

Instructions on how to update the firmware from V2.2.x.x. to V2.5.xx up to V2.6.x.x

Valid for: SINAMICS S120

Hardware prerequisites:

The firmware versions that can be used depend on the hardware release of the Control Units.

The CU310DP, Order No. 6SL3040-0LA00-0AA1 and CU310PN, Order No. 6SL3040-0LA01-0AA1 are supported from FW2.5 and higher.

For the CU320 an upgrade to device version V2.6 is only possible with a hardware release of Order No. 6SL3040-0MA00-0AA1 and Version C or higher.

The Control Unit must be replaced if a CU320 with an older hardware release is to be upgraded.

The version of your Control Unit is stamped on the type plate:

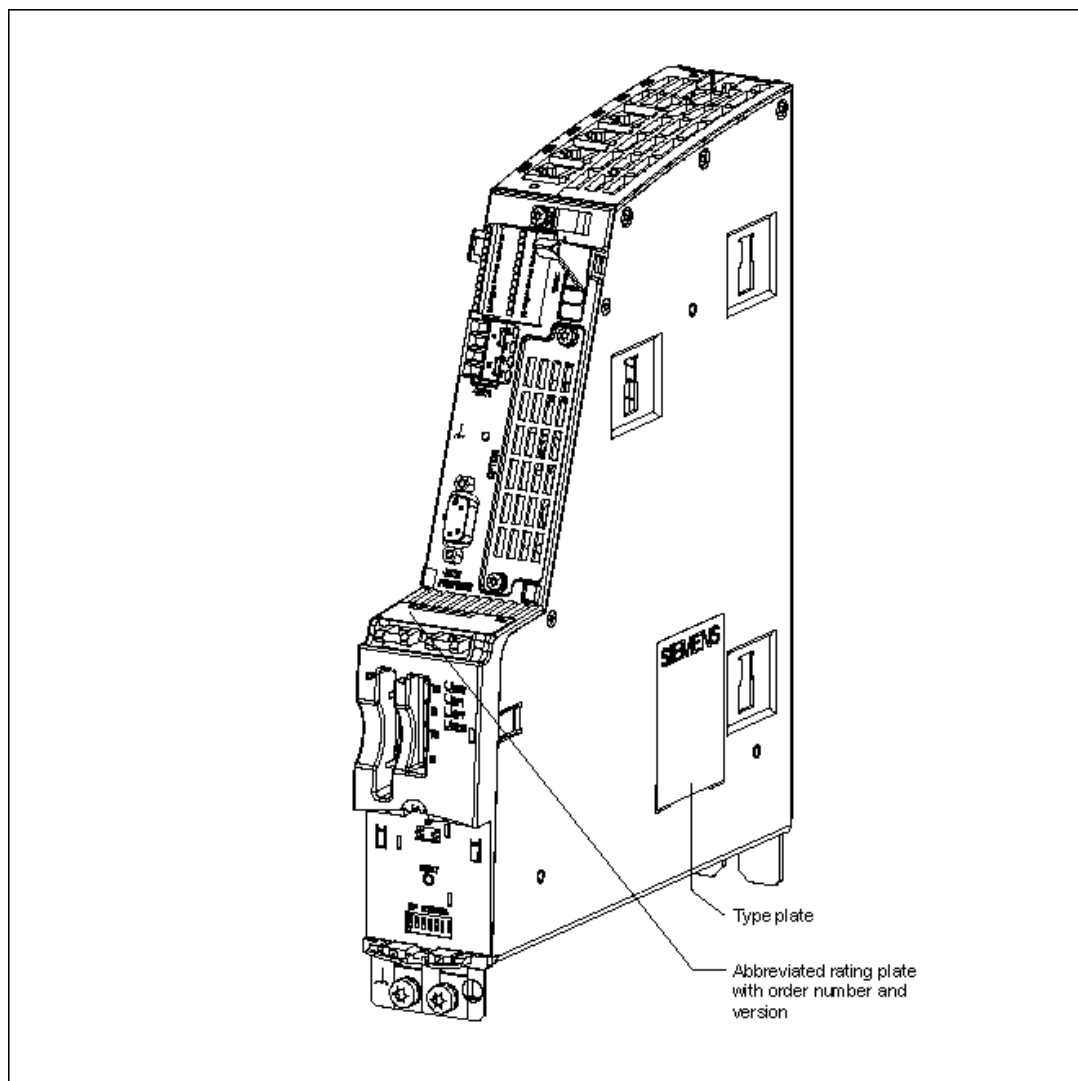


Fig. 1: CU320 type plate with the version data

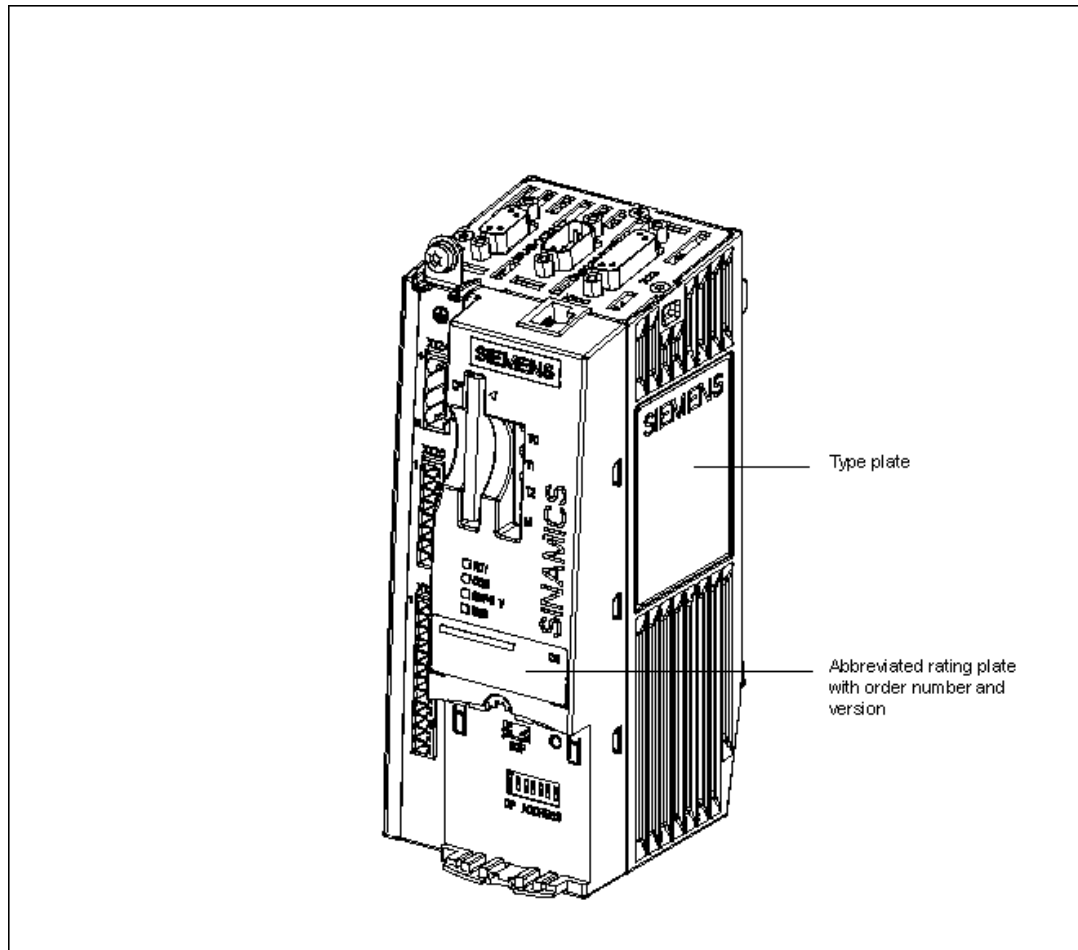


Fig. 2: CU310 type plate with version data

From firmware versions ≥ 2.4 , the firmware releases can only be completely downloaded onto 64 MB CompactFlash cards. This size of card is supplied from firmware version 2.4 and higher. A firmware ≥ 2.4 can only be downloaded onto a 32 MB CompactFlash card by first deleting languages that are not required for the AOP (only the AOP30 uses the languages). CompactFlash cards with firmware version 2.1 (16 MB cards) cannot be upgraded to newer versions.

Upgrade instructions:

Prerequisites:

- CompactFlash card reader that can be connected to a PC/PG
- PC/PG with STARTER Version $\geq 4.1.2.4$ with a communication interface to the Control Unit

Starting point:

The starting point is a SINAMICS S120 drive unit that is to be changed to another firmware release.

Backing-up data

The following steps are performed to back-up the parameterization data.

