

# 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.

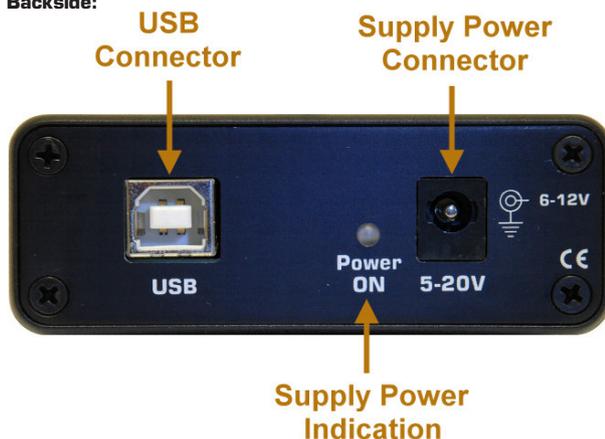


### 1.2 Features:

- 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

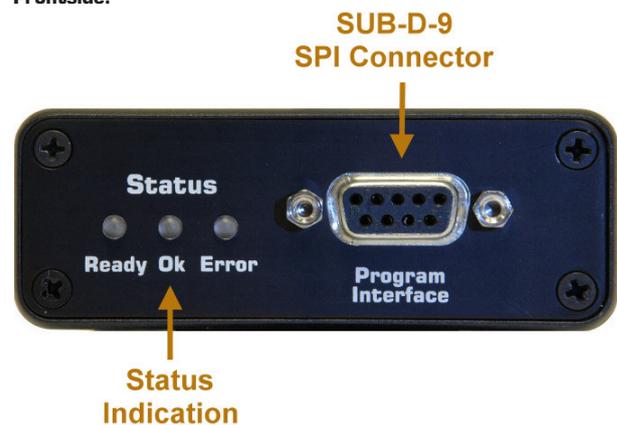
### 1.3 Connections

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

Please insert the CD/DVD coming with the production programmer. You find the following folders in the root directory:

/	/Data-Sheet		This document
	/Driver	/Driver-Installer /Manual-Installation	Driver installation
	/Software	/Executable /Installer-Volume1-3-x	Software installation
	Readme.txt		Installing instructions (short)

**Please do not connect the production programmer before it is recommended in the installation procedure description!**

The installation consists of two steps:

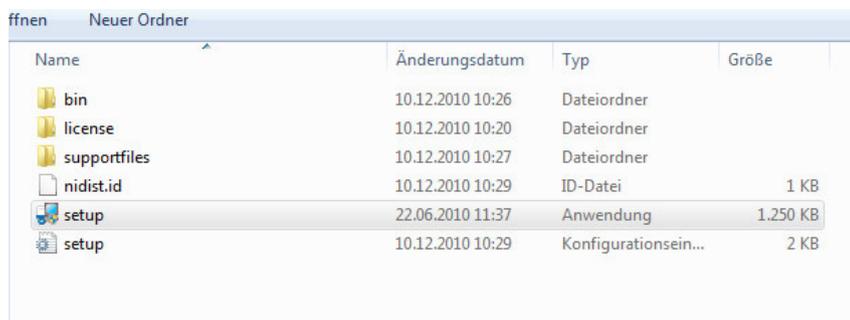
- Run the driver installer / Connect the PicoProg Ø81
- Install the Software / Download a program

See now in the following sections how to get started step by step.

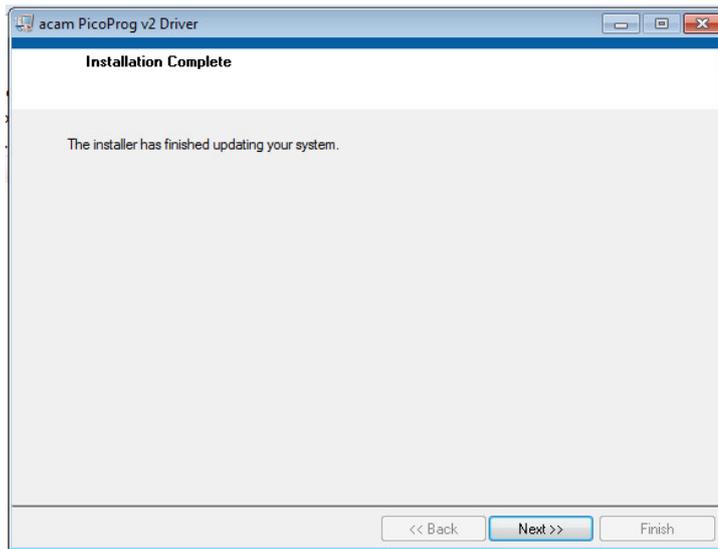
### 2.1 Installing the Driver (Windows® XP and 7)

