

# Firmware Update Instruction for AC500 CPUs

## 1 What is needed to perform the Firmware Update?

To perform the CPU's firmware update, the following materials are needed:

Part number	Type	Description
1SAP 180 100	MC502	MC502, SD Memory Card
1TNE 968 901	MC503	MC503, SD-Card adaptor (for eCo CPU only)
1SAP 193 000 R0001	DM-TOOL	Automation Builder V1.x, Programming software multi-lingual
1SAP 190 800	FW5xx-UPDA	Self-extracting ZIP data file FW V2.4.4
-	PC-Accessories	SD-Card reader/writer for PC to create SD Card Files

- 1.1 Download the file [*1SAP190800R0244.zip*] from ABB Website and open it. Unpack the files to an arbitrary directory of your PC.
- 1.2 Files ( [*SDCard\_create\_FW\_V2\_x\_x\_to\_V\_2\_4\_4.exe*] and [*3ADR025122M9904.pdf*] ) are unpacked from the ZIP file.
- 1.3 Put the SD Memory Card MC502 into the SD Card reader connected to your PC.
- 1.4 Launch the file [*SDCard\_create\_FW\_V2\_x\_x\_to\_V\_2\_4\_4.exe*] by double-clicking it and select the drive of the SD Memory Card as destination.

The default file structure is automatically created on the MC502 SD Memory Card.

## 2 Methods to update CPU's Firmware:

The Firmware Update could be performed both only with SD Memory Card by booting the PLC or through PLC Browser commands and plugged SD Memory Card into the PLC. The following table shows the update possibilities:

Device / File	SD Memory Card + Power ON	PLC-Browser Command + SD Memory Card
CPU – Bootcode	No	sdboot x (x = according to version; e.g. sdboot 2_3_0)
CPU – Firmware	Yes	sdfirm x (x = according to version; e.g. sdfirm 2_4_4)
CPU – Display (for PM57x, PM58x and PM59x only)	Yes	sddisplay x (x = according to version; e.g. sddisplay 2_8)

Communication Module Firmware	Yes	sdcoupler x (x = 1..4 = external Communication Module)
Onboard I/O – Firmware (for PM55x and PM56x only)	Yes	sdonboardio x (x = according version; e.g. sdonboardio 1_1_4)
RTC – Firmware (for TA561-RTC and TA562-RS-RTC as accessory for PM55x and PM56x)	Yes	sdrtcbat x (x = according version; e.g. sdrtcbat 1_6)

**CAUTION!**



**Risk of damages to the CPUs or Communication Modules!**

Never switch off the power of the CPU during update process. During the update of the display firmware, the CPU is powered off and on again automatically.

### 3 Updating the Firmware on Boot-Up:

To perform the Firmware Update without using the PLC-Browser commands, please follow these steps:

- 3.1 Turn the power of the CPU off.
- 3.2 Insert prepared SD Memory Card into the CPU. The file sdcard.inion the SD Memory Card contains settings that automatically perform the update.
- 3.3 Turn the power of the CPU on.
- 3.4 Updates operation starts (green LED flashing = reading from SD Memory Card / red and green LED flashing fast = flash process)

 **Valid only for AC500-eCo CPUs PM5x4 with firmware version < V2.x.y**

- The 1st Update operation has been finished when the red LED is flashing slowly.
- Power off the CPU and power it on again **without** removing the SD Memory Card

- 3.5 Remove the SD Memory Card and reboot the PLC with the new firmware.

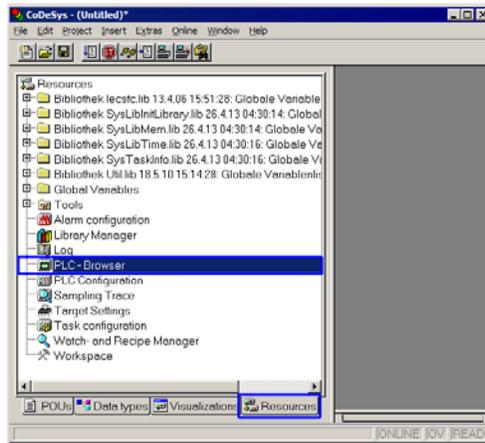
Here are the update results via LED light's colors:

Success	Green LED is flasing slowly (only if all updates were have been performed
Error	Red LED is flashing slowly (only even if one update has not been performed

## 4 Updating the Firmware in Online Mode via PLC-Browser

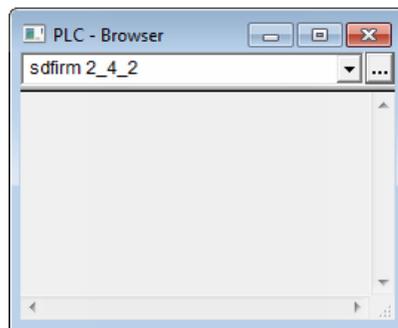
To perform the Firmware Update with the PLC-Browser, you have to be logged in into the PLC with your PC.

4.1 Open the PLC-Browser window by double-clicking it.



4.2 Insert prepared SD Memory Card into the CPU.

4.3 Enter the PLC-Browser command and proceed with *[RETURN]* key, e. g. `sdfirm 2_4_4`



The firmware is updated. After the updating process has been finished, done is shown in the PLC Browser window.



**Valid only for AC500-eCo CPUs PM5x4 with firmware version < V2.x.y**

- At first, the CPU has to be updated to firmware V2.0.x.
- After that, the CPU has to be restarted.
- Now, it can be updated as described in this application note.

4.4 Remove the SD Memory Card and reboot the PLC with the new firmware.



To get some information about the firmware version of the PLC, enter the command `rtsinfo` into the PLC-Browser while online with CPU