## General Information

This update can exclusively be used for the **PSS®SINCAL Platform 20.0**. It can't be used with 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).

## Additions/Corrections Update 4 (February 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

- Updating the Network Database for Switches
  Correction of an error when processing deletion data records in sub-variants for converted lines of type "Connector".
- Plot Definition for Dynamics
  Correction of an error in the filter functions in the dialog box.
- Copy & Paste
  Correction of an error when copying network polygons (substations, coupling data).
- Coupling Data
  Correction of an error whereby the coupling data could not be inserted as a graphical object (network polygon coupling data).
- PIC Background Images
  Correction of display problems (visibility) when displaying PIC background images if invalid or incorrect instructions are contained in the PC file.
- ANSI Symbols in GUI
  The symbol for the "Serial Dual Reactor" was not present in the ANSI symbols, so all subsequent symbols were incorrect (e.g. in the topology browser).
- Excel Import
  - Correction of a problem with the visibility of controls in the wizard.
  - Correction of a problem when importing the database IDs of standard types for network elements.

- Set Network Data
  Correction of an error when filling choice values in the dialog, whereby only the value "(None)" was available, but not the possible choice values.

- Evaluations
  The Operating State evaluation did not work correctly when results from the Operating Points calculation were displayed. This problem has been corrected.

**PSS SINCAL Electrical Networks**

- Updating the Network Database for Switches
  Correction of an error when updating the network element groups, whereby the table was no longer created correctly for the active variant (the attribute "Flag_Variant" was not set correctly).

- Power Flow (PF)
  Correction of an error in generators with PV profiles. In unbalanced calculations, the voltage values were not set correctly in all conductors.

- Short Circuit (SC)
  - Correction of an error in the dynamic voltage support. The Newton Raphson method led to non-convergence in network elements with island operation.
  - Correction of an error in the conversion of short-circuit currents with phase data into symmetrical components for the results.

- Protection Coordination (OC)
  OC protection – tripping characteristic: Correction of an error when determining the tripping characteristic with the function Lim.

- Protection Analysis (PSA)
  When the option "Clearing time without voltage protection" was activated, the tripping times of the voltage protection were only ignored if they were slower. Now the tripping times are completely ignored when this option is activated.

- Protection Routes
  Correction of an error in the protection route diagrams for impedance and tripping areas. The pick-up area was not shown.

- Harmonics (OB)
  Correction of an error when determining the harmonic current of converters.

- Network Reduction (NR)
  Correction of an error when removing the reduced network elements from the database.

**PSS SINCAL Automation**

- Calculation Automation
  Extended functionality for updating objects in the network database that are accessed with DS.GetCommonObject(). The attributes of these objects can now also be updated in networks with variants. The same functionality for variants is now available in the calculation automation as for direct editing in the GUI.

## Additions/Corrections Update 3 (January 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

- Tabular View
  Correction of an error when synchronizing the switch state of the terminals in the graphic views.
- Supply Evaluation
  Switched-off supply sources and out-of-service supply sources are no longer taken into account as start elements for determining the supplied network elements.

### PSS SINCAL Electrical Networks

- Protection Coordination (OC/SZ)
  - Correction of an issue with simultaneous modeling of DI and DIFF protection at the installation location of the protection device. When deactivating the DIFF function in the protection coordination, the DI function was also deactivated.
  - Correction of an error in the pickup of the distance protection. Phase/ground settings from the pickup were not correctly compared with the tripping data.
- Thermal Destruction Analysis (TDA)
  - Correction of a program error in the user interface when highlighting network elements. The program was terminated if not all network elements to be highlighted were included in the network graphic.
  - The report was not displayed correctly in the detail view of the result view and a unit in the report was also incorrect.
  - Correction of an error in association with the new switch model. Incorrect currents were registered for the switches and the thermal limit current was also not correctly taken into account.
  - Correction of an issue with simultaneous modeling of DI and DIFF protection at the installation location of the protection device. When deactivating the DIFF function in the protection coordination, the DI function was also deactivated.
- Harmonics (OB)
  Due to numerical inaccuracies, the results of the frequency responses could deviate when calculating with different starting frequencies. This problem has been corrected.
- CIM-SP5-Import
  The import of switches and breakers in "CIM12 for SP5" has been extended. New switch elements are now imported instead of lines.
- Switches
  Enhancement of the switch results in the short circuit: The utilization Ip/Ipmax and Ib/Ibmax have now also been calculated.
- Updating the Network Database for Switches
  - Additional checks and more tolerant handling of incorrect data such as invalid terminal IDs, inconsistent graphic data, etc.