#### 2.1.1 Automatic installation (recommended)

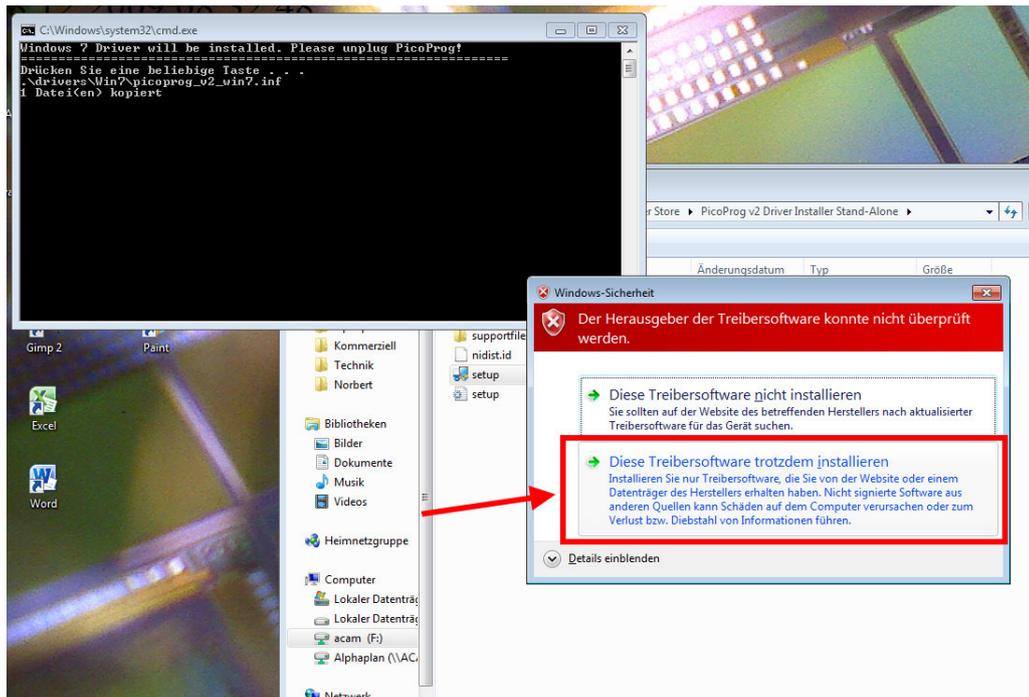
Please run the driver installer (setup.exe) from the CD's /Driver/Driver-Installer – folder. Follow the assistant and the instructions from the upcoming command window.



Run **setup.exe** to start the driver installer. Follow the instructions by the clicking next button. The following screen appears after the installation is finished:



Then a batch-file (command window) is started automatically thereafter.



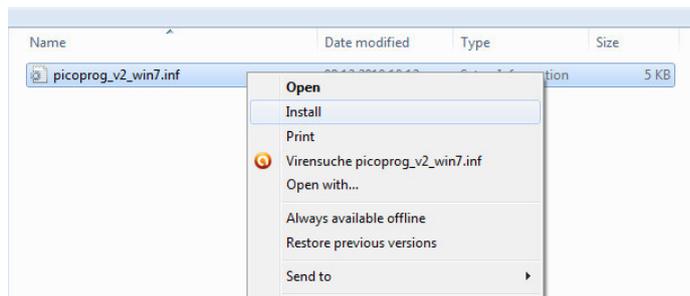
You are asked to install the driver anyway, although the driver is not signed. Please install it anyway.

After this step, the driver should be installed and you can plug in PicoProg Ø81 (make sure it is power-supplied).

## 2.1.2 Manual installation (only recommended if automatic installation fails)

Please go to your C:\Windows\inf – directory and delete manually all files containing “oem”, e.g. oem15.inf or oem15.pnf, etc. (these are files referring to old or temporary drivers which can cause a conflict with the driver to install).

