

PICO TRAIN

Datasheet

PicoProg Ø81

Production Programmer for PSØ81

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1 Overview

1.1 Description:

PicoProg Ø81 is the production programmer for the PSØ81 chip of the PICOSTRAIN series. The device allows to program PSØ81 without a computer. Download is simply done by connecting the target board and pressing a button. Status of progression is indicated by some LEDs. The programmer comes in a compact metal housing.

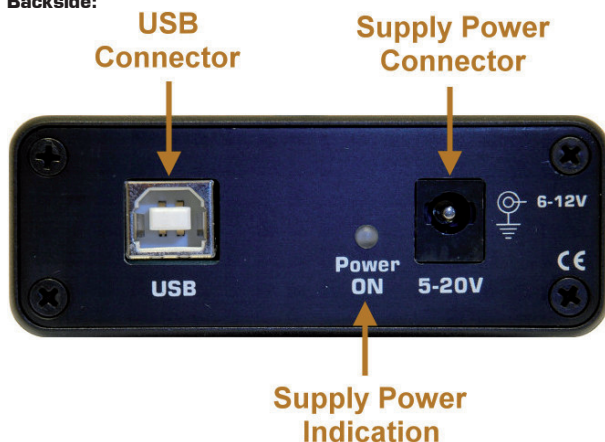


1.2 Features:

- SPI-Connection to Target Board
- Single Button programming
- Read & Verify functionality
- Status Indication by 3 LEDs (Ready / OK / Error)
- External Power Supply or via USB
- Download of Hex-File to Programmer via USB
- Metal housing dimensions: 126 / 80 / 28 mm
- Max. Programming Time for Programming 2K Byte is 5s

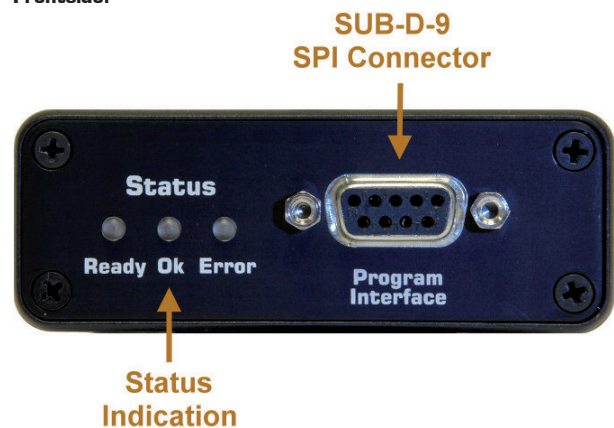
1.3 Connections

Backside:



On the backside there are 2 connectors – the USB jack and the Power Supply jack. The device is supplied by a wall power supply unit which comes with the package. The external power supply is always necessary, even though USB is connected.

Frontside:



On the frontside there is a SUB-D-9 female connector for interfacing the PSØ81 via SPI. 3 status LEDs are indicating the progress of the programming.

Ready = A download can be made now
 OK = The download was successful
 Error = An error occurred during the download



A green colored LED shows active power supply.

1.4 Ordering Number

Part No.	Product	Description
1661	PicoProg Ø81	Production programmer for PSØ81

2 Getting started

First we recommend to install the Assembler Software as with the installation the drivers are automatically copied into the correct folders. This makes it easier to install the driver later then.

To install the Assembler Software please see the correspondent folder on the CD and execute setup.exe. Follow the steps proposed by the installation wizard until the installation is complete (a restart of the system may be required). The next step then will be to connect the programmer,

2.1 Connecting the Hardware

Please connect the wall power supply to the power connector on the backside. A green-colored LED is indicating active power supply. Then connect the USB cable to the jack on the backside and on the other side to the computer. Now the driver for the device needs to be installed.

Figure 3 Hardware Connection



2.2 Installing the Driver

Once the device is connected to the computer, the Windows® Hardware Assistant looks for the driver. Assembler Software was previously installed, the driver is automatically detected by the operating system. If the driver cannot be detected automatically please select the driver manually either from the CD's driver folder or from C:\Program Files\PSO81 Assembler\drivers folder. The driver's name is PicoProg_NI1009.inf.

For more detailed information or in case you encounter problems during the installation process please have a look at the document "How-to-migrate-to-Assembler-Version-1-3-7-or-newer.pdf".