- Improved performance when updating networks with many additional views.

**PSS SINCAL Automation**

- Calculation Automation – SwitchByMRID
  For elements of the "Switch" type, the terminals to be switched also had to be specified. This is no longer necessary. Switches are always switched at all terminals.

## Additions/Corrections Update 2 (December 28, 2023)

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**

- Extended Display of Elements in the Graphic View
  Correction of an error when coloring the network elements by state (out of service, future elements, shutdown elements) when results were displayed.
- Supply Evaluation
  Correction of an error in the evaluation with activated island operation, whereby not all possible supply elements (infeeder, synchronous machine, etc.) were considered.
- Heat Map
  New default colors in the dialog box.
- Diagrams
  - Correction of an error when saving the order of diagram objects in the Format dialog box.
  - Correction of a problem for diagrams with logarithmic axes if all signal values are 0.0.
  - Correction of an error when updating old pipe diagram data which could have caused a complete program crash.
- Message Boxes
  Correction of an error in some extended message boxes with options, whereby the application was not completely locked and various actions could be executed.

**PSS SINCAL Electrical Networks**

- Protection Coordination (OC/SZ)
  - Correction of a problem with reclosers. If these tripped faster as backup protection than the main protection, then the main protection was not switched correctly and an incorrect network topology occurred in the loops.
  - Interlock: Correction of a problem with signal transfer with the same sender and receiver protection device. In this case, the locking was not carried out correctly.
- Protection Analysis (PSA)
  Correction of an error when highlighting network elements if parts of the network graphic are not graphically created.
- Dynamics (ST/EMT)
  Extended calculation parameter for infeeders with bad convergence in PSS NETOMAC. This

allows the PQV option for the power flow to be activated in the CTL files in program control line 4:
NETOMAC\PQV := 1

**PSS SINCAL Pipe Networks**

- Select Supply
  The GUI function for selecting the supply of network elements did not work in district heating networks.

**PSS SINCAL Automation**

- Calculation Automation – GetObj
  The API function could not return a switch object.
- Calculation Automation – Protection Devices
  If several calculations were performed by the automation and elements on which protection devices are located were set to inactive, the protection devices were set to inactive and no longer to active.

## Additions/Corrections Update 1 (November 28, 2023)

This update contains the following error corrections and additions.

**PSS SINCAL User Interface**

- Formatting in the Graphics Editor
  Improved functionality when setting formatting/attributes via the format toolbar if the formatting of the selection amount is different.
- Network Browser – Contingency List
  When activating the "Select all" and "Deselect all" functions, the contingency list was not updated.
- Incorrect Symbols
  Some symbols in the menu were displayed incorrectly when using HighDpi display.
- Annotation and Filter
  Correction of an issue when applying filters to element input data, whereby the symbol was still drawn with the element color.
- Switches Dialog Box
  Correction of an error when displaying the open switches in a multiple selection.
- Diagrams
  - Logarithmic diagrams: Numerical values equal to zero, which cannot be displayed in logarithmic diagrams, are now omitted instead of deactivating the logarithmic display. Zero crossings (changes from positive to negative values) continue to deactivate the logarithmic display.
  - Diagram objects with a background color identical to the page color were drawn transparently. As a result, the text of the objects (labels, markers) was drawn without a

background and the underlying line made the text unreadable.
  - Correction of a bug when transferring the default colors from the input data dialog box to secondary dialog boxes (diagrams, characteristic curves), whereby the internal default colors were used instead of the document colors in some secondary dialog boxes.

