

## General Information

This update can exclusively be used for the **PSS®SINCAL Platform 20.5**, not for other product versions!

### Procedure for Installation

- Close all running PSS SINCAL Platform applications.
- Decompress the Zip archive.
- Start the installation using AutoRun.exe or Sincal\SincalSetup.exe. The setup automatically detects the existing PSS SINCAL Platform installation and updates all components.

If you have any questions, please contact **PSS SINCAL Platform Support** (fon +43 699 12364435, e-mail [sincal.support.it@siemens.com](mailto:sincal.support.it@siemens.com)).

## Additions/Corrections Update 8 (October 31, 2025)

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

### PSS SINCAL User Interface

- Network Browser  
Fixed a problem with updating the pop-up menu when switching between electrical and pipe networks.
- Insert Netpoint  
Correction of an error when inserting a network point at the 2nd terminal of a network element if bend points are present.
- Network Area Dialog Box  
Fixed an error in the dialog for filling the list, which caused not all network areas to be displayed.
- Evaluation and Filter  
Fixed an issue with the filter for choice values in input data. Although the filter could be defined, the elements were not colored accordingly.
- Insert Switch  
Correction of an error when creating a switch and synchronization of changes in all open views. In doing so, a new switch was created in all open views instead of graphically placing the switch that had already been created.
- Line Segments  
Correction of an error when taking over the temp. coefficient from the line sections to the line data.
- Automatic Graphic Layout/Supplement Graphics
  - The node level limit was also considered in the "Connected" mode.
  - Default settings for nodes were not considered.

- When supplementing graphics that had already been partially created, previously positioned nodes were also repositioned.
  - Node types were not recognized correctly.
- Page Setup  
Corrects a bug in the dialog box when the page is switched from schematic to geographical (scale).
- Heat-Map  
The visualization types "Power Flow V/Vn" and "Power Flow Deviation V/Vn" were only available if branch results were available in the network model. However, these visualizations only require node results.
- Supplementary Graphics Object Line  
Correction of an error in drawing the arrowheads.
- Variant Comparison  
Correction of an error when creating scenario files from a variant comparison, which resulted in new network elements of the type "Switch" not being exported correctly.
- Import Network State  
Fixed a bug when converting invalid date values, which could cause the program to crash.
- Importing PSS SINCAL Network Models  
Fixed an error in the processing of dynamic data connections in the network model (e.g. Master Resource). The data connections, which can refer to any data record in the network model using RowType and RowID, were not updated correctly during import.
- Excel Import  
Extension to allow reference to characteristic curves and operating points already in the network model during import. Previously, it was only possible to access these when importing the characteristic curve tables at the same time.
- Database Manager  
Correction of an error when creating pipe networks via automation using the database manager. This always set the network type to "water".

### **PSS SINCAL Electrical Networks**

- Power Flow (PF)  
Operating points with apparent power were not correctly considered for measuring devices.
- Short Circuit
  - In the case of partial short-circuit results at connections, the  $I_k^{\text{PFO}}$  of the connection node was used instead of the  $I_k$  when determining the utilization  $I_k/I_k^{\text{max}}$ .
  - G74: In unbalanced networks, consumers were not modeled correctly when calculating with symmetrical components.
- Load Allocation (LA)  
Operating points were not assigned correctly to the loads, so the initial power was incorrect. It worked when calculating a power flow with operating point and load determination activated.
- Load Development and Economic Efficiency (LD, ECO)

An error in preparing and saving the diagram data for load development with and without economic efficiency results has been corrected.

- **Operating Points**  
Tap positions of transformers and shunt capacitors changed by operating points were not considered correctly.
- **Power Flow on Connectors**  
Correcting the power flow for connectors that are connected to inverters with PV-dependent behavior.
- **Protection Coordination (OC, SZ)**  
Impedance pick-up with times of 0.0s could cause the tripping to not work properly.
- **Time Series Data Interface (TSDI)**  
The status of the switch was not considered in the power flow.
- **Converter**  
Converters with sub-network models were calculated with the wrong sign in the PSS SINCAL power flow.
- **CIM Import**  
Correction of an error in the creation of lines in line containers, which caused station/field references to be generated incorrectly.