2.3 Download of Hex-File

Start the PSØ81_production_programmer.exe from the CD's Software folder or if the Assembler Software was installed previously from Start -> Programs -> PSØ81 Assembler -> Production Programmer. A window like the following opens up:

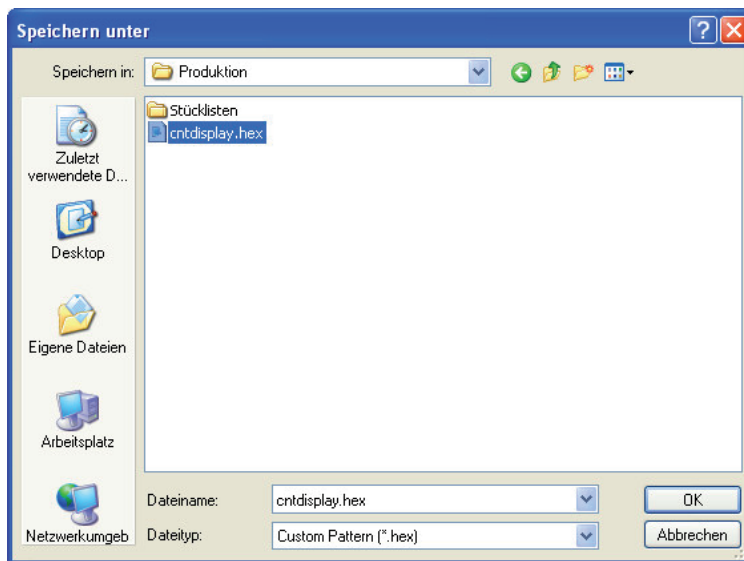
Figure 4 Selecting the USB Port



In the field FW version there should be a number, e.g. 100 displayed, indicating the firmware version number. Also, in the USB interface field there should appear an USB descriptor like USB::0x194E::0x1009::NI-VISA-0. If the fields are left blank, the device was not properly recognized and installed by the operation system. In this case, please re-install the driver. This can be done by selecting Update Driver... with a right-click on the entry in the device manager. A detailed step-by-step guidance can be found in the document "How-to-migrate-to-Assembler-Version-1-3-7.pdf" in the section Connecting the production programmer.

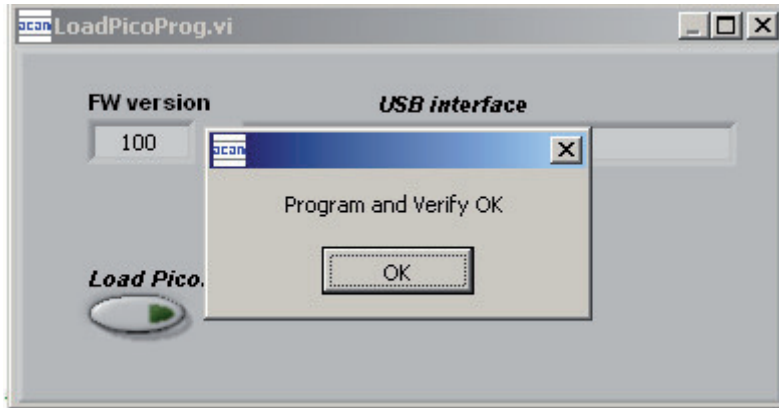
Now press Load PicoProg to select a hex-file from the file directory tree.

Figure 5 Selecting the HEX-File



By selecting the hex-file it is automatically downloaded to the EEPROM in the production programmer and stored there permanently. A message confirms the successful download.

