PACIFIC POWER SOURCE
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FIRMWARE FLASH FROM SD CARD INSTRUCTIONS

Contents

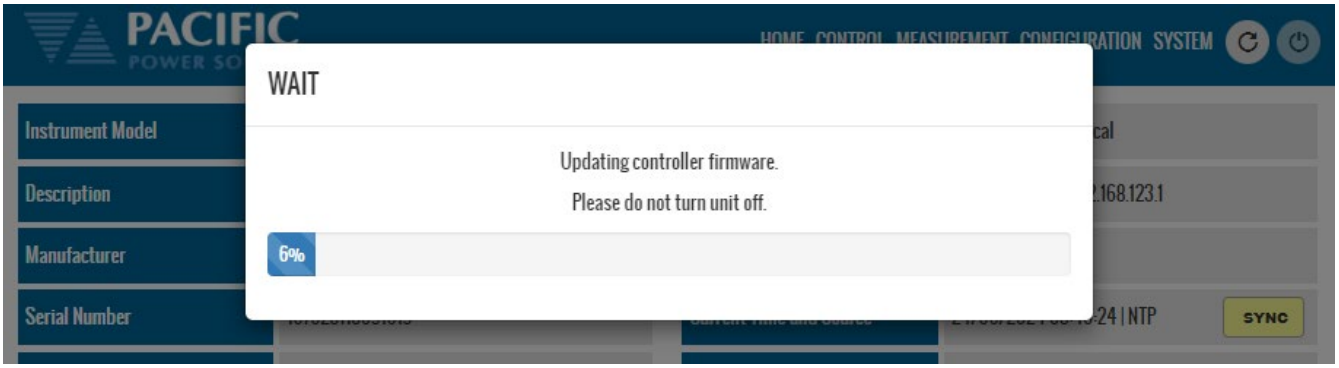
1. Preface

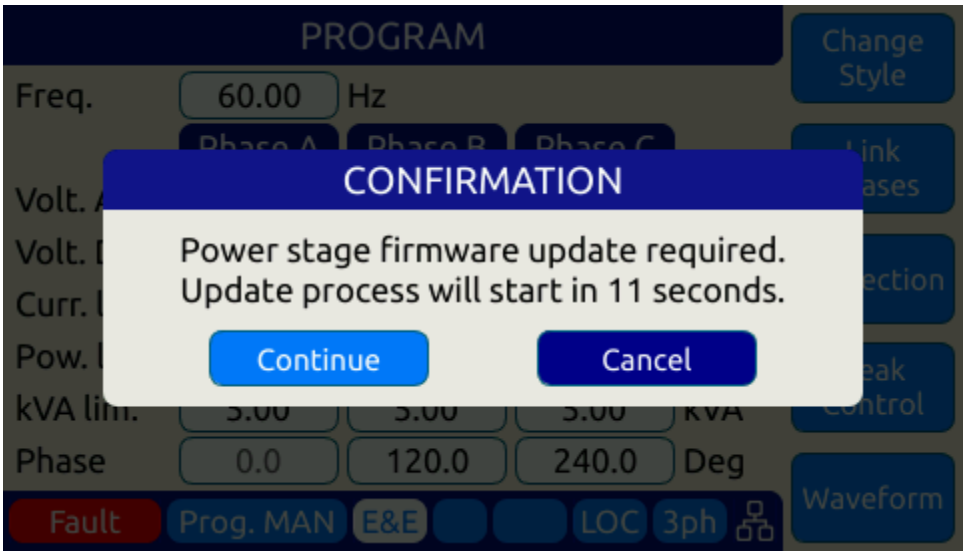
PPS device flash files are provided in the format "*.img.gz" or "*.img" formats, called image files. If the file ends in ".img.gz" then just decompress it to get the ".img" file inside. For decompression, the 7-Zip program can be used which is open-source.