### **PSS SINCAL Automation**

- **Automation of the User Interface**  
Automatic updating of drop-down lists in the toolbar when calling the automation function Reload() for graphic layers, object types, network levels, etc.
- **Automation of the Calculation Modules**  
An error has been corrected that occurred when switching multiple times between the physical and virtual databases.

### **PSS NETOMAC**

- **Graphical Model Builder (GMB)**  
Fixed an issue with license verification.
- **MIMO Models**  
Fixed a bug when saving a MIMO controller.
- **Disturbance Criteria 04**  
Correction of an error in disturbance criteria 04, which caused the assignment of the source output to a slack voltage to malfunction.

## **Additions/Corrections Update 7 (December 27, 2024)**

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

## PSS SINCAL User Interface

- Date Input
  - 2-digit year dates are now handled according to locale settings.
  - Month entry with long/short names according to system format is supported.
  - Support for 12-hour time format (am/pm)
- Line Segments

Correction of an error when taking over the temp. coefficient from the line sections to the line data.

## PSS SINCAL Electrical Networks

- Switch

When updating networks, breakers at the connections of unbalanced transformers are now converted to switches with L123 conductors.
- Network Feeder

In the automation, multiple calculations for network feeder with internal reactance  $x_i \neq 0.0$  resulted in a fatal program abort.
- Power Flow (PF)

If the View Date was earlier than the Load Data Date, the system erroneously used the Load Data Date instead of the View Date to determine the active elements.
- Short Circuit (SC)

Correction of results output. In the short circuit, the dynamic voltage support was not considered for the voltage at the neighboring node, i.e. the voltages without dynamic network support were output.
- Thermal Destruction Analysis (TDA)
  - For machines with activated decay behavior, currents were determined to be too high due to an error in determining the capping factors.
  - For branch elements, the determination of the current angle could lead to incorrect results at the connections in the case of very small currents (at the limit of numerical accuracy).
- Protection Analysis (PSA)

Correction of an error when calculating with different types of short-circuit if a protection device in a zone had only DIFF settings and other protection devices had DIFF + further settings.
- Distance Protection Setting Calculation (DI)

Fixed an issue with the "medium-voltage networks" mode. No settings were calculated.
- Hosting Capacity (ICA)

Correction of an error in determining the loading of power units with a real transformer.
- Grid Code Compliance Renewables (EEG)

When performing the test according to VDE-AR-N 4110, the option for the individual procedure was considered, although it is not available for this guideline. This has been corrected.
- Time Series Data Interface (TSDI)

Correction of a problem with data connection from the TSDB. For asymmetrical measuring devices in TSDI, the data was not processed correctly if the phase information in the TSDB was

single-phase.

## Additions/Corrections Update 6 (October 31, 2024)

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

### PSS SINCAL User Interface

- **Supplementary Graphics Objects**  
Fixed an error in drawing the shadow of supplementary graphics objects and in parameterizing fill patterns in the properties.
- **Feeder**  
Fixed an issue with manually defined feeder names. These were not being handled correctly.
- **Split Busbar**  
The new busbar and any existing switches have not been assigned to the original substation.

### PSS SINCAL Electrical Networks

- **Contingency Analysis (CA)**
  - Correcting an error in the result processing when the calculation was carried out with parallel processes.
  - The "no convergence" state was not always displayed correctly in the result view.
- **Hosting Capacity (ICA)**
  - The view date was not considered when calculating operating points. This means that elements that had not yet been put into operation were also considered. Furthermore, the powers of the elements were not reset.
  - Fixed a bug in the processing of the entered date of the time series, which meant that they could not be deleted in the dialog box.
  - In special cases, the dialog box did not always display the actual limiting elements.
- **Time Series Data Interface (TSDI)**  
Fixed a bug in the filter in the result view.
- **Transformer Tap Detection**  
Correction of an error in the calculation module in unbalanced networks.
- **General Load**  
In the calculation, the voltage was not correctly taken into account for a load with the power flow type "model current".

