

## 8.3 Firmware update procedure

In the goal of always improving the possibilities of the xx7 by implementing new functions without generating too many expenses, it was made possible to update the firmware (Operating system) by anyone.

This is possible through a firmware download on the PCD2.xx7 only.

For the PCD1.M137, the firmware update is not possible by download, it's necessary to change the firmware chip (contact your Saia-representative).

This is done in a very easy way, you will just need the following hardware:

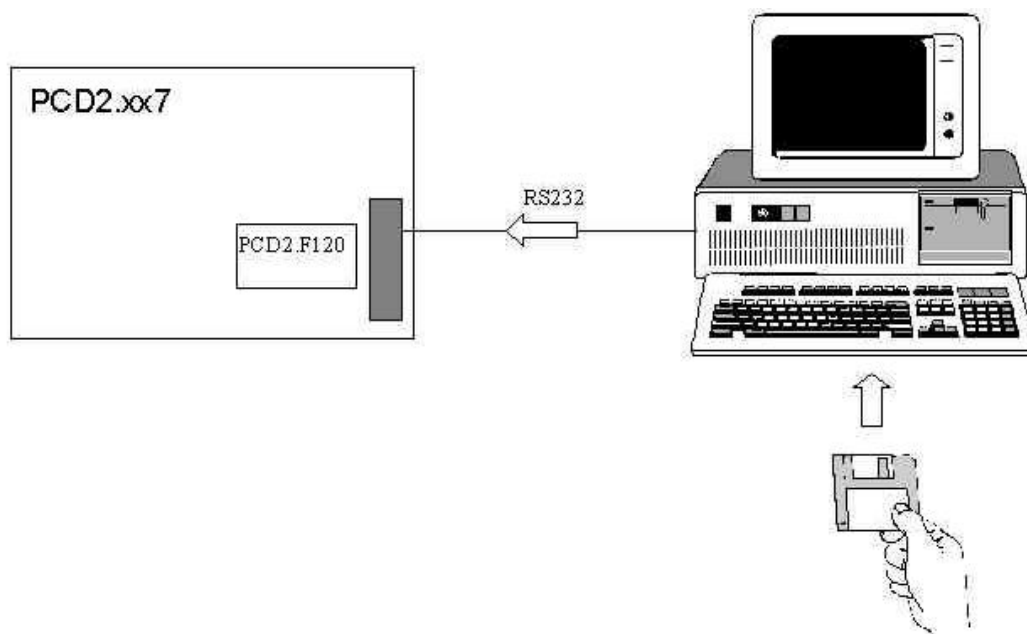
- PC with Dos and a serial port working at least with a baud rate of 9600.
- A serial line cable ( see chapter 8.3.1 for schematic)
- A RS232 module for the PCD (PCD7.F120)

The firmware file will be provided to you with the down load software.

### 8.3.1 Cable schematic

PCD2.xx7 serial interface N°1	PC serial: D-SUB 9 female	Note
PCD terminal 15	D-SUB pin 5	GND
PCD terminal 12	D-SUB pin 3	PC transmit
PCD terminal 11	D-SUB pin 2	PC receive

### 8.3.2 Connecting the system



**Caution :**

Updating the firmware will erase the whole content of the memory (RAM). So this mean all the software functions and the Data Block are erased. At the next start of the PCD, the software will be recovered from the FLASH Eprom, if present. Functions and value in Data Block will be the one which you saved in it.

**Procedure:**

If you don't need to recover the actual software and data in the PCD, start directly the procedure on the step 4.

- 1) Create a new project on your STEP-7 SIMATIC Manager.
- 2) In the project insert an new S7-program.
- 3) From the sub-directory blocs of this new S7-program, make an up-load of the PCD software.

**>> At this point you have a safe of the actual S7-software <<**

- 4) Connect the cable described in the chapter 8.3.1 from your PC to the COM1 of the PCD.xx7.
- 5) Power on the PCD.xx7
  - While the LED run is flashing, switch one time the "RUN-STOP" switch from any position to the other one. (*STOP to RUN or RUN to stop*) .
  - The LED error should flash now, if the LED error is flashing, switch quickly two time the "RUN-STOP" switch .
  - The PCD.xx7 is now ready to receive the firmware.
- 6) Transfer the firmware file on your hard drive.  
You should have several kind of file:
  - DOWNM127.BAT (batch file for the download)
  - FW\_DOWN.EXE ( EXE software for the download)
  - FW\_M127.CFG ( list of firmware to be down load)
  - \*.BLK ( block of the firmware)
- 7) Start a DOS session on your PC
- 8) Type the following command to execute the batch file:
 

```

PCD2.M127
>Downm127 com_number (depending the serial port )
>Downm127 com1 ( for COM1 )
PCD2.M157
>Downm157 com_number (depending the serial port )
      
```

>Downm157 com1 ( for COM1 )

9) The PC is downloading the firmware and your screen look like that:

```

PCD Firmware Download Utility V02.10 (c) SAIA-BURGESS 97-99
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Download to PCD2:
-----
PCD2BIOS.BLK U01.16 0x102 500000000 SAIA PCD2 - BIOS
CPLDM127.BLK U01.08 0x104 200000000 SAIA PCD2 - CPLD Programmer
PERBIOS.BLK U01.11 0x100 200000000 SAIA PCD2 - periphery bios
MPI_K1.BLK U01.15 0x100 200000000 SAIA PCD2 - mpi driver
MPI_K2.BLK U01.17 0x100 200000000 SAIA PCD2 - mpi shell
DPMAST.BLK U01.08 0x100 200000000 SAIA PCD2 - STEP7-Operating System
DP_SLAVE.BLK U01.04 0x100 200000000 SAIA PCD2 - DP-Master
DP_SLAVE.BLK U01.04 0x100 200000000 SAIA PCD2 - DP-Slave
S7.BLK U01.04 0x100 200000000 SAIA PCD2 - S7MS driver
S7.BLK U01.04 0x100 200000000 SAIA PCD2 - system functions
CPLD.BLK U01.08 0x100 200000000 SAIA PCD2 - CPLD
DPR_SBU.BLK U01.08 0x100 200000000 SAIA PCD2 - serial Communication Driver
VERSION2.BLK U01.50 0x22A1 SAIA PCD2 - Version

Erasing Flash OK ***
Loading :: PCD2BIOS.BLK Status : OK ***
Loading :: CPLDM127.BLK Status : 22%_

```

- The download will take some minutes.

10) When the download is completed, the LED “RUN.HALT,ERROR” will blink .

11) Power off the PCD.xx7 and before to power on it, make sure the battery is not in place.

12) Power ON the PCD and **leave it ON for 2 minutes** without making any operation on it or especially do not Turn OFF the POWER.

13) Restore you S7 software by downloading it.

**Caution :**



- Do never stop the downloading while it's in execution. This could severely damage the firmware and you may not be able to operate the PCD.xx7 any more. If this append, contact your supplier.
- Doing the first POWER ON after a firmware update, make sure to leave it ON for 2 minutes.