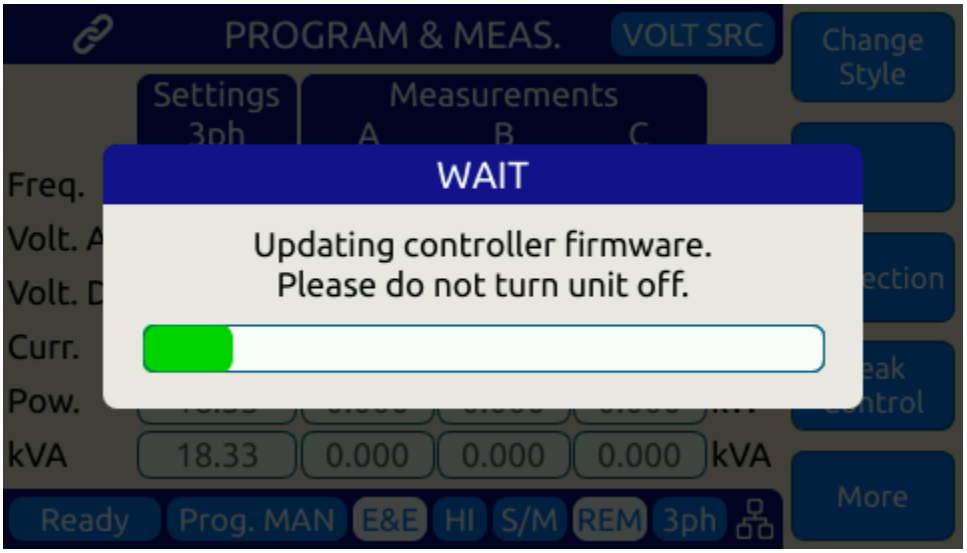
This flash process is used to recover a device that cannot longer boot due to a problem. If the device boots correctly then it is recommended to update using the application note "Firmware update instructions". For flashing an SD Card of at least 1GB, the program Win32 Disk Imager version 0.9.5 and the image file are needed.

Most PPS devices are composed of more than one controller inside and then it is composed of more than one firmware. The "*img" file is the flash image of the front panel; however, it bundles all the latest internal controller firmware. After a front panel flash is performed the next first boot the device verifies if there is newer firmware for the rest of the controllers inside the device. If it finds new ones it updates and informs the user with these messages in the front panel and web page as shown below.

An important note when downgrading firmware (updating to an older FW version) if you find a problem is to execute SCPI command **SYST:FW:INT:UPDATE ALL,FORCE** after the update**.** This command will downgrade all the internal controller firmware to the version coming into the downgraded image, PPS devices do not downgrade internal controllers' firmware by default. The SCPI can be sent by any interface including web page and front panel SCPI console.

