

1 Firmware upgrade and downgrade

Preparing a memory card for a firmware upgrade or downgrade

Procedure

1. Proceed as follows to prepare a memory card for the firmware upgrade or downgrade:



1. Download the required firmware to your PC from the Internet.
Download (<https://support.industry.siemens.com/cs/ww/en/view/67364620>)
2. Extract the files to a directory of your choice on your PC.
3. Transfer the unzipped files into the root directory of the memory card.

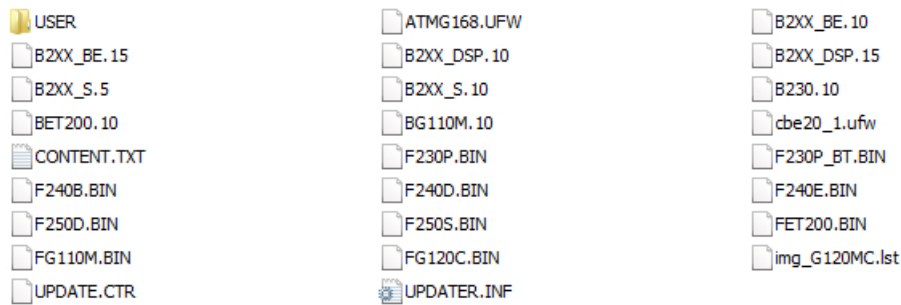


Figure 1-3 Example of memory card contents after the file transfer

Depending on the firmware, the filenames and the number of files may differ from the display above.

The "USER" directory does not exist on unused memory cards. After the memory card is plugged in for the first time, the inverter creates a new "USER" directory.

- You have prepared the memory card for the firmware upgrade or downgrade.

