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# Danfoss PLUS+1 Service Tool Software

## Release Notes

### Risk Reduction

This file contains important supplementary and late-breaking information that may not appear in the main product documentation. We recommend that you read this file in its entirety.

Fixes to known issues in the tool will only be made in the latest version; previous versions will not be patched. Known issues that remain in the release are described in the section Important Advisory - Potential User Issues.

It is recommended to always use the latest released version to benefit from the latest improvements. If another version than the latest released version is used, carefully read the What Is Fixed sections for all later releases to understand what known risks that exists and need to be addressed.

For more details on risk reduction, see chapter Risk Reduction in PLUS+1 GUIDE User Manual.

### Product License

#### Existing Users

After installing PLUS+1 GUIDE/Service Tool, your License Key is automatically activated in this version if your maintenance date covers the release date of this version.

#### New Users

The PLUS+1 software tool chain includes PLUS+1 GUIDE and PLUS+1 Service Tool. This powerful tool chain allows for the rapid development of mobile machine applications. A free Express license is available for all users. Professional developers will benefit from our Professional version that enables additional tools and libraries to speed up the software development process. Add-on modules are also available for the Professional version for an annual subscription fee so you can tailor the tool chain to meet your needs and only pay for the additional features you choose.

#### Professional License

PLUS+1 GUIDE and Service Tool Professional License can be ordered through your local Danfoss sales representative. After purchase, you will be sent an email with a Product Key that will allow you to activate a License Key. Please follow the instructions under Help in the License Manager.

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## Free Trial License

A free, time limited, trial license of PLUS+1 GUIDE and Service Tool Professional can be obtained using an automated sequence from the License Manager dialog. This license will allow you to try all features of PLUS+1 GUIDE and Service Tool (including add-ons). Projects created with a trial license will be tagged with a trial label and the use licensed content will disable save, edit, and compile rights when opened with an Express license.

## Free Express License

A free Express license will also be issued when you request a free Trial license using the automated sequence from the License Manager dialog. This license provides basic functionality for developing PLUS+1 GUIDE and Service Tool applications using the latest release. Express licenses are valid for one year and users can request one Express license with each major release of PLUS+1 GUIDE and Service Tool.

## GUIDE Add-Ons License (FuncSafety)

This is an Add-On license for GUIDE

- It has SAP number 11179525, GUIDE ADDONS LICENSE
- It enables
  - Version Control Support
  - Test Tool
  - Compare SCS
  - Dependency View
  - SIL2 Compilation
  - Traceability Properties
  - Static Analyzer

## Integration: Simulink S-Function Add-On License (SimModel)

This is an Add-On license for GUIDE

- It has SAP number 11179531, GUIDE ADDON LICENSE\_SIMULINK
- It enables
  - GUIDE-to-Simulink

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## Service Tool Add-Ons License (ST\_Pro)

This is an Add-On license for Service Tool

- It has SAP number 11179527, GUIDE ADDONS ST\_Pro
- It enables
  - CAN Xplorer design functionality
  - Scripting Toolbox design functionality

## License Support

For general license related question, send an email to:

[plus1license@danfoss.com](mailto:plus1license@danfoss.com)

Support for technical PLUS+1 License related issues can be obtained by sending an email to:

[plus+1helpdesk@danfoss.com](mailto:plus+1helpdesk@danfoss.com)

## System requirements

	Service Tool Minimum	GUIDE Minimum	GUIDE/Service Tool Recommended
CPU*	64-bit (x64), 4 cores, 2012 or later		
OS**	64-bit Windows 10 (It is recommended to keep the OS up-to-date with the latest updates)		
UAC	Local Administrator Access is needed only for installation of the tools, not for running them		
RAM	4 GB		16 GB
HD	>10 GB Free, HDD		>10 GB Free, SSD
Resolution	1280 x 1024		1920 x 1080
Email	For license registration		
PDF	Any recent standards compliant pdf reader		
Web	Any recent standards compliant web browser (for HTML based F1 help)		
XML	MSXML 4.0 Service Pack 2 (Microsoft XML Core Services)		
.Net	N/A	Version 4 (Full) is needed for PLC code support in GUIDE	

\* The CPU should be intended for at least laptop use. Processors designed for netbooks, tablets or similar are not recommended.