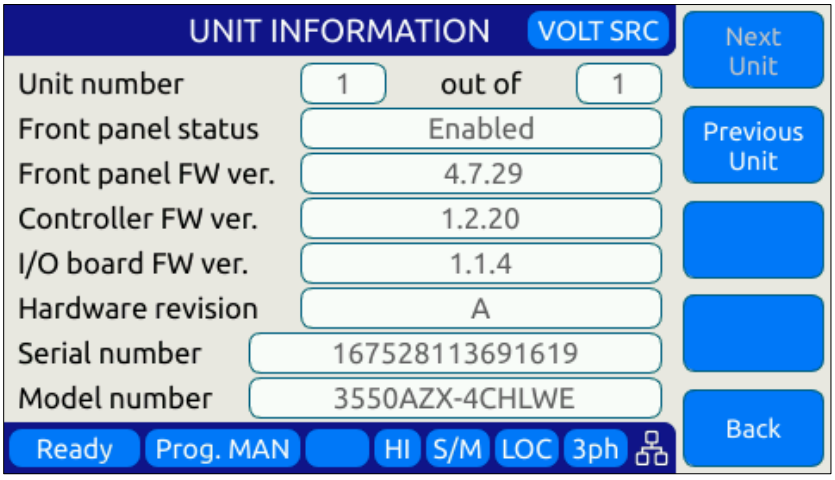


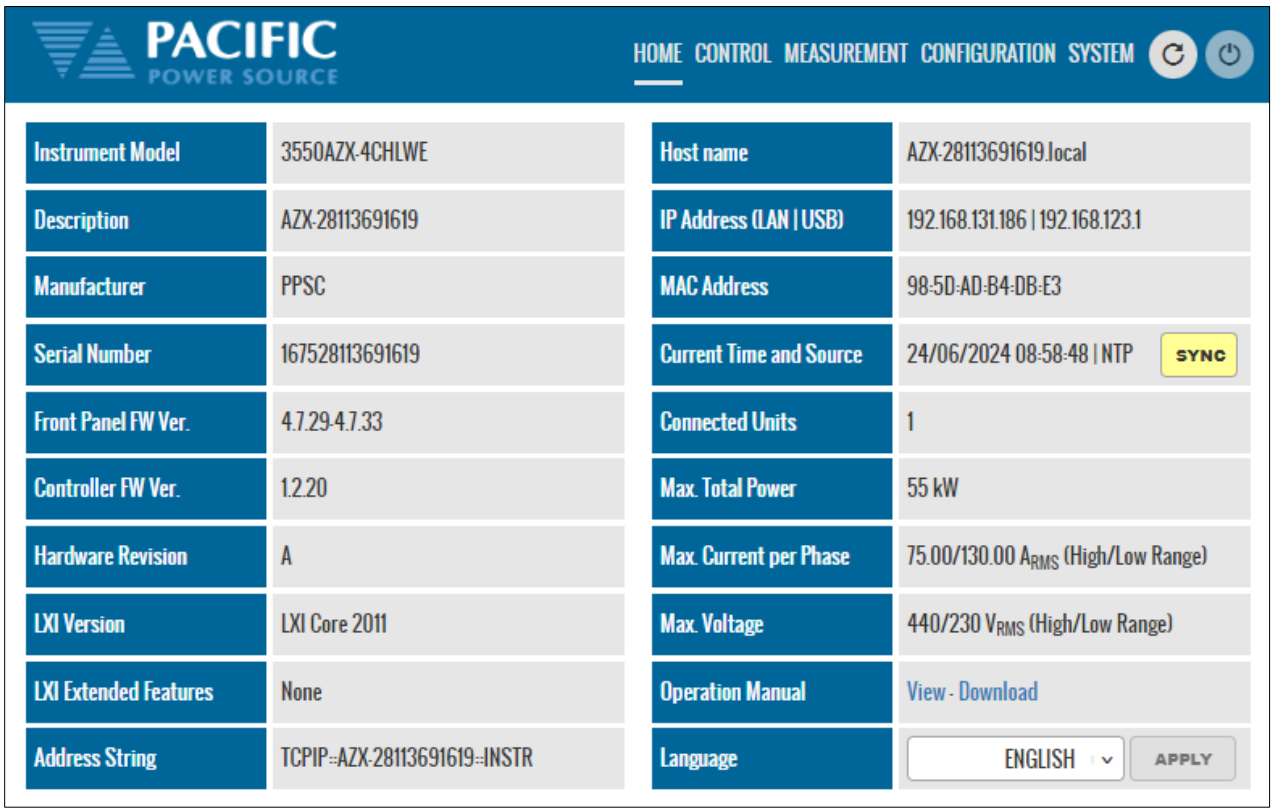




PPS devices could be paralleled, the master front panel updates all the auxiliary firmware controllers with the exception of the auxiliary front panels if the auxiliary devices have a front panel. Updating the front panel of the auxiliary ones is recommended and can be performed with the same methods as for the master, described in this document. If you find any problem the paralleling DVI wires can be disconnected in the rear to make the auxiliary boot as a master and then perform the update as master. Once all the updates are finished, DVIs can be reconnected and boot the system in parallel operation as before.

The current firmware versions on a PPS device can be found on the front panel under SYST -> UNIT INFO screen, on the web page home page, or by SCPI commands. If you are using a web browser, it is recommended to reload the web page after a firmware update is performed.