### PSS SINCAL Pipe Networks

- **Scenarios in Gas Networks**  
When calculating scenarios in a gas network, it was not possible to use the toolbar to scroll between the individual scenarios.

## Additions/Corrections Update 5 (September 30, 2024)

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

### PSS SINCAL User Interface

- **Toolbar in the Graphics Editor**  
Fixed an issue when updating the "Evaluation and Filters" list when different network models are being edited simultaneously in the user interface.
- **Network Archive**  
For "Global models", the INT subdirectory was not added to the archive, which meant that the corresponding models could no longer be found when unpacking/importing.
- **Contingency Analysis Dialog Box**  
Improved performance when many contingencies (> 10000) were deleted in the dialog box.
- **Database Update**  
Improved performance when updating the database to the current version. All texts must be converted for the new HighRes graphics. This conversion was slow in networks with many data records in some database systems (e.g. Microsoft Access).
- **Insert Netpoint**  
Fixed an error in the insertion of netpoints that caused the newly created node not to be properly connected to the existing network model.
- **Substations**
  - Fixed a bug when inserting graphics for substations from another view. The substation graphics were not generated here.
  - Fixed an error in the creation of substation graphics, whereby the symbols of node elements were not taken into account in the size calculation. As a result, the node elements were partially outside the substation in the graphic.
- **Copying & Pasting Fault Observations**  
Fixed a bug when pasting a copied fault observation, whereby the fault observation was not created at the pasted element/node, but at the original element/node.

### PSS SINCAL Electrical Networks

- **Time Series**  
Correction of an error in the diagram generation of the step diagrams for the time series, whereby individual time points were written multiple times.
- **Connection Conditions**  
Correction of an error in equipment limits. An error occurred with earthed elements when the short circuit and power flow were activated.

## License

- **WIBU Key**  
An updated version of the WIBU key software is available in the installation package. A vulnerability according to the CVE standard has been fixed. The WIBU Key software is only required if PSS SINCAL is used with a dongle license. In this case, the new WIBU Key software should be installed.

## Additions/Corrections Update 4 (August 30, 2024)

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

### PSS SINCAL User Interface

- **User-Defined Symbols for Switches**  
User-defined symbols can now also be defined for switches, which visualize the symbol image depending on the switch state.
- **Changing Views**  
Correction of a problem when changing the view. A program crash could occur if the network model was saved in the background when changing the view.
- **Result View**  
The filter settings in the result views for protection simulation, fault location, time series and hosting capacity were not always saved correctly.
- **Heat Map**
  - Correction of a problem when automatically updating the heat map. When changing the variant, all temporary background images were always deleted by mistake.
  - Correction of a bug when creating the heat map. The "Create Legend" option caused a problem when printing.

### PSS SINCAL Electrical Networks

- **Contingency Analysis**  
It is no longer necessary to define a contingency with a start time of 0.0.
- **Short Circuit**  
In the "VDE 0102/2016 - IEC 60909/2016" short-circuit procedure, an impedance correction factor was incorrectly taken into account for the minimum short-circuit for direct infeeds. This problem has been corrected.
- **Verify Connection Conditions**  
The determination of the short-circuit limit value for type 1 generating plants requires a radial network. If this is not available, the calculation was previously aborted with an error message. Now a warning is issued and the calculation is carried out without a short-circuit check.

### PSS SINCAL Automation

- **User Interface**

Extension of the PrintDiagramFrame() function. Printing is now also possible without prior selection of all frames in the Print Frame dialog box. In addition, this automation function now also supports direct output to a file.