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## Version 12.1

12.1.7 (June 2020)

### **New Features and Functionality (see the Service Tool User & Design Manuals for more detailed information)**

- [F00507] **Feature:** PLUS+1 InterLink Remote gateway support
  - Support for connecting to remote devices.
  - Login using your Danfoss Profile from gateway selection dialog to see list of accessible devices with status information (Online/Offline/Busy).
  - Previously selected remote device is not retained before Service Tool sessions and connections are always made from the gateway selection dialog.
  
- [F00541] **Feature extension:** Updated User Interface, Part II
  - The tool now supports DPI settings other than 100%.
  - No need to restart the Service Tool after changing theme.
  - Includes updated icons, colors and general look.
  
- [W00677] **Feature extension:** Additional settings in Find/Replace Signal Names
  - Advanced Page Parameter Options are now available in the 'Replace' tab.
  - Select 'Retain global parameter settings' to keep the current global settings (min/max/default values, and unit/comment) for the resulting signal.
  - Select 'Skip (use existing)' to use the existing global settings for the resulting signal (previous behavior).
  
- [W00693] **Feature extension:** Full bevel option for Advanced Page components
  - The bevel type 'Full' is now available for Advanced Page components.
  
- [W00730] **Feature extension:** Invisible border for log & parameter values
  - The setting 'Text style value' is now available for Advanced Page log and parameter components.
  
- [W00705] **Feature extension:** Log file states in Advanced Pages visibility properties
  - The states 'Logging to file' and 'Playing log file' are now available in Advanced Page visibility settings.
  
- [W00983] **Feature extension:** Additional settings in Advanced Pages Array List component
  - Now possible to use text lookup tables.
  - New settings available: 'Show index column' and 'Show headers'.
  
- [F00447] **For Evaluation:** KWP2000 and UDS protocol support
  - Configurable using Diagnostic Data files in .json format

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## What is Fixed

- [P100005187] Error message improved when Service Tool read Application log data that is invalid (issue in HWD). Error 'Application Log empty' was reported when using application logs larger than 16 MB.
- [P100005207] An option to retain Min/Max/Default values for signals when replacing signal names is now available in the Find/Replace dialog (see W00677 as well).
- [P100005216] Exception 'EEncodingError in module Plus1Diag.dll' displayed when logging certain STRING signals containing invalid data.
- [P100005267] Objects cut off in Basic Page Graphical Overview.
- [P100005269] Advanced Page background images were not scaled correctly when displayed on monitors using DPI settings other than 100%.
- [P100005276] The Advanced Page Graph component property "Show data type" was not saved.
- [P100005288] Calling script API function on parameters with STRING data type failed and other issues related to Advanced Page String components.
- [P100005303] Playback of log files did not work correctly when not connected to the system used in the log file.
- [P100005338] The menu item "Create ECU Parameter Transfer file" was missing in the Advanced Page hyperlink selection.
- [P100005344] The Advanced Page String Parameter component mode was changed in some situations.
- [P100005341] It was not possible to download P1T files using .mlhx files unless the P1T file already matched the current application in the connected system.
- [P100005369] "ECU Parameter Transfer" parent menu item was incorrectly disabled in offline mode.
- [P100005376] Advanced Page component using signals with access rights was not displayed correctly in offline mode.
- [P100005158] An error was displayed when entering Graphical Overview design (Basic Pages) in certain situations.
- [P100005160] The 'Show Horizontal Grid' text was not fully shown in the Advanced Page Graph component properties dialog.
- [P100005162] In dark theme, the hover background color could bleed through the text for buttons using SVG image.
- [P100005190] The signal lists in certain Advanced Page dialogs were not sorted in alphabetical order.
- [P100005192] It was not possible to change certain component properties in the Inspector when multiple Advanced Page components were selected.