After that, go to the CD's /Driver/Manual-installation – folder and perform a right-click on the driver.



Afterwards, plug in the PicoProg Ø81. The device should be ready for operation now.



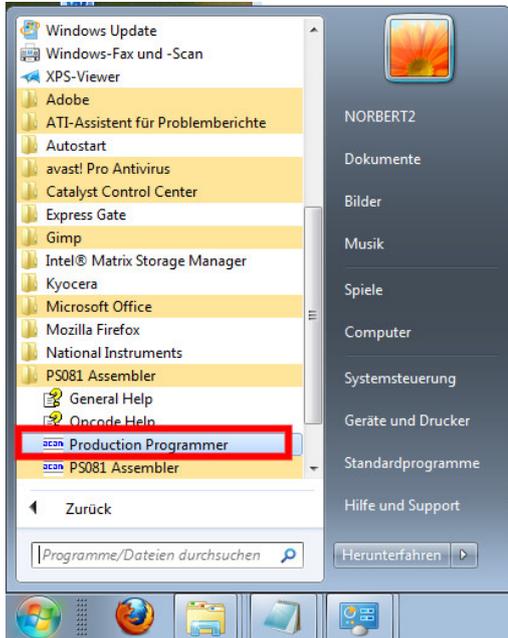
**Please note:** when plugging in the PicoProg Ø81 you need to make sure that it is power supplied by the external wall power supply unit (green LED on). The device is not supplied by USB!

## 2.2 Install the Software

Run the installer (setup.exe) from the CD's /Software/Installer-Volume1-3-x – folder. Follow the assistant by clicking **Next** until the software is installed. After installation, a reboot of the machine may be required.

You then can start the software by selecting the program from

**Windows → Programs → PSØ81 Assembler → Production Programmer**



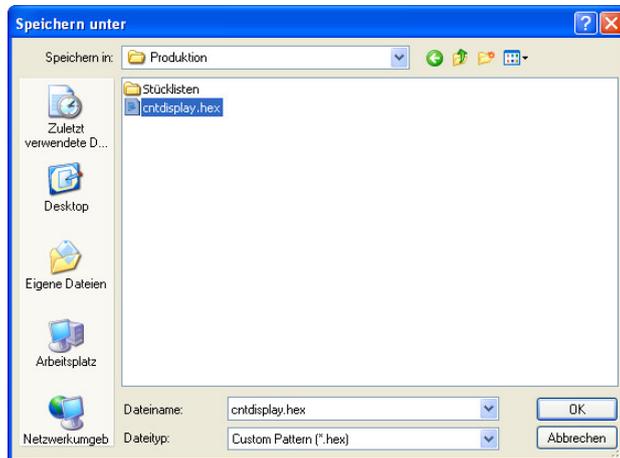
Then, a windows similar to the following will pop up:



In the field **FW version** there should be a number displayed, e.g. 101, indicating the firmware version number. Also, in the **USB interface** field there should appear an USB descriptor like USB::0x194E::0x1009::NI-VISA-0. In the field **program cycles** you can define the number of possible downloads before the program is deleted automatically from the production programmer and no further downloads are feasible.

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 or by following the previously described driver installation procedure.

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



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.

