



PP300

DEVICE PROGRAMMER

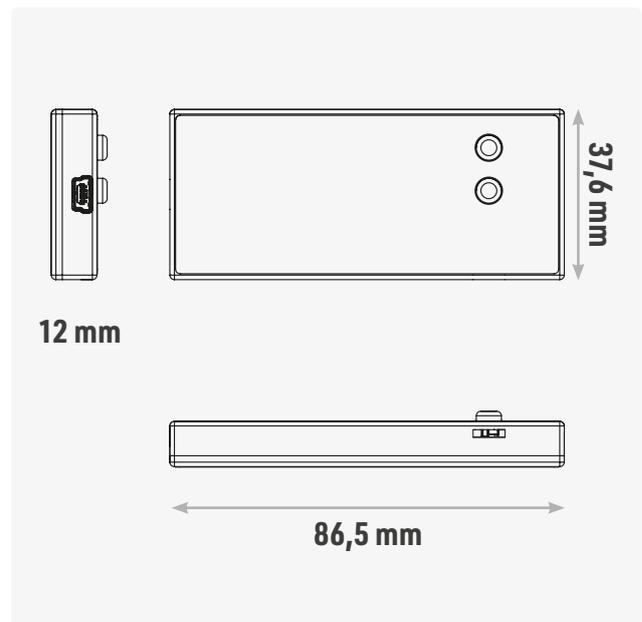
About

The PP300 is a multifunctional LCD/Dot matrix display product programmer that allows the user to program EXCEL, DIESEL, JUNIOR, ULTRASLIM and PKD either through personal computer with the help of PLDPP/PKD230GS7 software with a high speed or by using in field programming mode thanks to the embedded memory unit, which is practical and time saving since it allows the user to modify the programmable device program when it is installed in an elevator.

Features

- ARM Cortex M3 CPU Core
- Small size makes the device portable
- Fast programming
- 16 MByte USB mass storage device.
- USB communication device as serial port
- USB DFU for device firmware upgrade
- LED and buzzer as device status indicators

Dimensions

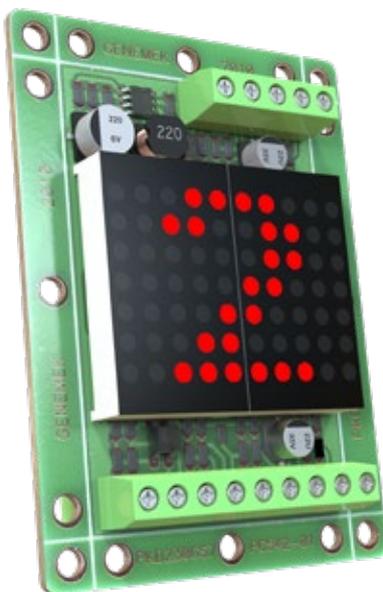


PP300

DEVICE PROGRAMMER



Programmable LED indicators
PKD230GS7



Programmable LCD indicators
EXCEL, DIESEL, JUNIOR, ULTRASLIM



Operation Modes

The new programmer generation features two main operation modes and they are USB serial communication and USB mass storage. Note that the user doesn't need to manually install any USB driver. It is possible to switch between the first two modes by changing the position of the slide switch and re-plugging the USB cable. The function of these modes are explained in the sections below

1. USB Serial Communication Mode:

When this mode is selected and the programmer is connected to a computer USB port, the programmer will appear as a serial communication port to the computer, which will make it possible to use PLDPP/PKD230GS7 software to program any of the programmable devices.

2. USB Mass Storage Mode:

After selecting this mode and connecting the programmer via USB to computer, the programmer will appear as a 16 MByte USB flash drive to the computer as the figure bellow. PLDPP software is used to program any LCD programmable device. On the other hand, PKD230GS7 software is used to program Dot-matrix display programmable device and both programs are in Software folder. The programmable devices frame data, which can be viewed only in USB Mass Storage Mode, will be stored in the embedded memory unit as shown in the figure below. DFU file function is explained in the upcoming sections.

