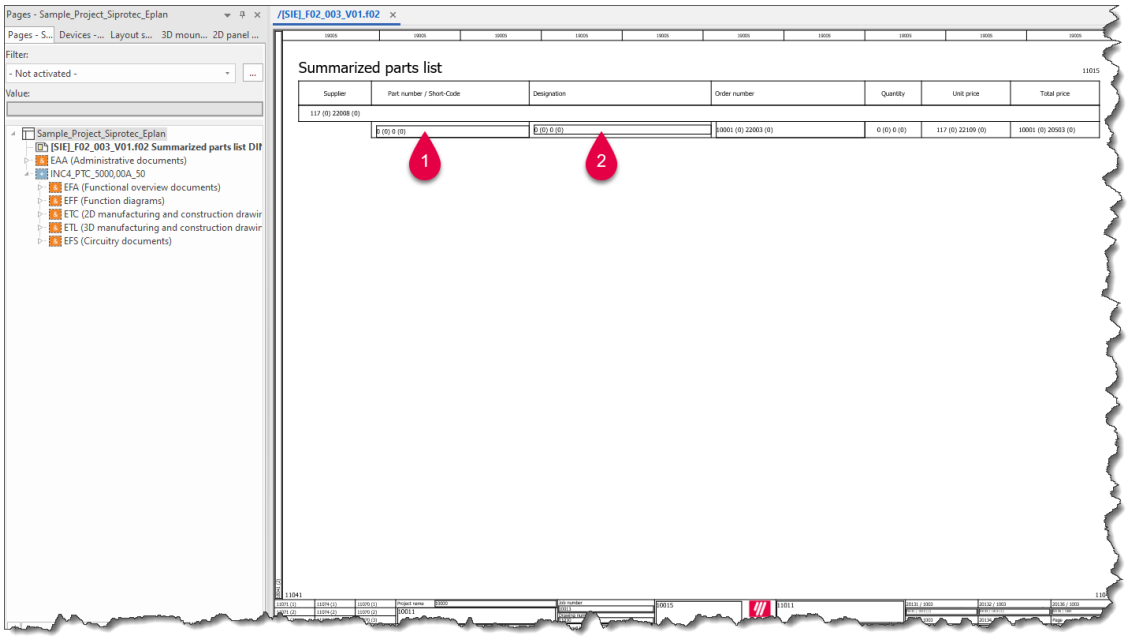

Fig. 30: Modification of the placeholders in the summarized parts list form.

1. The assembly can also be displayed in the article number field. To this purpose, format the property of the placeholder text. The module of the part reference should first be checked and if it is empty, it should be hidden. Secondly, the article number will be checked. This includes a check to ensure that the one before was not hidden (then the part number is to be hidden).

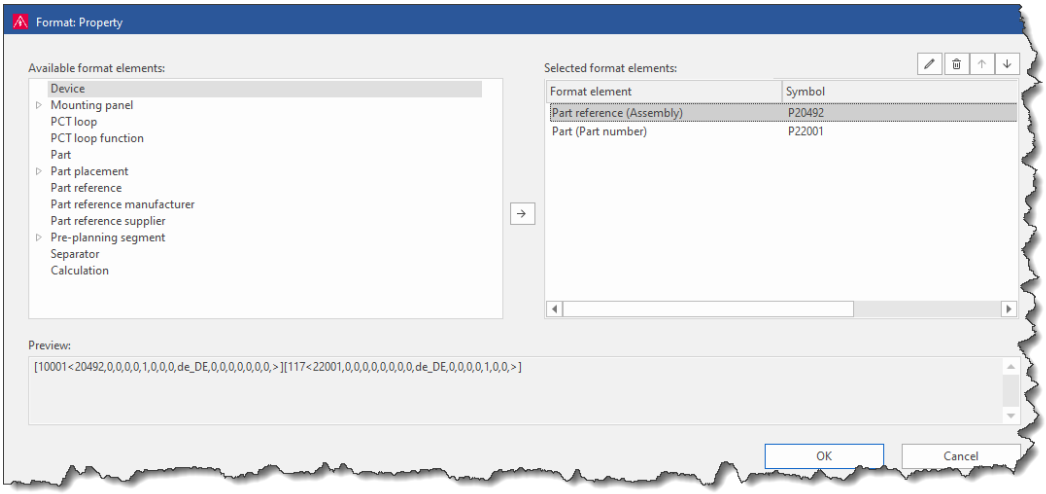

Fig. 31: Formatted placeholder for displaying the module or the part number

2. The display of the designation must also be modified so that either the part designation is displayed or the part description (if a description is contained in the part reference). The property is hidden when it is empty.

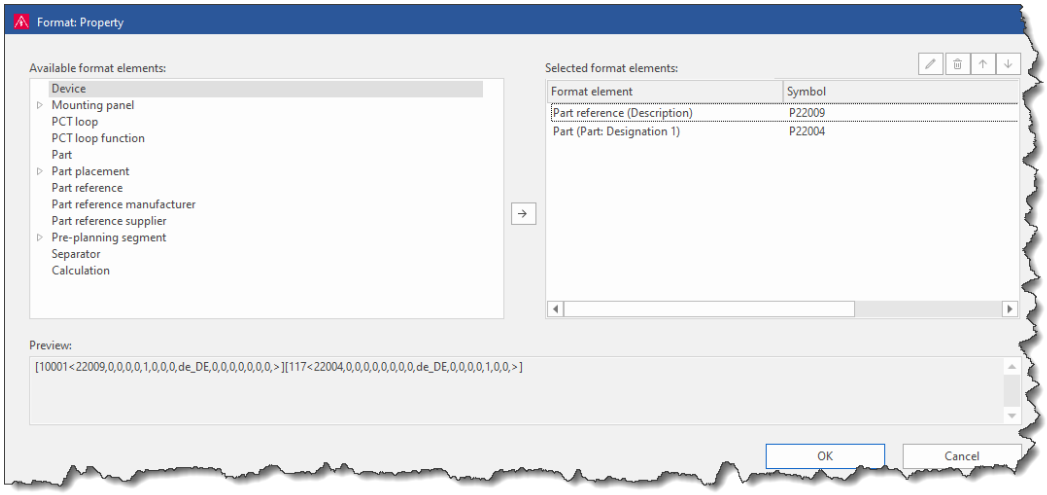

Fig. 32: Formatted placeholder for displaying the designation field

4. Online help

Information Portal (eplan.help)

Device Selection: Procedure (eplan.help)

Overview of Shortcut Keys (eplan.help)