1. Connect the PG/PC to the drive, e.g. using the PROFIBUS connecting cable.
2. Upload the possibly available project on the CF card into the PG using STARTER and if required, generate a back-up copy.
If the firmware has a new device version number (e.g. it has been changed from V2.5.x to V2.6.x), then the required drive unit must be additionally selected in the STARTER project tree and the required device version selected using the righthand mouse key, Target device → Device version:

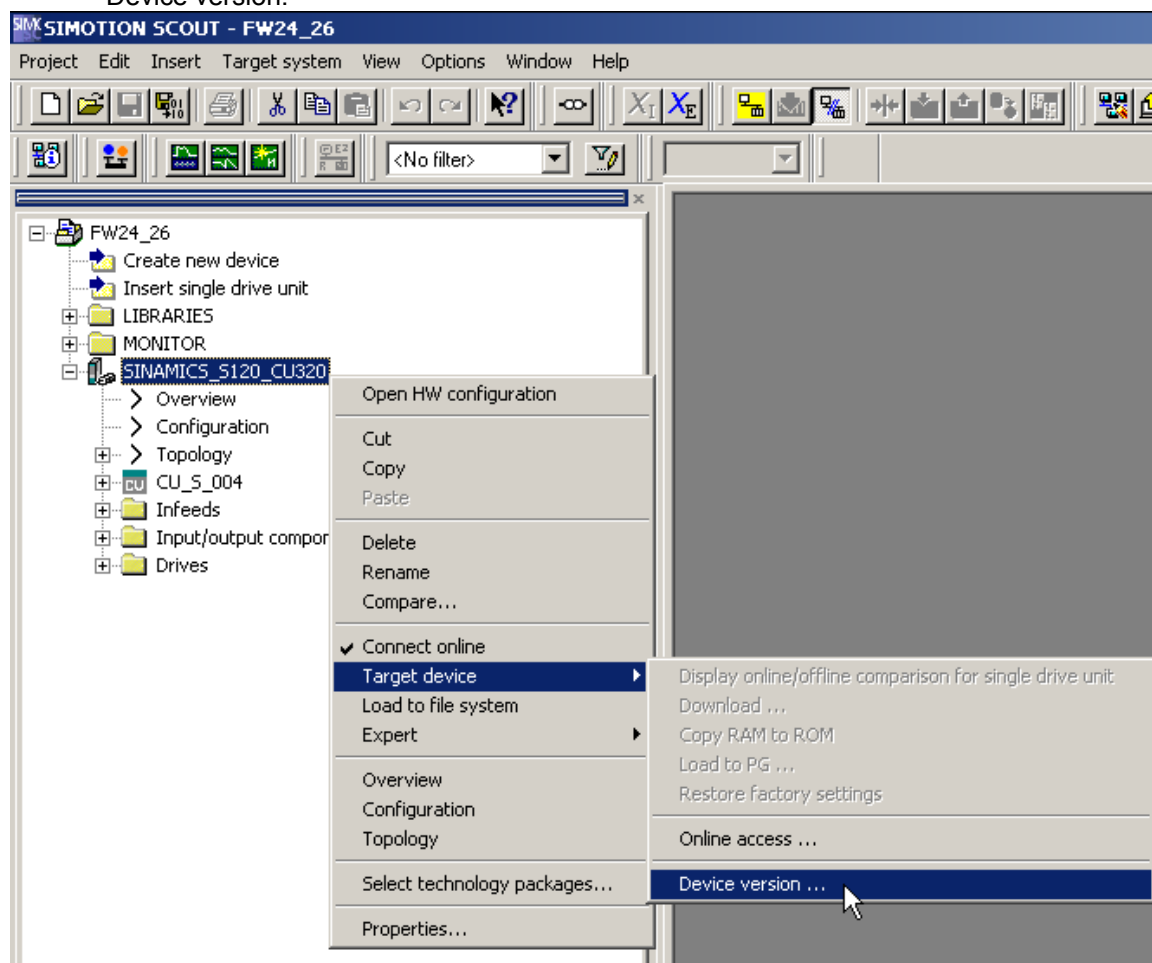


Fig. 3: STARTER menu selection “Device version”

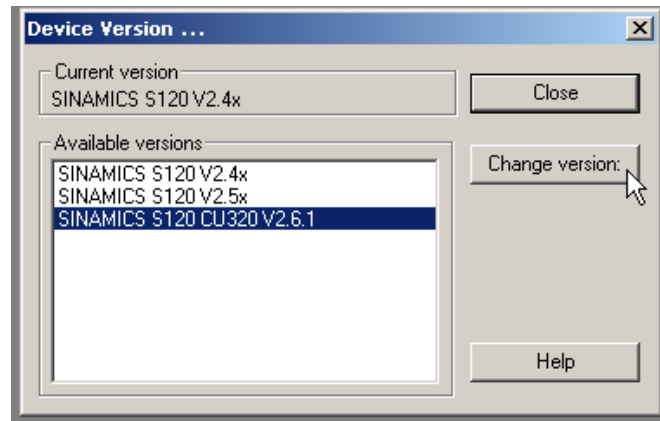


Fig. 4: STARTER menu “Device version”

NOTICE:

The following upgrade operation deletes all project data and parameters on the CompactFlash card!