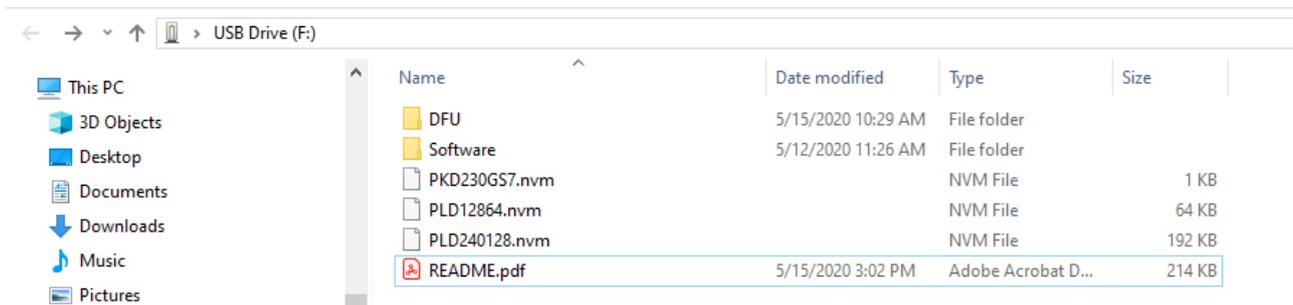


Figure 1 Memory unit content

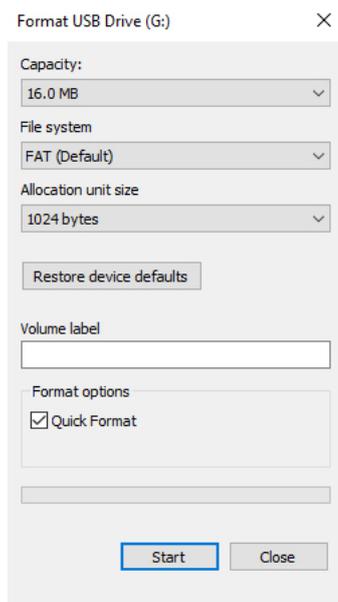


Figure 2 Memory unit format settings

Important Notes:

- It is not recommended to use this mode to transfer personal files due to the low writing speed of the memory unit.
- In case the user wants to format the drive, the computer will detect the memory unit size, which is 16 MB, and FAT (Default) for file system and 512 bytes for allocation unit size maybe selected automatically by the computer. Allocation unit size must be selected manually as 1024 bytes so this mode can work properly. Quick format option must be kept checked. The required format settings are shown in figure 2.

3. In Field Programming Mode

This mode works regardless of the slide switch position. After programming one of the programmable devices shown in the table below and if the user wants to program another device from the same class with the same frames data, the following instructions must be followed:

1- After programming one device using USB Serial Communication Mode, COPY button should be held pressed for 3 seconds until the buzzer sound is heard, if any problem is faced during this process, check if the connections are done correctly. This operation will replicate the frame data stored in a programmable device EEPROM and stores it a .nvm file in the PP300 memory unit.

2- The buzzer sound switching frequency will increase gradually indicating that the current frame data is being stored to the programmer memory unit. Please wait until the buzzer sound is gone. Note that this process lasts only for one second with PKD device

3- Right now, the frames data is stored in the programmer memory unit. In order to use this data to program another device, using the attached purple cable, the programmer should be connected to a programmable device and the PASTE button should be held pressed for 3 seconds until the buzzer starts giving gradual beep sound. Please wait until the buzzer sound is gone. Now your device has been successfully programmed.

 **Important Notes:**

- Step 3 can be repeated to program several devices as long as the corresponding frame data file is stored in the memory unit and not deleted manually in USB mass storage mode.
- When the programmer is connected to a programmable device, the programmer determines the programmable device class. Holding the READ button pressed for 3 seconds will overwrite the previously saved frame data of that device class so paying attention to the button use while programming is very important.
- PP300 programmer can store 3 frame data files. Each file contains the frame data of a programmable device class so it is possible to use in field programming mode to replicate different programmable devices frame files from different classes to use them later on for programming.