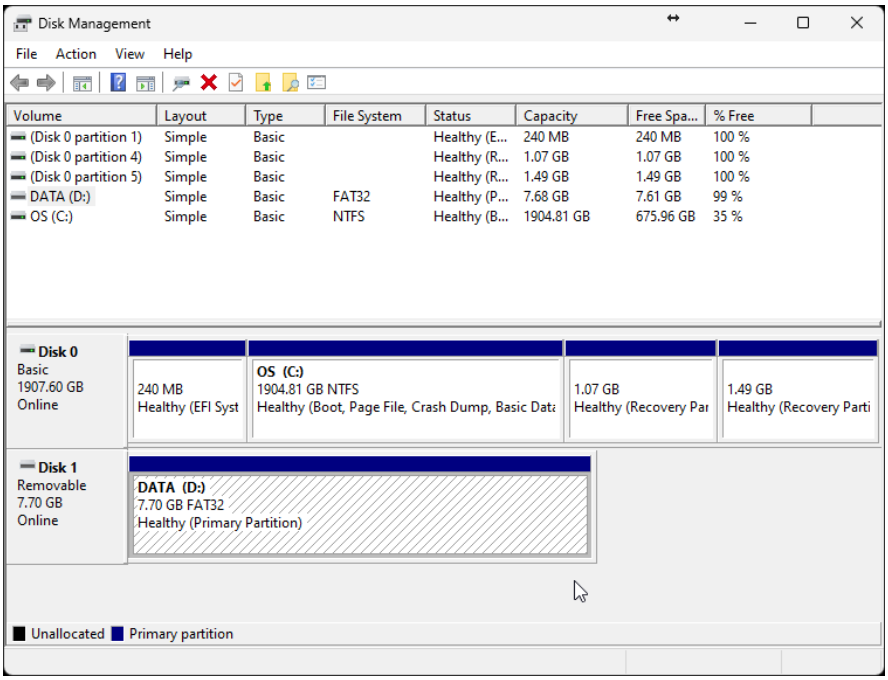


> SYSTem:FW:FRONTPANEL:VERsion?
4.7.33
> SYSTem:FW:CONTroller:VERsion?
82.4.14-78.0.10
> SYSTem:FW:IO:VERsion?
1.1.4

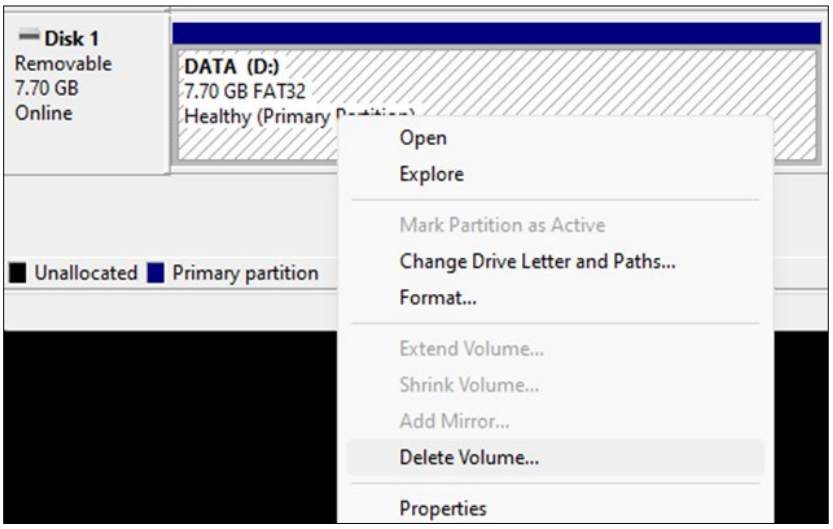
2. Instructions

Insert the SD card into a PC with Windows 10/11 or higher, and ensure the switch is not in the lock position. If your computer does not have an SD card reader then you can buy a USB one, like the one shown below.

