

## How to download a functional safety program to the Safety PLC

FAQ No.009

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## Preamble

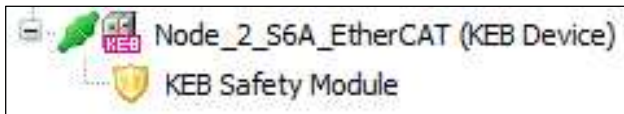
This document explains step by step how to download a functionally safe application to a Safety PLC. The download takes place via a separate certified Safety editor. A CODESYS software package which can be obtained from KEB Automation is necessary for the execution.

The programming of the functionally safe application can be realized with the development environment COMBIVIS studio 6.

### Important hint:

This FAQ refers exclusively to the verification and download of a Safety PLC application by using a TÜV certified Safety Editor.

A parameter download to the safety modules of the KEB drives is managed by another certified editor, which is implemented in the software COMBIVIS studio 6 or COMBIVIS 6.




## Installation of the CODESYS software





The necessary CODESYS software package can be obtained from KEB Automation and has to be installed on a PC. It is required that no other CODESYS programming environment is installed.

**Hint:** CODESYS shouldn't be installed on the same computer like COMBIVIS studio 6. If no other computer is available, then consider the using of a virtual machine.

1. The CODESYS software package is provided as a zip file.

Name	Änderungsdatum	Typ	Größe
 Codesys incl Saftey package.7z	30.01.2019 10:53	7Z-Datei	925.873 KB

2. The zip file has to be unpacked before installation and has the following content:

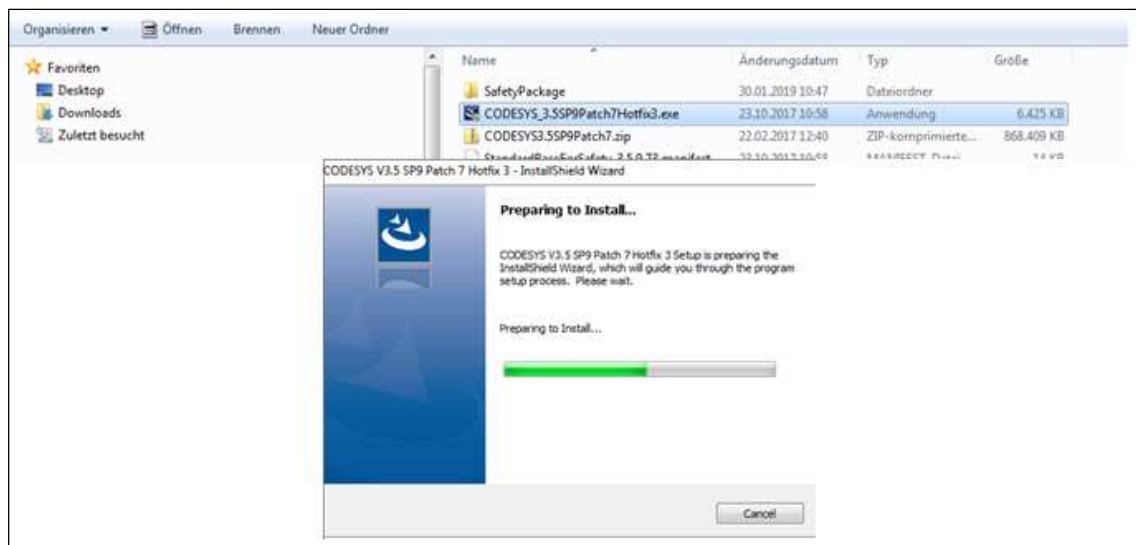
Name	Änderungsdatum	Typ	Größe
 SafetyPackage	30.01.2019 10:47	Dateiordner	
 CODESYS_3.5SP9Patch7Hotfix3.exe	23.10.2017 10:58	Anwendung	6.425 KB
 CODESYS3.5SP9Patch7.zip	22.02.2017 12:40	ZIP-komprimierte...	868.409 KB
 StandardBaseForSafety_3.5.9.73.manifest	23.10.2017 10:58	MANIFEST-Datei	14 KB

- Here is a further zip file „CODESYS3.5SP9Patch7.zip“, which has also to be unpacked.