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- [P100005193] The error message 'Out of system resources' was shown for certain Advanced Pages.
- [P100005200] Menu 'Design/Service Application Properties' was enabled when using locked P1D files.
- [P100005201] The OK/Apply/Cancel buttons in Advanced Page Graph component properties disappeared in certain situations.
- [P100005202] Advanced Page components did not snap to grid in certain situations.
- [P100005203] Current page not pre-selected when opening Find/Replace Signal Names from an Advanced Page.
- [P100005205] Invalid signals were not shown as invalid when a lookup table was selected in Advanced Page components.
- [P100005267] The Advanced Page String Parameter component value field was not resized according to selected font.
- [P100005280] The positioning of signals and setting for oscilloscope was incorrect in basic page.
- [P100005325] The CAN Xplorer Database Definition XSD file described in the Design Manual was outdated.
- [P100005352] The Advanced Page String Parameter had some keyboard input issues.
- [P100005358] The beam caret in Advanced Page Parameter component value edit fields was not visible in certain situations.
- [P100005360] Missing My Documents folder caused a crash at start of Service Tool.
- [P100005371] The Service Tool appeared as "not responding" when minimizing the Translation Editor.
- [P100004857] Access denied was reported when writing to "ServiceTool.MasterPassword.Write" while also writing to other restricted parameters
- [P100005359] Access violation error when reported when entering Advanced Page design if page had a 256 Color bitmap as background image.
- [P100005251] The scrollbar position in the Advanced Page object inspector was not updated correctly in all situations.
- [P100005304] The Tool Key dialog when using 'Create ECU parameter transfer file' has an incorrect icon.
- [P100005323] The replace file dialog buttons background color was incorrect for dark theme.
- [P100005049] Log and parameter parent tree items in System Navigator gets expanded when changing between Normal and Design view.
- [P100005112] The report file dialog was partly hidden if the user settings dialog was positioned partly outside the screen.
- [P100005049] Collapsed log and parameter pages folder was expanded when changing between Normal and Design view.

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[P100004905] Bitwise parameter in offline was not imported when parameter import file is used.

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## Important Advisory—Potential User Issues

- **CAN bus and Machine state**

- It is required that the Machine is in a safe state before the Service Tool is connected to a system.
- When logging a large number of signals on a Service Tool page, the CAN bus load can become quite high. This risks to interfere with other CAN communications on the bus.

Workaround: The PLUS+1 protocol provides a number of options which allows to limit the CAN bus load:

- KWP2000\_STmin : This option sets the minimum time between any two CAN messages in a Keyword Protocol 2000 protocol block transfer on the CAN bus. Even a value of 1 will decrease the bus load significantly. Default value is 0.

- KWP2000\_BlockSize : This option sets the maximum number of CAN messages in a Keyword Protocol 2000 protocol block transfer that can be sent in a sequence without a flow control message. In most cases, tuning this option will provide the best tradeoff between performance and acceptable average bus load.

- MaxEcuTxBuffer : This option can be used to set a limit on the maximum number of data bytes transferred over the CAN bus in a single Keyword Protocol 2000 protocol block from an ECU to the Service Tool while logging. A value of 0 (default) is used to indicate no limit other than what is supported by the ECU.

Each option described above can be overridden in any P1D that needs to log a large number of signals on a single Page. The optimal combination of option values should be determined when designing the P1D for a system.

The selected Log Period also has an effect on the resulting bus load while logging.

- **OS and other environment considerations**

- If you are experiencing problems accessing network locations, then please make sure you are not running as admin.
- The application title bar might not be fully visible in certain situations when multiple displays are not aligned and the Windows taskbar is top aligned.