3. Power-down the 24 V DC electronics power supply.
4. Withdraw the CompactFlash card and insert it in the reader at/in the PC/PG
5. If a KEYS folder is available on the CompactFlash card, save the KEYS folder on the PC/PG using Windows Explorer. This folder contains possible License Keys for software options requiring a license.
6. At the PC, using Windows Explorer, delete all files and folders on the CompactFlash card.
7. Using a ZIP extractor, e.g. “WINZIP”, unzip the new firmware into any temporary directory at/in the PC/PG.
8. If a 32 MB card is being used, the directories of the languages not required for the AOP should be deleted in the SIEMENS\SINAMICS\DATA\DESC directory.
9. Using Windows Explorer, move the contents of the temporary directory to the CompactFlash card.
10. If a KEYS folder is available, download the KEYS folder from the PC/PG into the root directory of the CompactFlash card using Windows Explorer.

11. In the STARTER project tree, select the drive unit and using the righthand mouse key click-on “Load into the file system” and then select the root directory of the CompactFlash card. The project with the complete drive parameterization – including possible DCC libraries – is then transferred to the CompactFlash card.

It goes without saying that later when connected online to the drive unit, the project can be transferred to the CompactFlash card using “Download to target device” and then copying from the RAM to ROM.

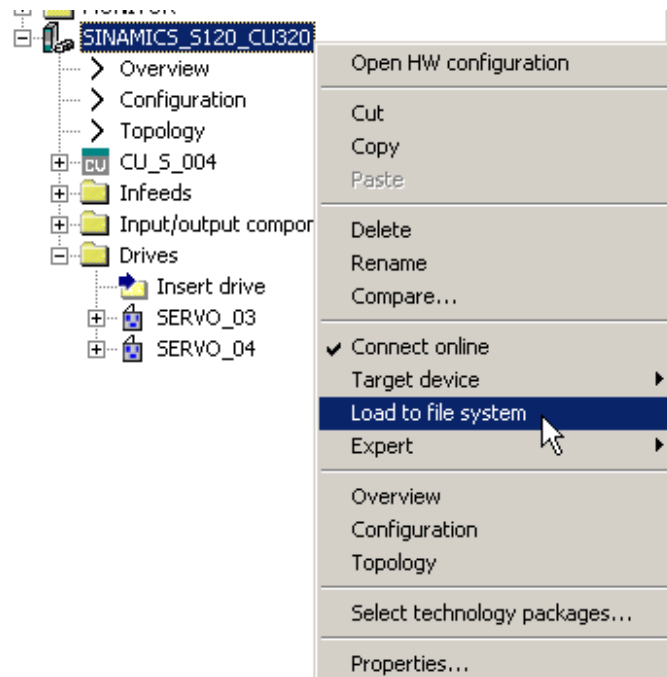


Fig. 5: STARTER menu selection “Download into the file system”