Name	Typ	Komprimierte Größe	Kennw...
ISSetupPrerequisites	Dateiordner		
Autorun.inf	Setup-Informationen	1 KB	Nein
CODESYSV35SP9Patch7.msi	Windows Installer-Paket	123.689 KB	Nein
Data1.cab	CAB-Datei	618.011 KB	Nein
ISSetup.dll	Anwendungserweiterung	2.357 KB	Nein
Setup_CODESYSV35SP9Patch7.exe	Anwendung	3.158 KB	Nein
VersionKey.ini	Konfigurationseinstellung...	1 KB	Nein

- The EXE file „Setup\_CODESYSV3.5SP9Patch7.exe“ is installed first.
- The next step is to install the „CODESYS\_3.5SP9Patch7Hotfix3.exe“ which is also included in the software package.

Name	Änderungsdatum	Typ	Größe
SafetyPackage	30.01.2019 10:47	Dateiordner	
CODESYS_3.5SP9Patch7Hotfix3.exe	23.10.2017 10:58	Anwendung	6.425 KB
CODESYS3.5SP9Patch7.zip	22.02.2017 12:40	ZIP-komprimierte...	868.409 KB
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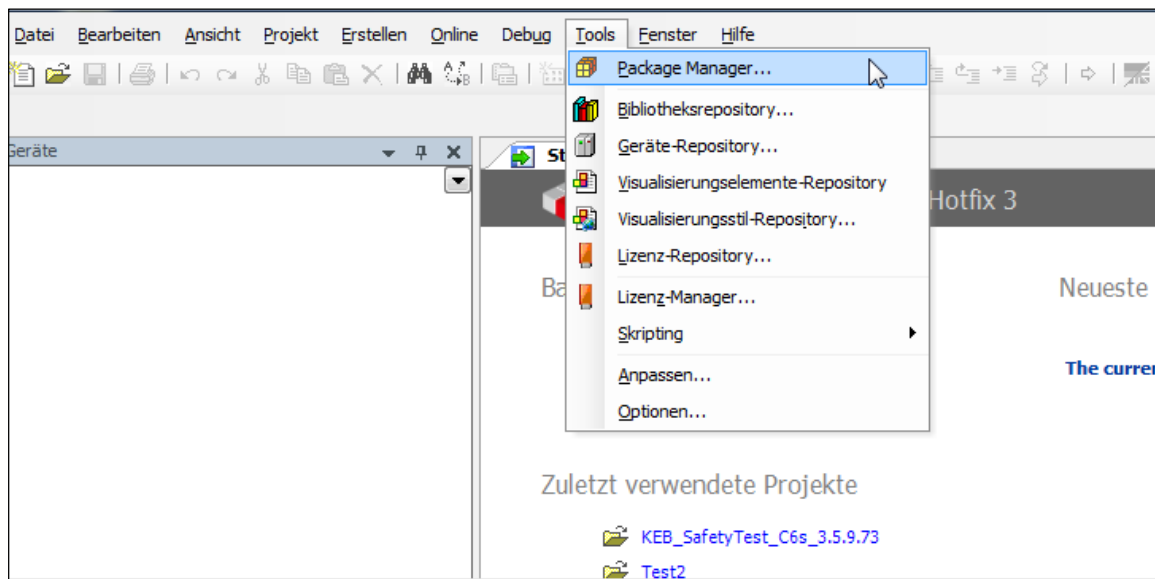


## Installation of the CODESYS Safety Package

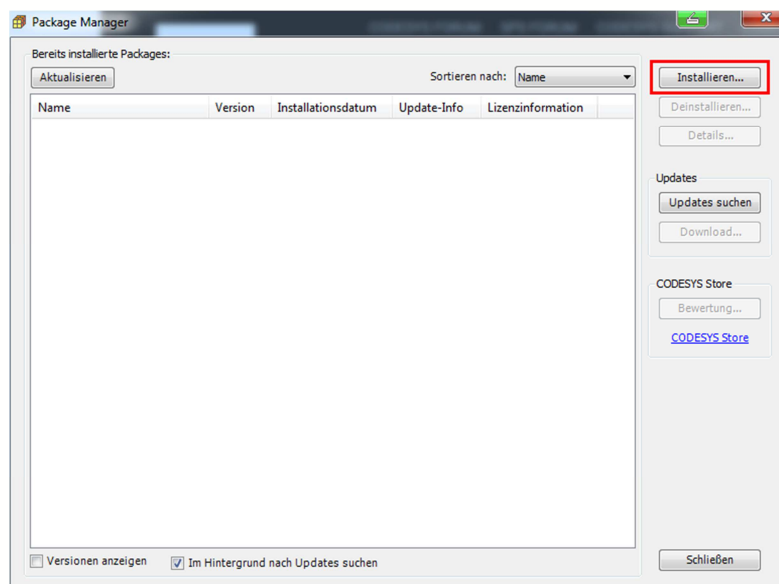
- After the Installation of the CODESYS software, the CODESYS Safety Package has also to be

installed.

