

**Nano-B**  
**Version Update**  
**from V2.02 to V2.04**



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## **1.1 Notes on Version V2.03**

Besides the changes that have been made to version V2.04 of the NANO-B, this document comprises all changes which have been made to version V2.03.

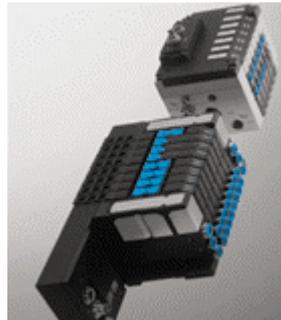
## 2 New Functions/Features

### 2.1 System Bus

#### 2.1.1 Festo CP-FB Modules

Starting from version V2.03, Festo CP-FB modules connected to the system bus can be operated together with JX-SIO, Festo CPV-Direct, Festo CPX-Terminal and other third party modules

The maximum allowable IO sum has still to be taken into account.



#### **Note**

We recommend not to use Festo CP-FB modules for new developments. These modules should rather be replaced by Fest CPV-Direct or Festo CPX-Terminal modules. In contrast with CP-FB modules, they offer more functions, less complicated commissioning and installation.

## 2.2 Creation Time of Application Program

The programming tool JetSym creates a file with the extension \*.end when compiling the application program for a NANO-B controller.

The file creation date is stored to the application program and transferred to the NANO-B when downloading it. The creation time of the application program located in the RAM can be read out from registers 2970 through 2974. The creation time contain in these registers corresponds to the creation time contained in the file with the extension \*.end.

<b>Register Overview: Creation Time of Application Program located in RAM</b>	
<b>Register #</b>	<b>Description</b>
2970	Minutes
2971	Hours
2972	Day
2973	Month
2974	Year

### Note



In NANO-B OS version V2.02 these registers were used to read the creation time of the application program located in the flash memory.

## 2.3 Supply Voltages

<b>Register 2908: Supply Voltage for Analog Inputs</b>	
<b>Function</b>	<b>Description</b>
Read	Present voltage in millivolts
Write	Illegal
Value range	0 – 15000 (nominal)
Value after reset	Approx. 15000

Analog inputs are fed in the basic controller via operational amplifiers to the AD converter. The nominal supply voltage of these amplifiers is 15 V and can be read from this register.

<b>Register 2952: Supply Voltage for Expansion Modules</b>	
<b>Function</b>	<b>Description</b>
Read	Present voltage in millivolts
Write	Illegal
Value range	0 - 5000 (nominal)
Value after reset	Approx. 5000

Up to five JX2-I/O expansion modules can directly be supplied with voltage by the NANO-B controller. The nominal supply voltage is 5 V and can be read from register 2952.

## 2.4 Millisecond-Timer

<b>Register 2037: Millisecond-Timer</b>	
<b>Function</b>	<b>Description</b>
Read	Present value of the millisecond-timer Value after reset: 0
Write	New value from which counting will start
Value range	0 – 65535
Value after reset	0

The NANO-B increments the millisecond-timer by the value 1 each millisecond. The timer starts automatically when switching on the NANO-B. It is not possible to stop the timer.

## **3 Fixed Software Bugs**

### **3.1 Analog Inputs of the Basic Device**

The NANO-B up to version V2.02 required a certain time after power-on until the analog values actually being present at the analog inputs were displayed.

Starting from version V2.03, the NANO-B reads the present state of the four analog inputs located on the basic controller before it starts the application program. Thus, after power-on the correct analog value is available already from the first instruction.