Figure 6 Downloading the HEX-File

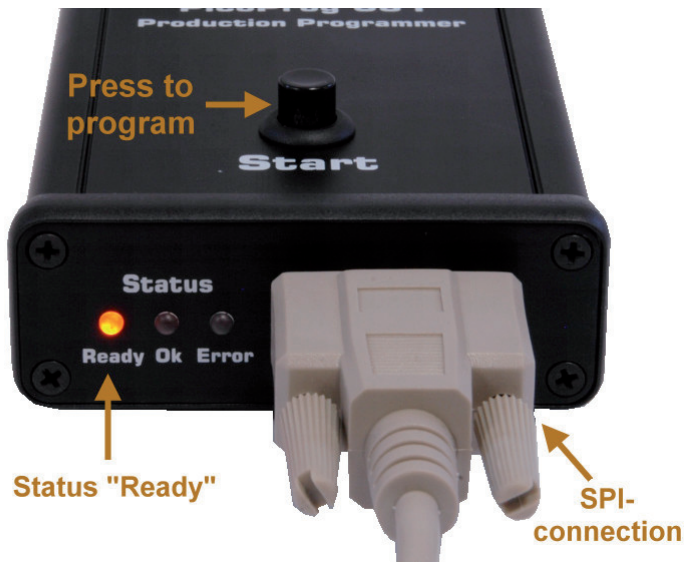


From now on, the hex-file is ready to be downloaded into PSØ81 on the target board. . Of course you can download the hex-file into PSO81 unlimited number of times without the need to select the hex-file every time before the download. Once stored in the EEPROM of the production programmer you simply press the Start button and this triggers the download.

2.4 Programming the PSØ81

Now PicoProg is ready to start the download to PSØ81, indicated by the yellow-colored LED on the frontside. Please connect the target board now via the SUB-D9 cable (SPI connection).

Figure 7 Programming the PSØ81



Make sure the PSØ81 on the target board has power supply also. Then press the Start button to initiate the programming of PSØ81. During the programming process the Ready LED is blinking. When the download is finished the result is indicated either by Ok or Error.

Figure 8 Programming Status



2.5 Error Cases

In case an error is indicated please check the following possible sources of the failure:

- No connection from PicoProg Ø81 to the target board
- Target board (and PSØ81) are not supplied by power
- Programming process was somehow interrupted

Please make sure the possible error causes are avoided and try to program again.

In case the Ready LED is not illuminated at all at the beginning of the whole procedure, there is no program in the PicoProg Ø81 EEPROM. Please download a hex-file to PicoProg first in this case.

3 Change Log

22.12.09 Start up Document

15.01.10 First Release of Version 0.1

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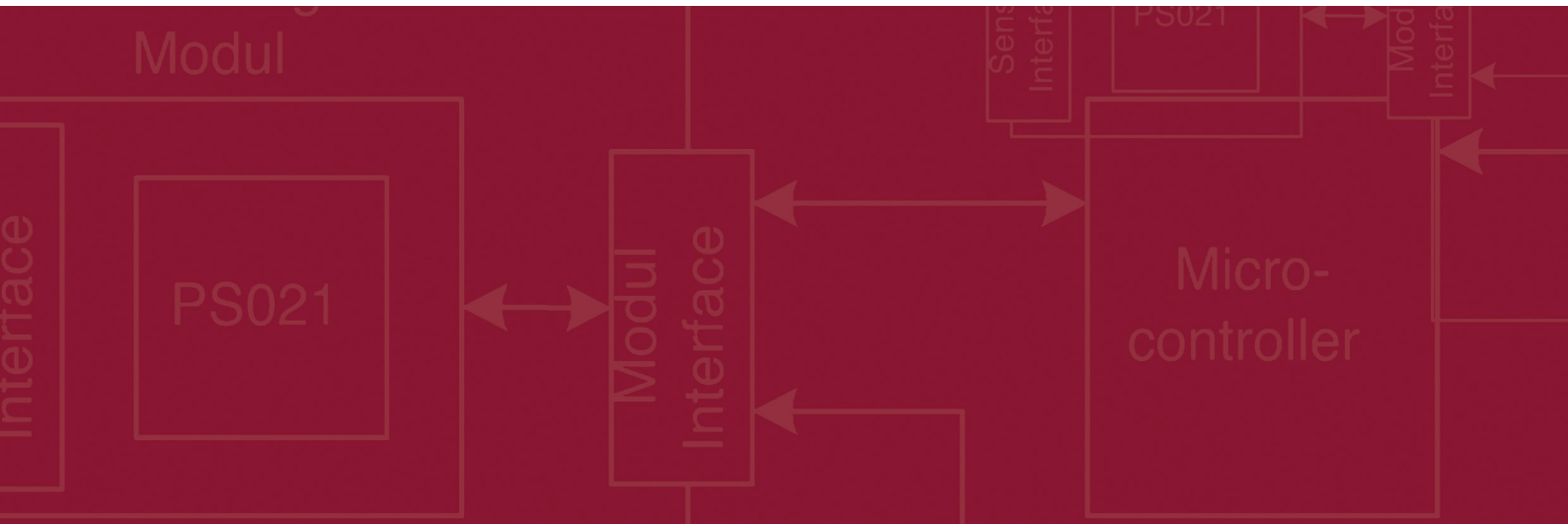
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