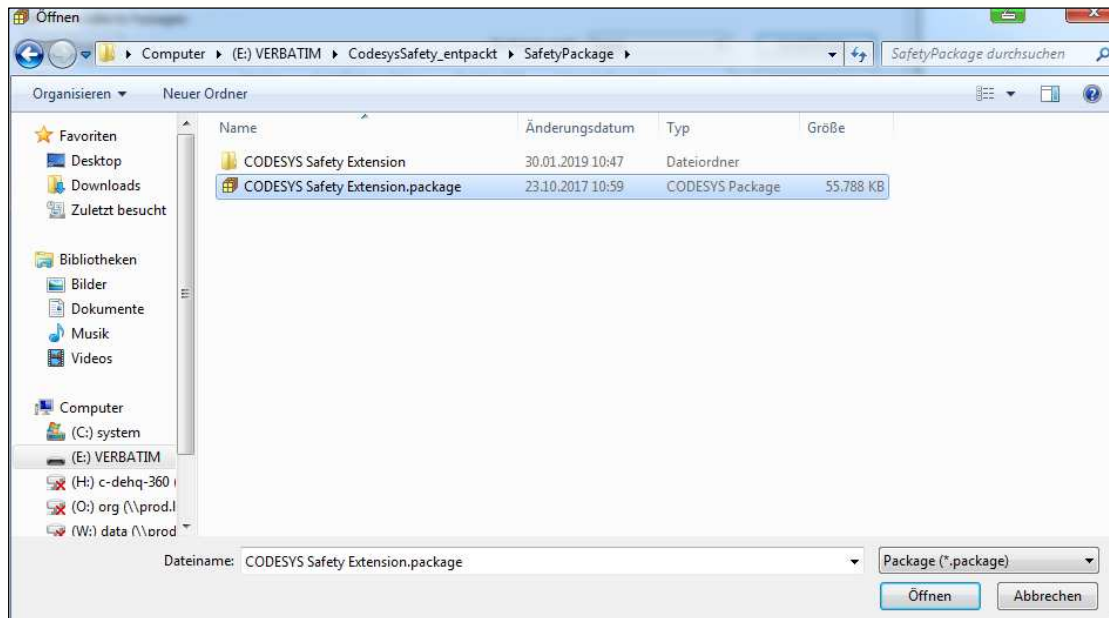
2. Therefore open the CODESYS software.
3. The required Package Manager can be found in the Tab „Tools“.



4. Within the Package Manager, you can add further CODESYS packages using the Button „Install“.



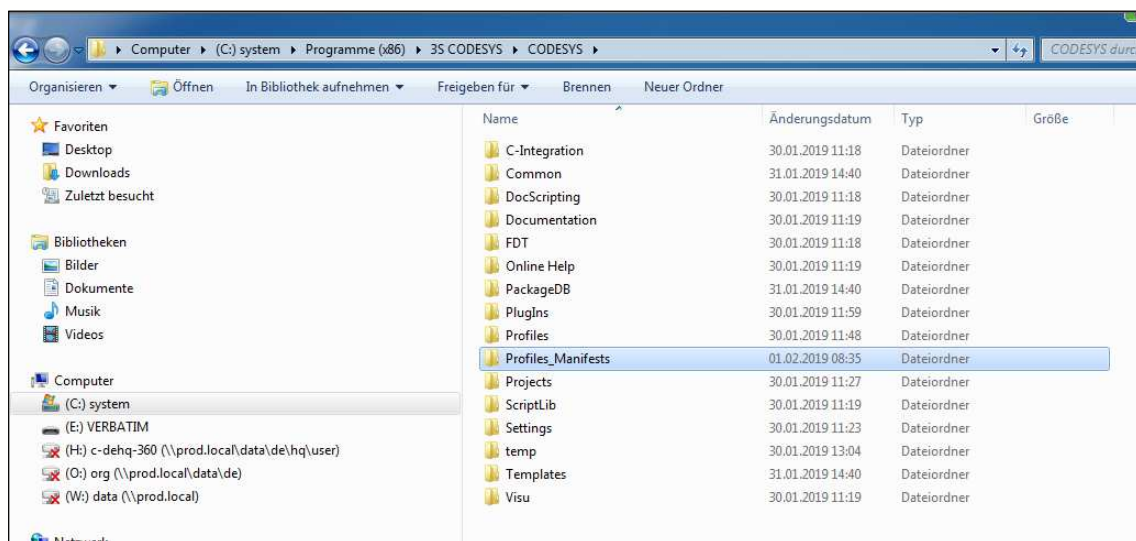
5. The required „CODESYS Safety Extension package“ can be found in the folder „SafetyPackage“.