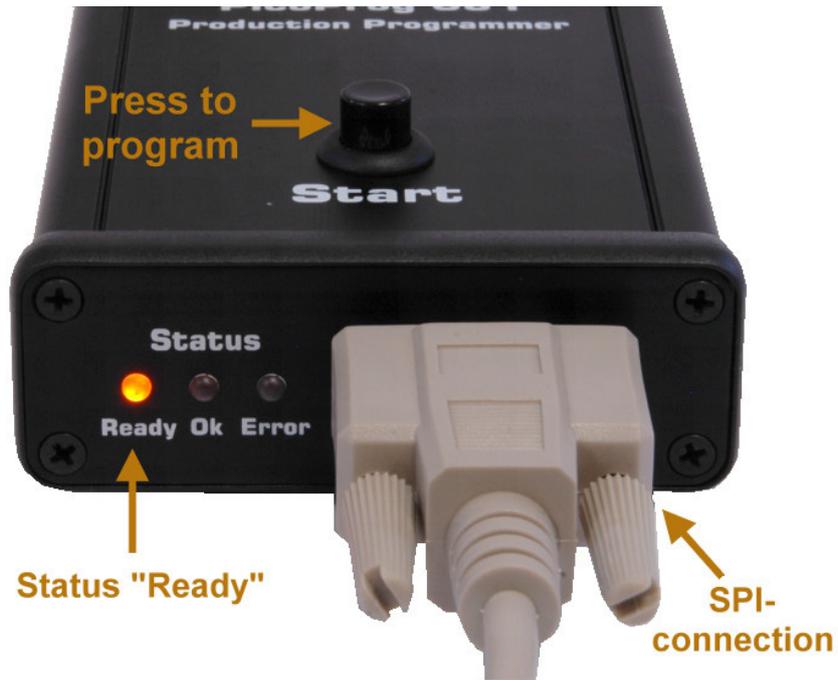


From now on, the hex-file is ready to be downloaded into PSØ81 on the target board. Of course you can download the hex-file into PSØ81 without the need to select the hex-file every time before the download. Once stored in the EEPROM of the production programmer you simply press the Start button and this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

### 3 Programming the Target Hardware with PSØ81

**Note:** Once you did the download of the hex-file please cut and re-establish the power-supply for PicoProg Ø81.

After that, 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).



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**.



**Error Case:**

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. Similarly, if all three LEDs are illuminated, this means that the maximum number of downloads was reached and the hex-file needs to be downloaded to PicoProg Ø81 again (together with the number of downloads to make).

## **4 Change Log**

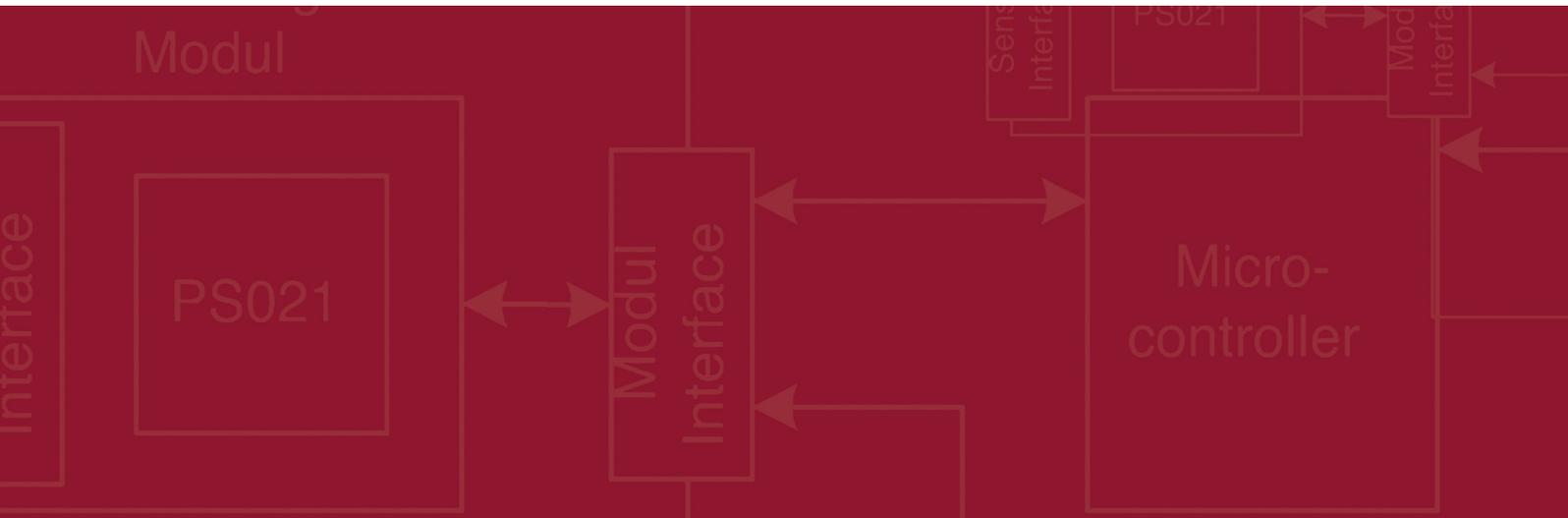
22.12.09 Start up Document

15.01.10 First Release of Version 0.1

18.08.10 Release of Version 0.3

21.01.10 Version 0.4 released





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