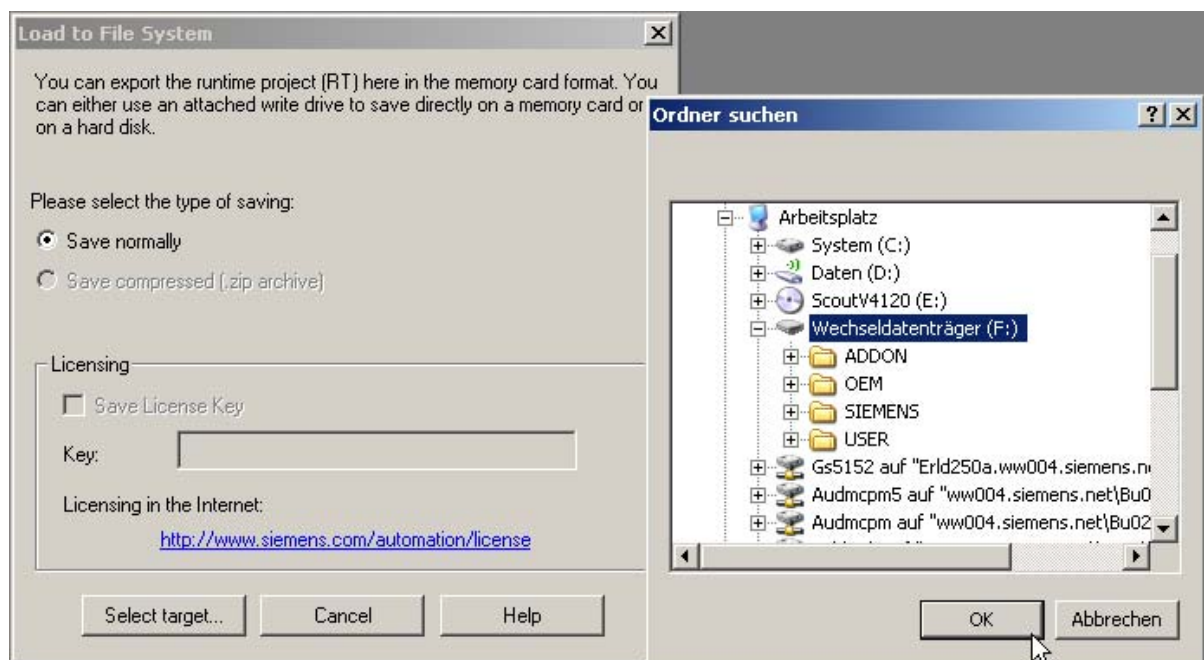


Fig. 6: STARTER menu “Download into the file system”

12. Insert the CompactFlash card into the CU310/CU320
13. Power-up the 24 V DC electronics power supply again
14. From Firmware V2.5.x and higher, the firmware is automatically updated.
During this time, the RDY (READY) LED flashes orange on the Control Unit with a frequency of 0.5 Hz.

Level	Time	Source	Message
 Warning	13.04.70 04:10:51:025	SINAMICS_S120_CU320 : A_INF_02	1306 : Firmware of the DRIVE-CLiQ component being updated(2)

Fig. 7: STARTER alarm display while the component firmware is being updated

After the firmware has been updated, the LED flashes with a higher frequency at 2 Hz.
Warning 1007 is present for the updated components, which is displayed in the alarm window of STARTER.

☒ Display information			
Level	Time	Source	Message
 Warning	13.04.70 04:12:11:698	SINAMICS_S120_CU320 : A_INF_02	1007 : POWER ON for DRIVE-CLiQ component required(Component number: 2)

Alarms Control panel Symbol browser Compile/check output Target system output Diagnostics overview

Fig. 8: STARTER alarm display after updating the component firmware

After the firmware has been updated, power-down the 24 V DC power supply voltage and power-up again.

15. Completed. The drive unit is again ready for operation.
The current firmware versions of the modules can be read in the version overview.

FW24_26		PROFIdrive message frame Version overview				
- Create new device - Insert single drive unit - LIBRARIES - MONITOR - SINAMICS_S120_CU320 - Automatic Configuration - Overview - Configuration - Topology - CU_S_004 - Infeds - Input/output components - Drives		☐ Project set ☐ Specified ☒ Actual CF card serial number: ST0B8365550000007333				
Component	-No.	FW version	Type	Order no.	HW version	Serial no.
CU_S_004.Control_Unit_1	1	2603500	Closed-loop control module	Actual	Actual	Actual
TB30_05.TB30_12	12	--	TB30	6SL3040-0MA00-0AA1	E	T-U32045773
A_INF_02.Line_module_2	2	2603500	Infeed	6SL3130-7TE21-6AA1	A	T-S32000678
A_INF_02.VSM_3	3	2603500	VSM	6SL3053-0AA00-3AA0	A	T-U42010188
SERVO_03.Motor_Module_4	4	2603500	Power_unit	6SL3120-2TE15-0AA3	B	T-V82043314
SERVO_03.SM_9	9	2603500	SMC30	6SL3055-0AA00-5CA2	A	T-W22019243
SERVO_04.Motor_Module_5	5	2603500	Power_unit	6SL3120-2TE15-0AA3	B	T-V82043314
SERVO_04.SM_6	6	2603500	SMC20	6SL3055-0AA00-5BA2	A	T-W02071828

Fig. 9: STARTER version overview