- **Installation**

- The user must exit Service Tool to install/uninstall other Service Tool versions.  
Recommendation: Close all open programs before installing the tool.
- When updating to the latest driver package, it is in some cases necessary to manually enable the drivers in the Windows Device Manager. The devices should appear under the “Danfoss” node in the Device Manager tree structure. If the driver is marked as disabled, then right click it and select enable from the context menu. If the devices appear under the “Sauer-Danfoss” node in the Device Manager tree structure, then the old driver was not completely uninstalled, and then the Update menu item should be selected instead. In some cases when the devices appear under the “Sauer-Danfoss” node in the Device manager, it is necessary to first use the Uninstall menu item, and then re-install the driver package.



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- **DP600 Series Graphical Terminals**

- When using Recover ECU on DP600 Series Graphical Terminals, option Specify ECU needs to be selected using Net: 0 and Node: 239 if the ECU is connected in a system with other PLUS+1™ compliant products.

Workaround: If multiple DP600 Series Graphical Terminals are connected in the system, disconnect the ECU from the other ECUs before using Recover ECU.

- DP600 Series Graphical Terminals does not report a warning during System Scan if the ECU is in boot loader mode.

- **Service Pages**

- When downloading parameters, always be sure that the download checkbox is checked for each parameter to be downloaded.

- Certain date formats in Windows Region and Language settings (e.g. Italian (Switzerland)) are not supported when reading log files created in version 7.0 or earlier.

Workaround: Set Format to English in Windows Region and Language settings [P100003066].

- **Themes**

- The tool might flicker while changing theme.

- Some minor graphical issues or glitches may occur after changing theme. Restart the tool to resolve any issues.

- **Application Log**

- When reading Application Log texts with the Service Tool, the maximum number of characters in a text is limited.

- **File Download**

- The file size limit for displaying LHX Readme files in the Service Tool is 256 kB.

- **Multilingual Service Applications**

- Translation files (.i18n) exported from the Translation Editor in Service Tool 7.2.9 cannot be opened in this and future versions due to file format changes. These files will not be available in the import file list when importing files.

- **Read and Set Bits individually**

- It is not possible to download both bit values and base value for a parameter in the same parameter download action.

- When designing Advanced Pages, make sure that potential user defined min/max values for a certain parameter are not exceeded by enabling bits for the same parameter.

- When using the CAN Xplorer and Service Signals protocols, the naming of parameters may prevent you from logging/writing bit values in certain situations (i.e. if both the parameters "Name" and "Name.<valid bit number>" are available as base parameter names).

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- **CAN Xplorer**

- When using messages with overlapping signals, the behavior is undefined when it comes to the order of encoding signal values into messages.
- When changing CAN ID dynamically, the ID is always validated as a 29-bit value. When changing an extended message to a standard message, only the first 11 bits will be used.

- **CAN Monitor**

- CAN messages transmitted by the PLUS+1 Service Tool are not displayed when using PLUS+1 InterLink gateways.
- The order between sent and received CAN messages with the same timestamp is not guaranteed.
- The displayed timestamp is set by the Service Tool when receiving/transmitting the CAN message.
- RTR messages are not flagged when using RP1210 gateways.
- Error frames are not supported on all gateways.

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## Product Information on the Web

For technical support, visit the Danfoss support pages:

[powersolutions.danfoss.com/Products/MobileElectronics/PLUS1Guide/PLUS1GuideSupport/index.htm](https://powersolutions.danfoss.com/Products/MobileElectronics/PLUS1Guide/PLUS1GuideSupport/index.htm)

Telephone support:

North America: 1.888.50PLUS1 (+1-888-507-5871)

Europe: +46 10 44 00 300

China: +86-21-3418-5288

Email support: [plus+1helpdesk@danfoss.com](mailto:plus+1helpdesk@danfoss.com)

PLUS+1 Forum: <http://www.plus1forum.danfoss.com/index.php>

Please report all suggested enhancements and great ideas to:

PLUS+1 Help desk

Please report all defects to:

PLUS+1 Help desk

Many thanks for all of your support.

The System Development Tools Team.

## Disclaimer

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