## Additions/Corrections Update 3 (July 31, 2024)

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

### PSS SINCAL User Interface

- Network Graphic
  - Correction of a problem when releasing GDI handles, which could cause a program abort in the network graphic without extended graphic rendering.
  - Correction of a printing error whereby the line thickness was not used correctly when printing and nodes/elements were drawn too thinly, depending on the current zoom level in the interface.
  - Correction of an error when coloring by switch state when the invert mode was active in the view. The colors were not inverted correctly at the terminal.
  - Selection of nodes: Correction of an error in the HitTest of nodes with transparent background color and symbol (circle/rectangle). Previously, the area of the node was also taken into account in the HitTest, now only the contour is taken into account.
  - Annotation of network elements: Correction of a problem with double annotation elements.
- Diagrams
  - Correction of a scaling problem for diagrams with logarithmic axes.
  - Correction of an error when deleting a subvariant, whereby the diagrams of the base variant were also deleted.
  - Variant comparison: Apply the formatting of the base signal.
  - Signal label: As soon as user-defined signals were available, the signal labels were always related to the 1st user-defined signal for the "None" characteristic.
  - Extended formatting of the signal labels with token &[Val1], &[ValX], ... for date values. The formatting can now be specified in the token, e.g: &[ValX:Date1] or &[ValX:Date2]
  - Correction of an error when deleting and creating temporary calculation diagrams (protection), whereby not all existing temporary diagrams were deleted and were still available, but without data.
- Symbols for Network Graphics
  - Correction of an error when manipulating the line width in the symbol definition with the PenWidth= attribute of the drawing instructions. The factor was not correctly taken into account in the new HighRes graphic.
- Synchronization of Tabular View when Changing Variants
  - Correction of an error when switching variants, whereby the displayed DB objects in the tabular view were not synchronized or the filter was reset.
- Standard Types
  - The column widths in the "Filter and visibility" dialog box are now saved individually per network type and data object in the registry.

- **Arc Flash Configuration**  
In the Arc Flash configuration dialog box in the IEEE tab, a typing error has been corrected in the "Arrangement of conductors" selection list: VCCB à VCBB.
- **Data Screen Form DI Settings**
  - In the zone screen form in the DI settings of the MiCOM P43X device, the angle Alpha was not displayed in the impedance quadrilateral.
  - Correction of a problem with the visibility of input fields when switching tabs.
- **Excel Import**  
Extension for line segments. The MRID is imported for line segments, both via the LineSegments themselves and via the MRID import.

### **PSS SINCAL Electrical Networks**

- **Short Circuit**  
Generator Unit for VDE 0102/2016 - IEC 60909/2016: The wrong rated transformer ratio was used for the minimum short circuit when controlling was present.
- **Hosting Capacity**  
Correction of a problem when exporting the results to a CSV file.
- **Dynamics**
  - Correction when creating the NET file with partitions. Partitioning is based on the frequencies of the voltage levels. However, there must first be a partition that has a network feeder.
  - Motor start-up: For synchronous machines, the parameter "Q" was used in the J line, which is not permitted for synchronous machines. The parameter "A" is now used for synchronous machines.
  - Power flow: Correction of an error in the PSS NETOMAC power flow for generators behind "ideal" switches, whereby the voltage and currents were 0 and therefore led to an abort of the calculation.

### **PSS SINCAL Automation**

- **Calculation Methods**  
When switching a breaker via the MRID, previously only the terminals were "isolated". Now the input data (Flag\_State, Flag\_StateL1, ...) of the breaker are also set accordingly.
- **Database Manager**  
Correction of an error when updating a network model via the database manager (DBMgr) using the automation API. Not all state/update messages were suppressed, causing the program to abort.

## **Additions/Corrections Update 2 (June 28, 2024)**

This update contains all the additions of the previous updates and on top of that the following error corrections and additions.

## PSS SINCAL User Interface

- Network Graphics
  - Correction of visualization issues when pasting EMF graphics from the clipboard (text size and bounding box).
  - Correction of display problems with large page formats (> 100m) and high zoom levels.
- Evaluation Operating State (Time-based)  
Color changes and selection for time-based events were not saved correctly.
- Evaluation of Protection Simulation  
Correction of an error. The evaluation did not work properly if the protection device that tripped was located directly on a consumer.
- Diagrams  
When moving automatically generated diagram labels (e.g. limit values for harmonics), the label text was changed to the characteristic curve name.
- Station Graphics  
Correction of an error when creating stations in geographical views, whereby the created polygon was not automatically closed.
- Opening Networks  
When opening a network or sinx archive, problems may occur if there is a database.db and a database.mdb. SQLite networks are now preferred.
- Select by Type  
Additional filters (network area & network zone) for stations did not work. Nothing was selected here.