Overview of firmware upgrades and downgrades

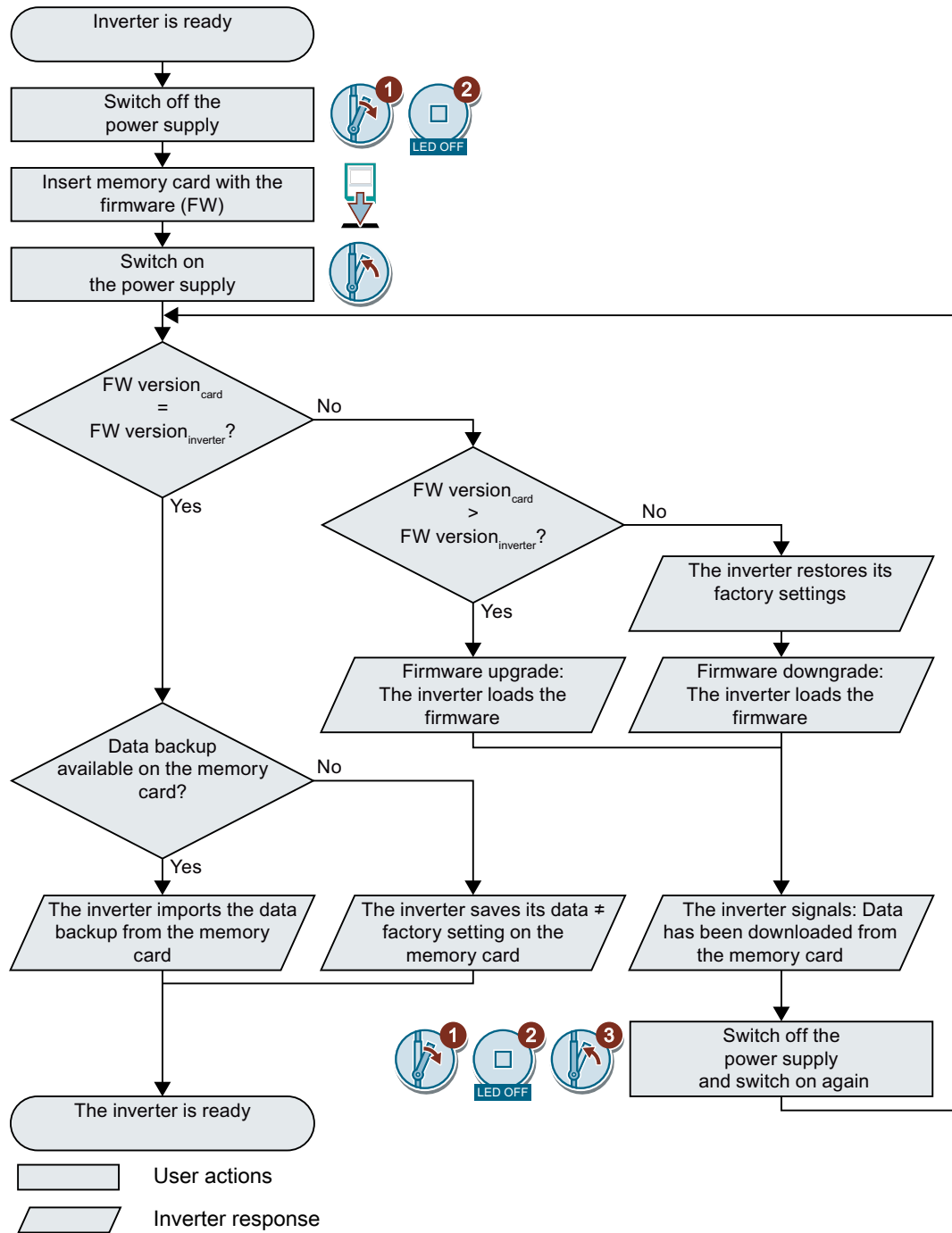


Figure 1-4 Overview of the firmware upgrade and firmware downgrade

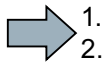
1.1 Upgrading the firmware

When upgrading the firmware, you replace the inverter firmware by a later version. Only update the firmware to a later version if you require the expanded functional scope of the newer version.

Precondition

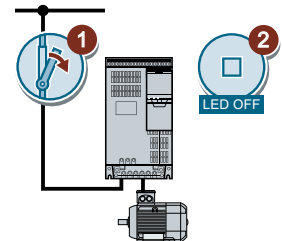
- The firmware version of your inverter is at least V4.5.
- Inverter and memory card have different firmware versions.

Procedure

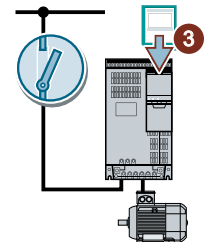


Proceed as follows to upgrade the inverter firmware to a later version:

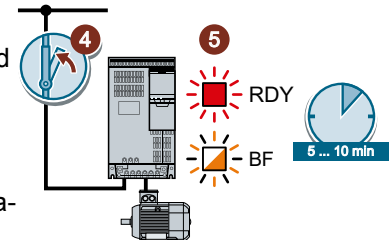
1. Switch off the inverter power supply.
2. Wait until all LEDs on the inverter are dark.



3. Insert the card with the matching firmware into the inverter slot until it latches into place.



4. Switch on the inverter power supply again.
5. The inverter transfers the firmware from the memory card into its memory.
The transfer takes approximately 5 ... 10 minutes.
While data is being transferred, the LED RDY on the inverter stays red. The LED BF flashes orange with a variable frequency.

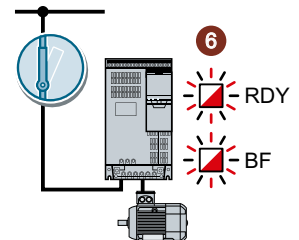


6. At the end of the transfer, the LED RDY and BF slowly flash red (0.5 Hz).

Power supply failure during transfer

The inverter firmware will be incomplete if the power supply fails during the transfer.

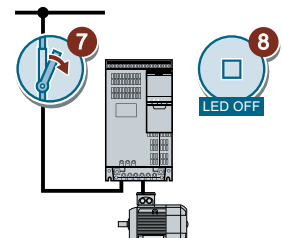
- Start again with step 1 of the instructions.



7. Switch off the inverter power supply.
8. Wait until all LEDs on the inverter are dark.

Decide whether you will withdraw the memory card from the inverter:

- You remove the memory card:
⇒ The inverter keeps its settings.



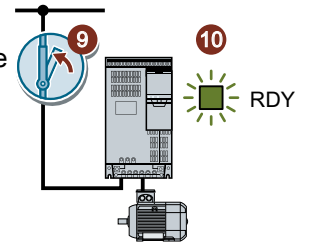
- You leave the memory card in the inverter:
 - ⇒ If the memory card still does not have a data backup of the inverter settings, in step 9 the inverter writes its settings to the memory card.
 - ⇒ If the memory card already includes a data backup, the inverter imports the settings from the memory card in step 9.

9. Switch on the inverter power supply again.

10. If the firmware upgrade was successful, after several seconds the inverter LED RDY turns green.

If the memory card is still inserted, depending on the previous content of the memory card, one of the two following cases has occurred:

- The memory card contains a data backup:
 - ⇒ The inverter has taken the settings from the memory card.
- There was no data backup on the memory card:
 - ⇒ The inverter has written its settings to the memory card.



■ You have upgraded the inverter firmware.