6. The package can be opened with the button „Open“
7. After opening the package, the status of the Installation can be read in the previous window.

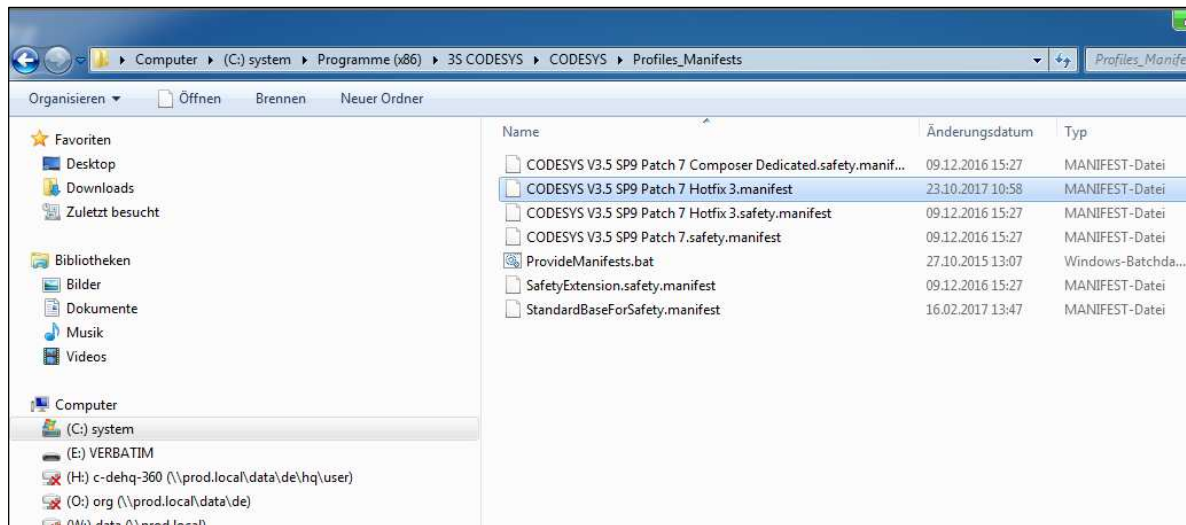
## Installation of the manifests

1. After installing the „CODESYS Safety Extension package“, a manifest is required.
2. The manifest has to be installed in the same folder as the CODESYS software on the PC.



3. The manifest can be found in the software package with the extension „.manifest“.

4. It has to be copied in the marked folder „Profiles\_Manifests“.
5. Now it is necessary to change the name of the Manifest to „CODESYS V3.5 SP9 Patch 7 Hotfix 3.manifest“. (The name should correspond to the CODESYS profile)



6. Now the installation on the PC has been completed and the PC must be restarted. The safety application can then be downloaded.

## Download of the Safety application

### Preparation of the application in COMBIVIS studio 6

1. Up to this point, the complete machine application has been developed with COMBIVIS studio 6. The procedure described here must be applied for the last download to the Safety PLC.

**HINT:** It is important to use the CODESYS safety manual for the development and verification. This manual is part of the development environment COMBIVIS studio 6 and can be called as follows:  
➔ menu bar „Help > Show Safety Manual“

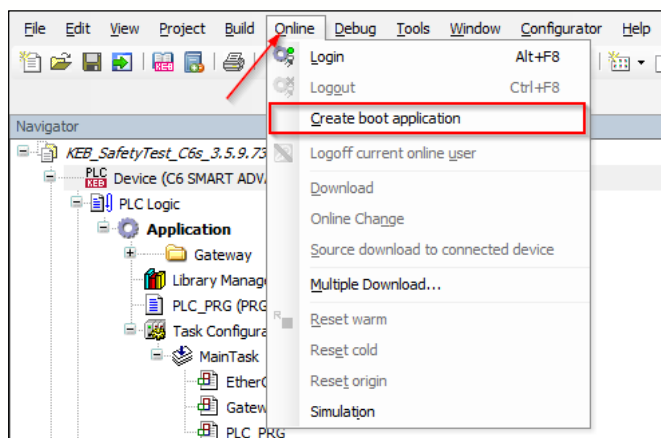
2. After the application has been completely programmed, it is advisable to execute a pinning at that point. This pinning can also be used to document the current software version on the Safety PLC.