## PSS SINCAL Electrical Networks

- Power Flow  
If a power flow was calculated with a selected operating point, loads with the behavior "Z constant" have not been assigned the correct power.
- Load Assignment
  - The meshed network mode could not assign the consumers correctly and therefore returned invalid results.
  - Combinations of operating points, time series and network development profiles were not always correctly considered.
- Contingency Analysis  
Correction of the accuracy query when checking whether a violation is below the base value.
- Protection Coordination  
When using the impedance pickup, the end times must be defined via the tripping zones. The time settings currently still available in the impedance pickup must be set to 0.
- DC Serial Element  
The fields for operating points and development series were interchanged in the screen form.
- PDM Import

The identification of the functions did not work correctly if several zones were activated or ground was active.

- Import/Export of Protection Device Settings  
Correction of an error in the import and export functions.
- CIM Export  
Correction of an error when exporting the position of the controller for two-winding transformers.

### **PSS NETOMAC**

- Comtrade Export  
Correction of an bug when creating COMTRADE files in the PSS NETOMAC calculation.

## **Additions/Corrections Update 1 (May 28, 2024)**

This update contains the following error corrections and additions.

### **PSS SINCAL User Interface**

- Graphic Problems with Interactive Editing  
Correction of an error when interactively editing network elements, whereby GDI resources were not always released and redraw problems occurred.
- Import Operating State  
The symbol type for breaker or switch was not processed correctly during import.
- Printing Background Maps  
When using the Print frame function to output a reduced area of the network graphic, no background maps were printed.
- Feeders with Substation Model  
Correction of a problem when generating the unique name if a feeder is connected to several substations.
- User Menu  
The following new environment variables are now available:  
SIN\_VERSION: e.g.: 20.5, 20.5.1, 20.5.2, etc.  
SIN\_VERSIONINFO: Readable versions (see Help – About)  
SIN\_COMVERSION: API version number
- Evaluations  
When the protection simulation evaluation is started automatically, the system now checks whether results are available.
- Excel Import  
The previous selection values for node/substation type could no longer be identified, causing the import to be aborted with an error. The old node and station types are now also processed internally and updated to the new selection values.

## PSS SINCAL Electrical Networks

- Protection Coordination
  - Correction of an error when determining the results for connections.
  - The decay of the short-circuit contribution of synchronous machines has been corrected. If the machines are not considered in the short circuit (e.g. IEC 60909 minimum), the corresponding calculations for decay are no longer performed.
- Motor Start-Up Diagrams

The number of diagrams for elements and nodes was limited to 200. This limit has been removed. Can still be used with an extended parameter (Simulation.LimitChartCount).
- Switching Times Dynamic UI and et Characteristic Curve

Correction of an error when processing the characteristic curves.
- Coupled Lines

Coupled lines were not correctly considered in multiple fault locations and protective routes.
- Arc Flash – Empirical Model

Correction of an error when checking the preconditions for the empirical model.
- DINIS Import

Correction when importing the thermal limit current  $I_{th}$  for switches.
- HUB Import

Correction when importing the thermal limit current  $I_{th}$  for switches.
- CIM Import
  - The graphic objects generated by the CIM import now use the individual line widths in the view settings.
  - Extension of the CIM import so that the symbol size 0 or -1 can be specified in the import dialog box, so that the node and branch elements are created with the symbol sizes from the individual view settings.
- CIM Export

Additional check during CIM export in the event of incorrect topology data (network area).

## PSS SINCAL Automation

- User Interface: SincalDoc.Database

Correction of an error when processing the connection string of the local protection device database.
- User Interface: OpenView/Activate

Extension of the OpenView automation function in the GUI so that the desired view can also be activated. Until now, the view was only activated if it was not yet open.