Memory cards with license

If the memory card includes a license, e.g. for the basic positioner, then the memory card must remain inserted after the firmware has been updated.

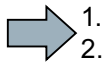
1.2 Firmware downgrade

When downgrading the firmware, you replace the inverter firmware by an older version. Only downgrade the firmware to an older version if, after replacing an inverter, you require the same firmware in all of your inverters.

Precondition

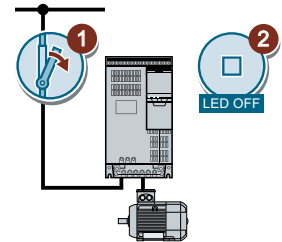
- The firmware version of your inverter is at least V4.6.
- Inverter and memory card have different firmware versions.
- You have backed up your settings on the memory card, in an Operator Panel or in a PC.

Procedure

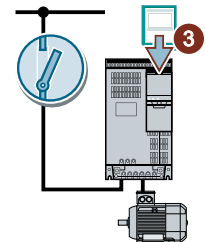


Proceed as follows to downgrade the inverter firmware to an older version:

1. Switch off the inverter power supply.
2. Wait until all LEDs on the inverter are dark.



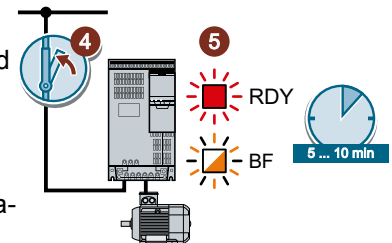
3. Insert the card with the matching firmware into the inverter slot until it latches into place.



4. Switch on the inverter power supply again.
5. The inverter transfers the firmware from the memory card into its memory.

The transfer takes approximately 5 ... 10 minutes.

While data is being transferred, the LED RDY on the inverter stays red. The LED BF flashes orange with a variable frequency.

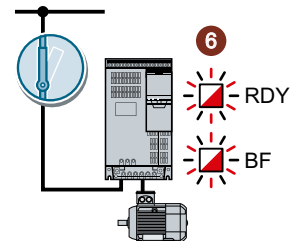


6. At the end of the transfer, the LED RDY and BF slowly flash red (0.5 Hz).

Power supply failure during transfer

The inverter firmware will be incomplete if the power supply fails during the transfer.

- Start again with Step 1 of these instructions.

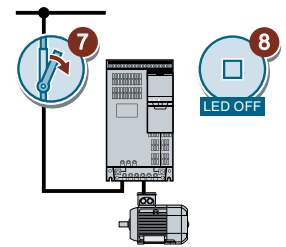


7. Switch off the inverter power supply.

8. Wait until all LEDs on the inverter are dark.

Decide whether you want to withdraw the memory card from the inverter:

- The memory card contains a data backup:
⇒ The inverter has taken the settings from the memory card.
- There was no data backup on the memory card:
⇒ The inverter has the factory setting.

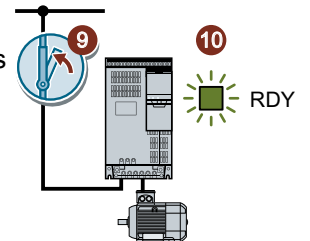


9. Switch on the inverter power supply again.

10. If the firmware downgrade was successful, after several seconds the inverter LED RDY turns green.

If the memory card is still inserted, depending on the previous content of the memory card, one of the two following cases has occurred:

- The memory card contains a data backup:
⇒ The inverter has taken the settings from the memory card.
- There was no data backup on the memory card:
⇒ The inverter has the factory setting.



11. If the memory card did not contain a data backup of the inverter settings, then you must transfer your settings to the inverter from another data backup.

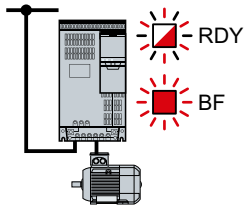
■ You have replaced the inverter's firmware by an older version.

Memory cards with license

If the memory card includes a license, e.g. for the basic positioner, then the memory card must remain inserted after the firmware has been updated.

1.3 Correcting an unsuccessful firmware upgrade or downgrade

How does the inverter signal an unsuccessful upgrade or downgrade?



The inverter signals an unsuccessful firmware upgrade or downgrade by a quickly flashing LED RDY and the lit LED BF.

Correcting an unsuccessful upgrade or downgrade

You can check the following to correct an unsuccessful firmware upgrade or downgrade:

- Does the firmware version of your inverter fulfill the preconditions?
 - For an upgrade, as a minimum V4.5.
 - For a downgrade, as a minimum V4.6.
- Have you correctly inserted the card?
- Does the card contain the correct firmware?
- Repeat the appropriate procedure.