- Multi-User Master Database
  Correction of a bug in displaying the LOG file for the changes when previewing from the master database.

**PSS SINCAL Electrical Networks**

- Power Flow (PF)
  For Loads with a Customer Data, the calculation of the currents was not done correctly if no values were specified for all available phases.

- Harmonics (OB)
  The extended parameter "Harmonics.DefAngUnsym=On" can be used to activate automatic switching to unbalanced calculation for default angle determination. An unbalanced power flow is now also calculated here.

- Hosting Capacity (ICA)
  - Correction of an error when determining the ICA result values for highlighting in the options dialog box. As the external results database was not opened correctly, reading the result values did not work.
  - Correction of a program abort when performing highlighting without color values.

- Multiple Calculations
  The correct variant was not always shown in the messages for multiple calculations.

- Thermal Destruction Analysis (TDA)
  - Correction of an issue when taking over the current short-circuit method, which resulted in no short-circuit method being displayed in the Result View.
  - Correction of the progress bar for multiple short-circuit methods. The status was not reset when the short-circuit method was changed, causing the "maximum" number of errors to be counted.

- Dynamic Simulation (ST/EMT)
  - Correction of an issue with the output of the current transformer signals of a protection device for COMTRADE.
  - Correction of an issue when exporting a Converter that operates as a slack in island mode. Although this was exported as a Infeeder, it was not topologically connected to the network.

- Resupply
  Correction when applying switching operations when switches are resupplied.

- Power Control – Reactive Power Supply
  Correction of the incorrectly issued warning message (W 2451). The warning had no effect on the results.

- Operating Points
  The ambient temperature at operating points was only taken into account if profiles were also used for time series.

- Protection Documentation
  - The new switches change the topology of the network during the update, which means that the network graphic in the protection documentation could no longer be displayed correctly. To rectify this problem for existing diagrams, the newly created nodes and switches are generated at the position of the original node.
  - Correction of an error when saving and loading the legend attributes, whereby the background color, line color and line pattern were not saved or restored.
- Distance Zones Data Screen Form
  The selective grading section was locked when "Manual" was selected. This problem has been fixed.
- Network Element Screen Form
  The selection of a field in the dialog box was not saved.
- Documentation
  Correction of incorrect graphics in the HTML help "Protection.chm".
- Excel Import
  Correction of an error when importing the special attribute "Flag_Terminal" during Excel import.
- CIM 16 Import – Extensions for LV Insight
  - Detailed error output for problems and topology errors.
  - Information on the number of switches, breakers and disconnectors in the element overview.
  - Correction of an error when importing the graphic of node elements, whereby the element contour had to have at least 3 points (node, terminal contour, symbol point) – an import using node and symbol position was not possible.

**PSS SINCAL Pipe Networks**

- Infeeder Heating/Cooling
  For power supplies with constant supply power, which have the same temperature as the return temperature, the calculation was completed without an error message.

**PSS SINCAL Automation**

- Calculation Automation – ChangeVariant
  Changing the variant was previously only possible after loading the database in the simulation process. This has been changed to increase performance and simplify the use of the function.
- Calculation Automation – Use of Variants
  Correction of an bug when using APIs to create/modify elements in the calculation, whereby the data records were not changed or created for the variant. Therefore, the data was always changed for the original variant.

**PSS NETOMAC**

- Power Flow
  Improvement of convergence.
- Stability Limit

Correction of an error when processing the control settings when starting from the PSS NETOMAC user interface.

- Templates
  - The PLO file of the template had an incorrect format, which caused the plot definition dialog box to not work properly.
  - Correction when creating a new project from a template. The files of the template project were only renamed if they were assigned in the project. Additional files in the directories kept the "template default name".