## Start of the EtherCAT master

The start of the EtherCAT master and the download of the machine application to the appropriate control take place in the development environment COMBIVIS studio 6.

5. Login to the Control (Hint: application has to be set to active)
6. Start the application with the start button in the menu bar.
7. The generation of a boot application is done „online“ → boot-application is stored directly on the device

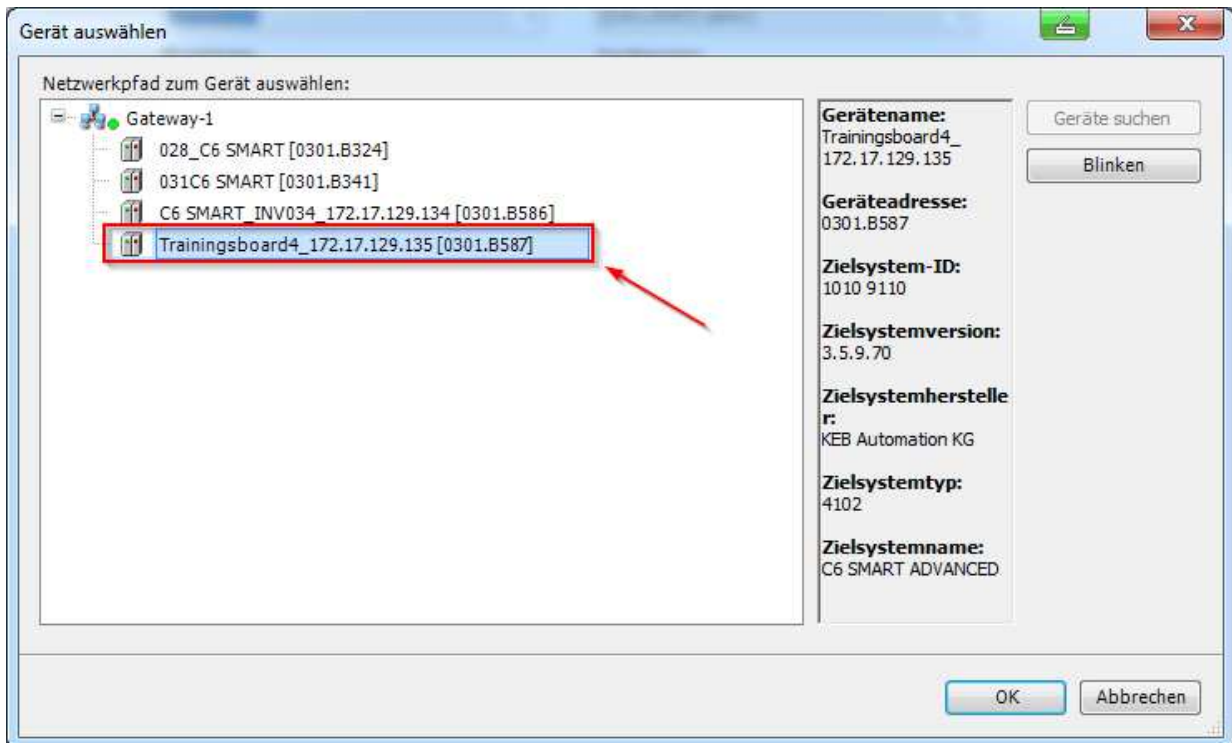
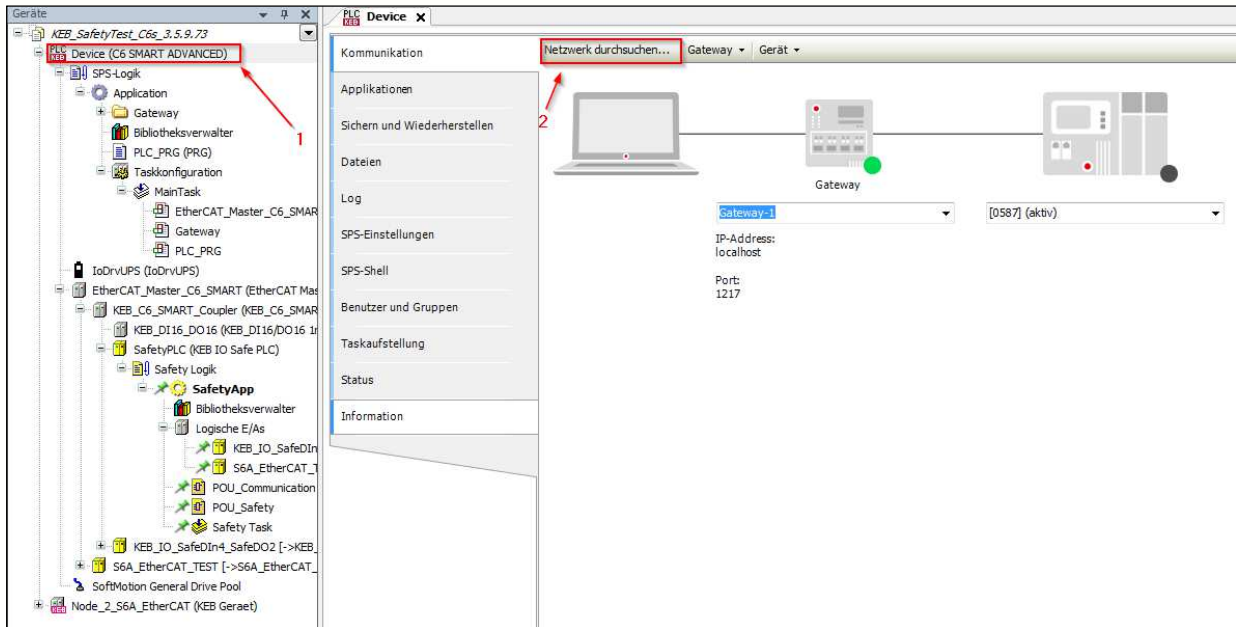