Programmable Device / Class	PLD128 LCD Display	PLD240 LCD Display	PKD230 Dot-Matrix Display
ULTRASLIM	✔	-	-
JUNIOR	✔	-	-
DIESEL-2	✔	-	-
EXCEL	-	✔	-
PKD230GS7	-	-	✔

Table 1 Programmable devices with their classes

Visual Notification

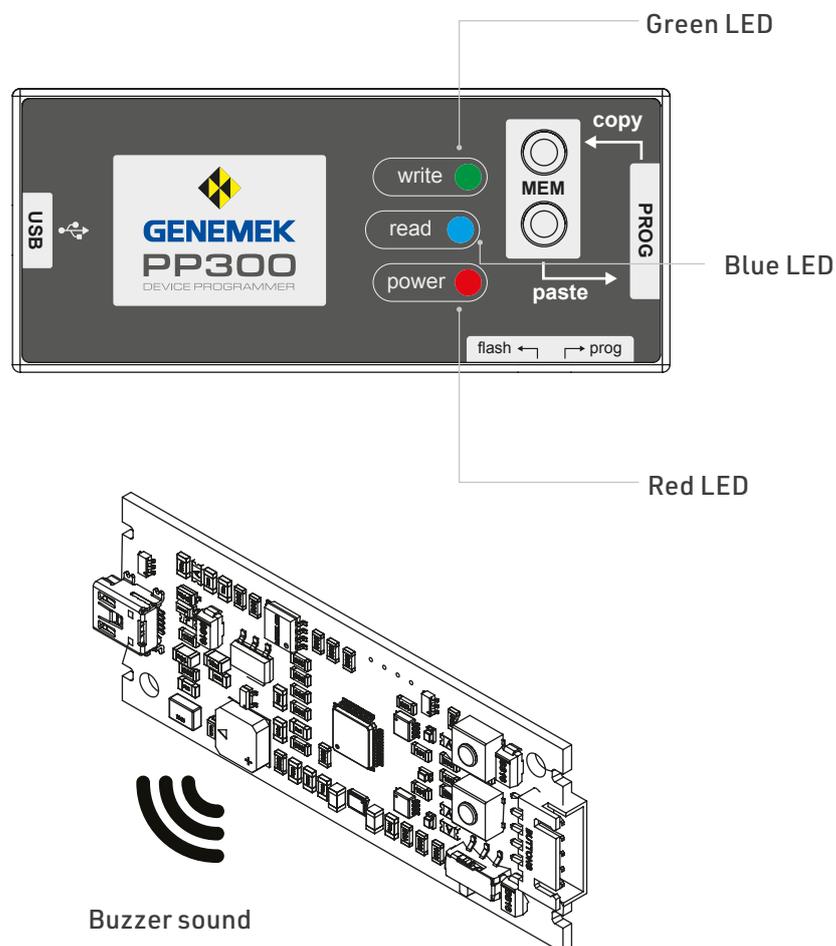
Since PP300 is capable of doing several operations, it is quite important to inform the user of what the programmer is doing at the moment visually. PP300 has 3 LEDs red, green and blue and they are turned on to give the following information.

- Red LED is ON: Indicates that PP300 programmer is powered through USB.
- Green LED is ON: PP300 memory unit write operation is carrying on.
- Blue LED is ON: PP300 memory unit read operation is carrying on.
- Both blue and green LEDs are ON: The programmer is in download firmware upgrade mode. More about this mode will be discussed in the upcoming sections.

Sound Notification

Along with visual notification, sound notification is an important feature of PP300, which makes it interactive and the purpose of this feature is to draw the user attention to the programmer status at each operation. A buzzer sound with different tone is heard in the following situations.

- The user tries to program a device while it is not connected to the programmer either in USB Serial Communication Mode or in Field Programming mode.
- A programmable device is connected to PP300 programmer.
- In Field Programming operation is being done.