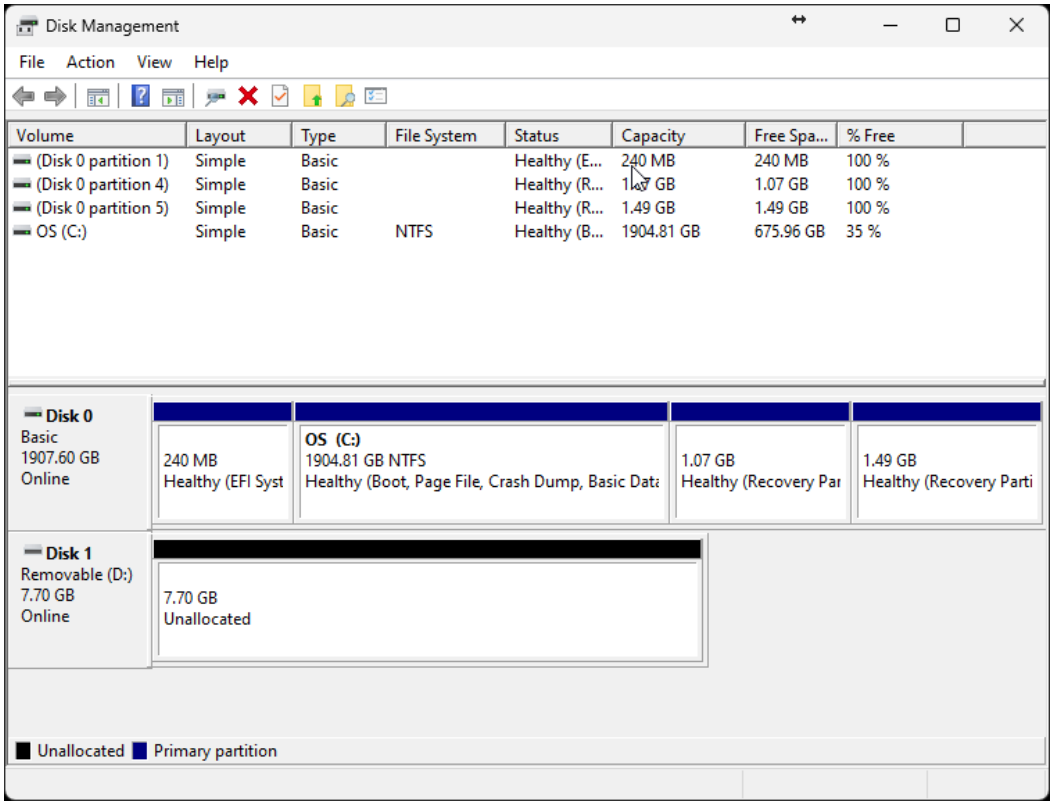
Open Disk Management on Windows 10 or higher and locate the SD card drive. Please be careful not to perform operations on other drives like your hard drives.



Here in this example, Disk 1 is the SD card. Depending on the previous use of the SD card there may be none, one or more volumes. We need to delete all volumes, please note all the SD card content will be lost. To delete the volumes, press right-click on them and press delete volume.



Finally, the SD should be in an Unallocated state, like this:

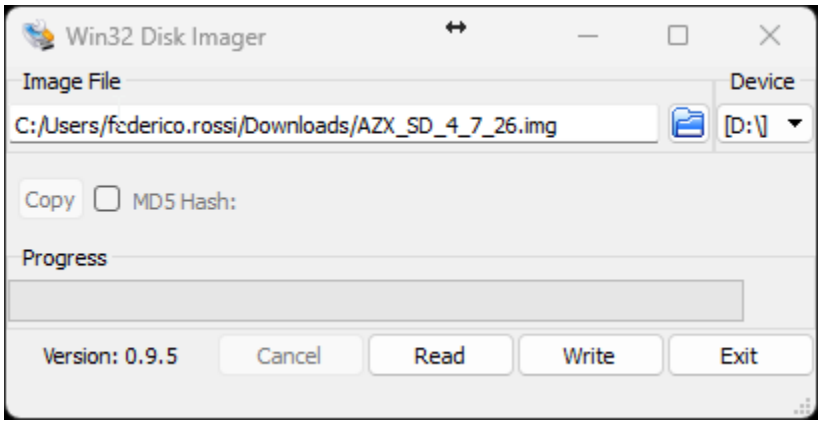


Download Win32 Disk Imager version 0.9.5, it can be found online or in this link>