## Open the project archive in CODESYS

8. Open the program „CODESYS V3.5 SP9 Patch7 Hotfix 3“.
9. Open the created project archive of COMBIVIS studio 6 with the CODESYS software.
10. Confirm the opening window with „Yes“.
11. Search the network for the PLC by the tap “Devices”
12. Select the appropriate controller from the network → in this Example “Trainingsboard 4“.  
(A login is not necessary because the PLC is already running)



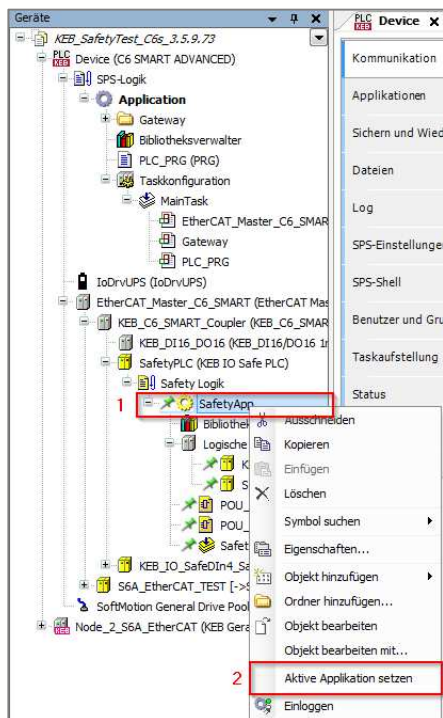
# FAQ COMBIVIS



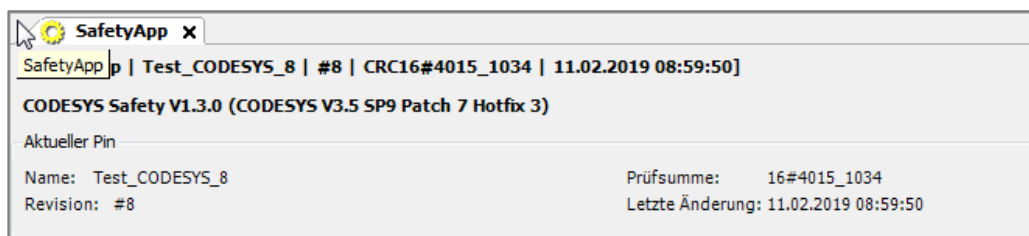
## Login to the Safety PLC

1. First, the Safety PLC must be activated in the program structure by setting the Safety application to active. („right click on SafetyApp -> „Set Active path““)