PP300 Firmware Upgrade

In case there is a new firmware upgrade for PP300 Programmer to fix some bug or to add features, it will be necessary to update the programmer firmware from its USB port and this is possible by letting the programmer enter DFU mode (Download Firmware Upgrade). This is done by holding both buttons pressed and powering the programmer by connection it to a computer through USB cable. When PP300 programmer enters DFU mode, both green and blue LEDs will light up for indication. Note that while the programmer is in DFU mode, it can't do any of its functions. Now it is time to use DFU software.

First of all, unzip PP300 Firmware programming file on your PC and run DfuSeDemo.exe file. If PP300 programmer is in DFU mode already, the internal programmer CPU flash will appear in Actions section like figure 3 shows. In Upgrade or Verify Action section press on "Choose" to select the provided PP300 firmware with .dfu extension. After selecting the required file, click on "Upgrade" to start updating process. The DFU program will ask for confirmation as shown in figure 4 so click "Yes" to start firmware updating. Wait until the DFU program finishes updating the PP300 firmware and when the updating process is completed re-plugging the USB cable will exit DFU mode and the programmer now can do its normal functions.

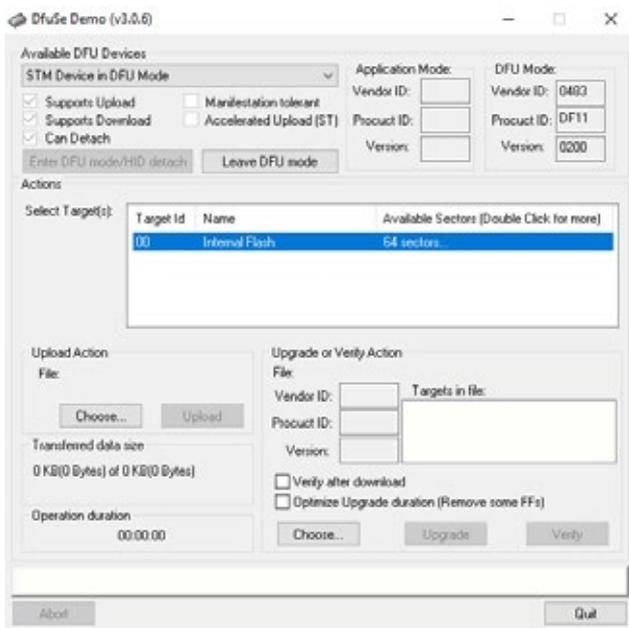


Figure 3 DFU program interface

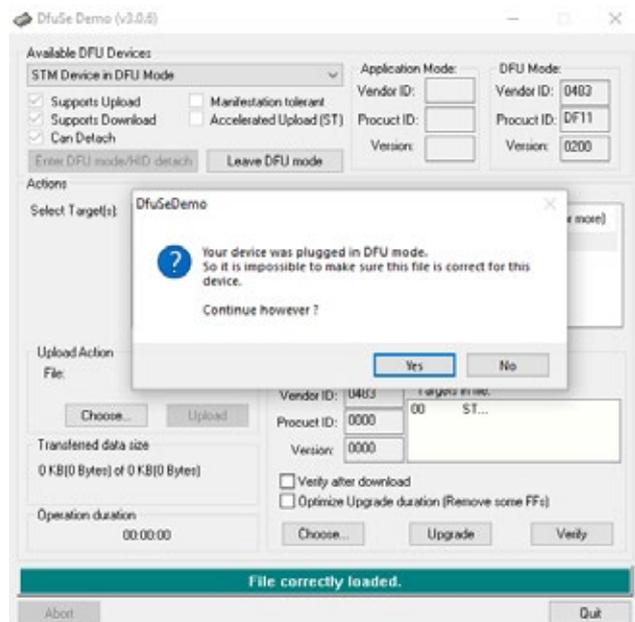


Figure 4 Firmware update confirmation

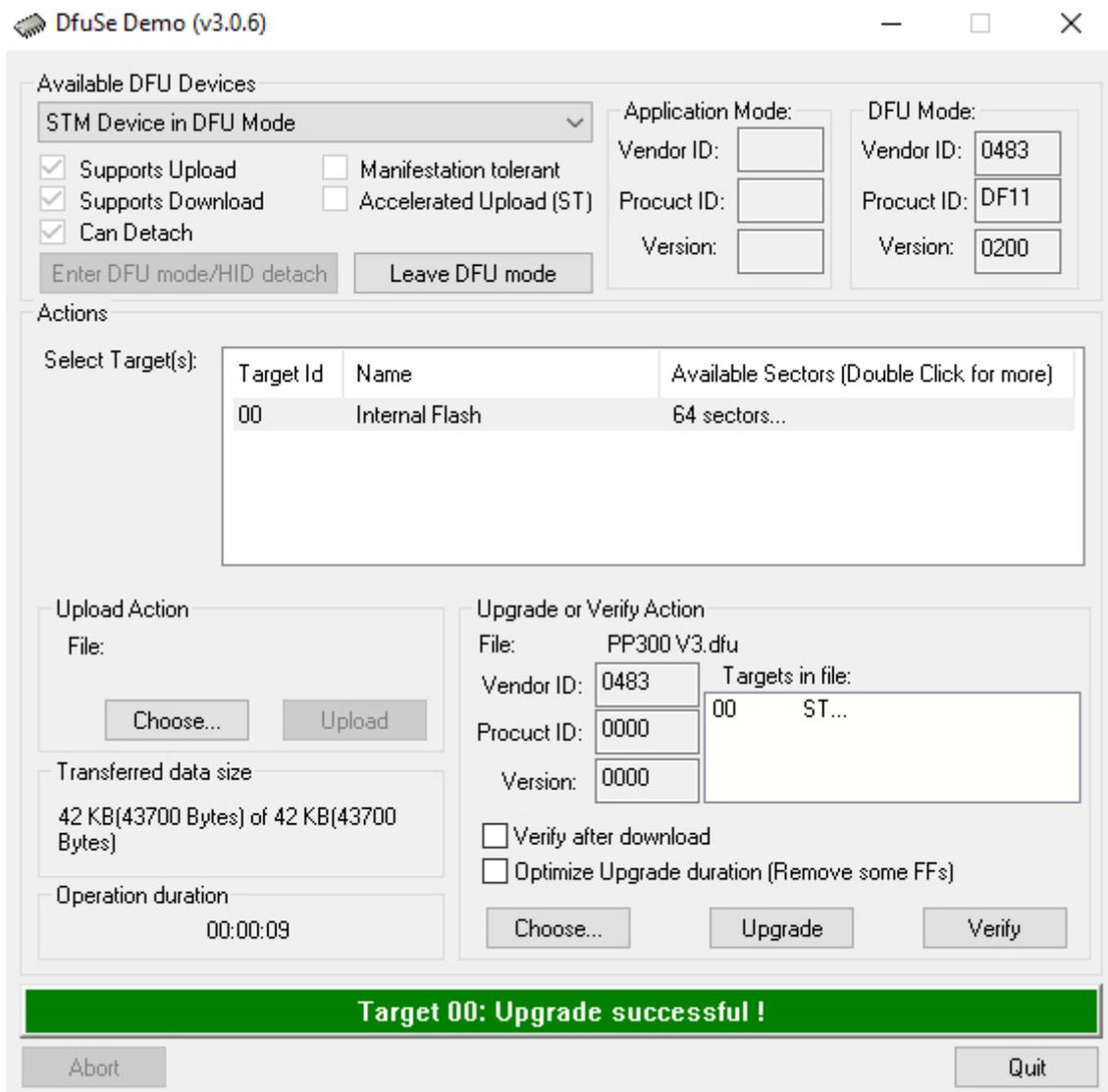


Figure 5 Firmware update is completed