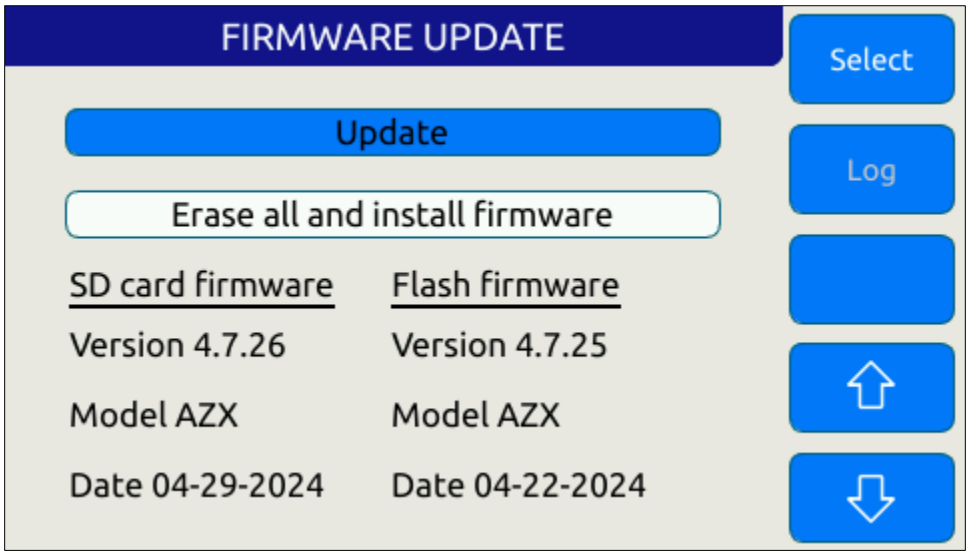
https://files.ppstinc.net/get.asp?id=wmbquBLc9et25f3AlouOykoNTrDxppfz

This is a portable version, decompress the ZIP file and execute “Win32DiskImager.exe”

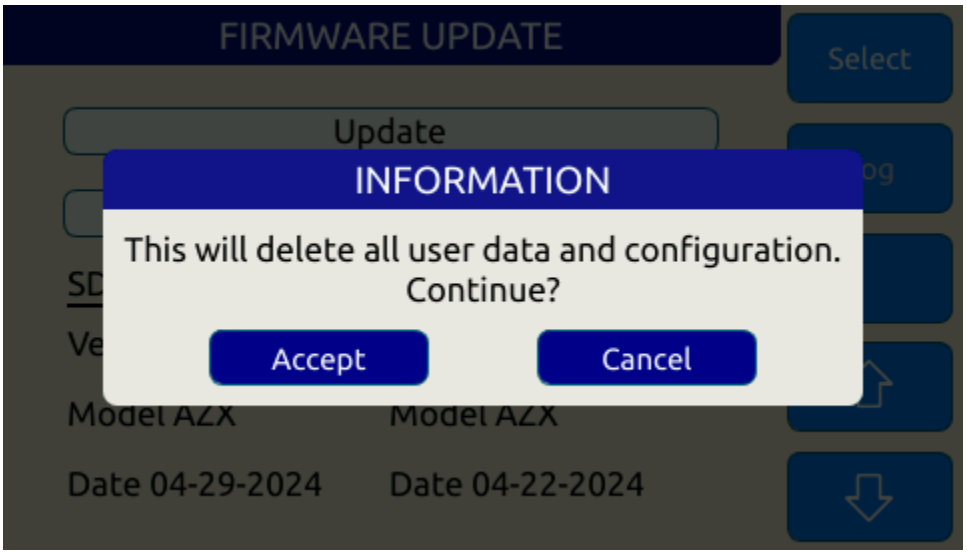
Select the image file “*.img” and the device latter corresponding to the SD card, in this example is letter D. If you file ends in “*.img.gz” just decompress it with 7-Zip program before to get the “*.img” file.