**Hint:** An active application is recognized on the bold letters.

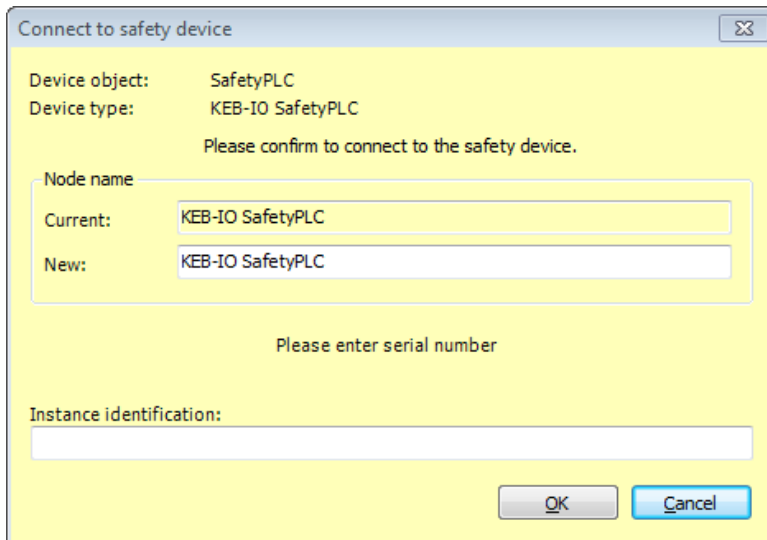


2. Check the correct software version by using the header in the window “SafetyApp”.
3. If the software version is correct, the download can be continued.

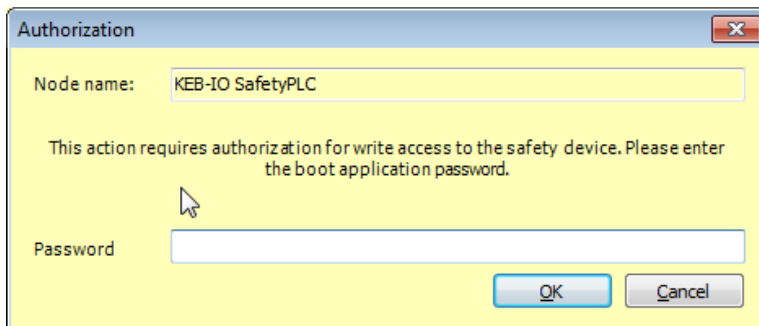


4. Login to the Safety PLC.
5. Read through the pop-up window and confirm the correctness.

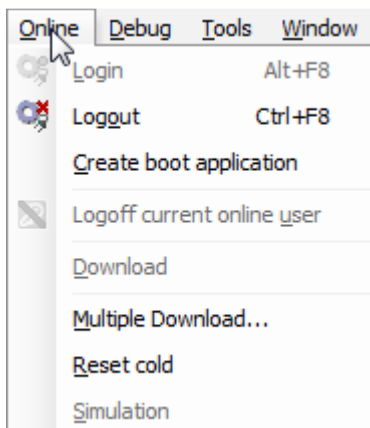
6. Identify the instance with the Safety PLC serial number.



7. Confirm or create/enter the password of the device (Safety PLC).



8. Create a boot application on the Safety PLC.  
(Menu bar „Online > Create boot application“).



## Disclaimer

KEB Automation KG reserves the right to change/adapt specifications and technical data without prior notification. The safety and warning reference specified in this manual is not exhaustive. Although the manual and the information contained in it is made with care, KEB does not accept responsibility for misprint or other errors or resulting damages. The marks and product names are trademarks or registered trademarks of the respective title owners.

The information contained in the technical documentation, as well as any user-specific advice in verbal or in written form are made to the best of our knowledge and information about the application. However, they are considered for information only without responsibility. This also applies to any violation of industrial property rights of a third-party.

Inspection of our units in view of their suitability for the intended use must be done generally by the user. Inspections are particularly necessary, if changes are executed, which serve for the further development or adaptation of our products to the applications (hardware, software or download lists). Inspections must be repeated completely, even if only parts of hardware, software or download lists are modified.

**Application and use of our units in the target products is outside of our control and therefore lies exclusively in the area of responsibility of the user.**

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