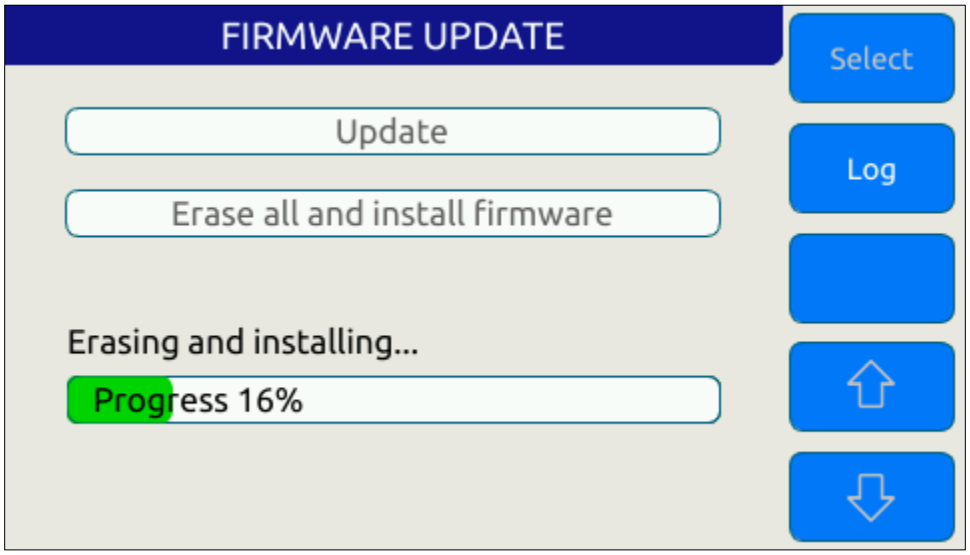
Press “Write” and “Yes” to confirm. Once it finishes close the program and unplug the SD card from the computer. Power PPS device off, insert the SD card, press and hold “0” key on the front panel, and power on the device. Keep holding 0 until this screen appears:



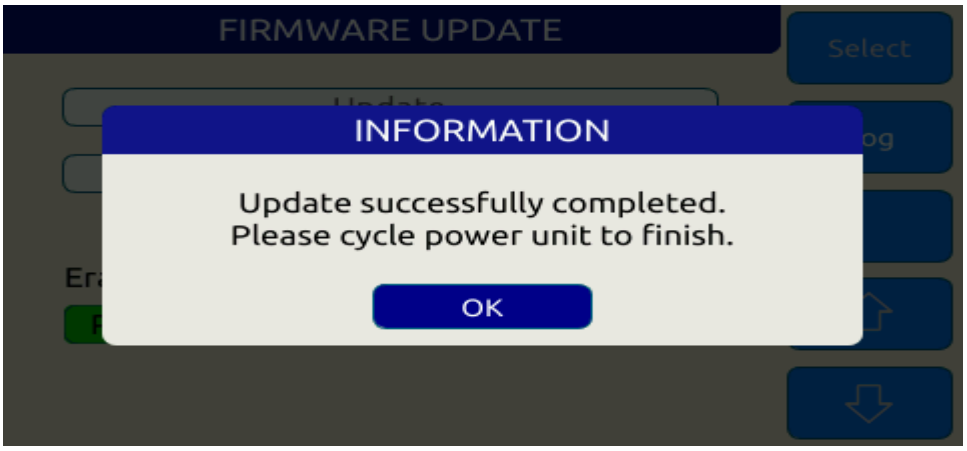
Select the option “Erase all and install firmware” and press accept.



This will write the FW and leave it from the factory removing all user data. Please note that the calibrations performed at the factory are not lost, only user data is lost.



Wait until it finishes, and this message appears:



Remove the SD card and cycle power the device. In the first boot it will check updated with the internal controllers FWs, if those are up to date then the flash process is finished otherwise the internal power stage firmware will be updated and after some minutes the device will be ready and updated. The firmware version can be verified as described in the preface.

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