

# electronics • analog • modular system ENV interface boards series EDA

## EDA – the Interface board with microcontroller

The EDA interface boards have eight analog inputs and four analog outputs, as well as eight digital in- and outputs. It is well suited to the automation of positioning processes, the programming of specific scan functions, data acquisition and the control of any analog system.

The card comes with demo software providing different functions and a monitor program for monitoring the in- and output data.

Programming of useful functions can be easily

done by using the demo software as well. Please see the first steps of programming below. The full description can be found in the user manual of the EDA or please ask our office for further assistance.

After starting the demo program for the first time, parameters and possible settings are set by **default**. The language setting adjusts to the language of the operating system.

In case of the PC system language is different from German or English the program

language is set to English. The subroutine **'Voltage/Way'** is activated. The interface is specified as **RS232** on COM1 with 9600 Baud. If COM 1 is not accessible an error is prompted and the menu **'Settings'** opens. The settings have to be adjusted. After changing to the subroutine **'Terminal'** the EDA should use the prompt:

**EDAn Vn.nnn S0>**

In the case where the system replies:

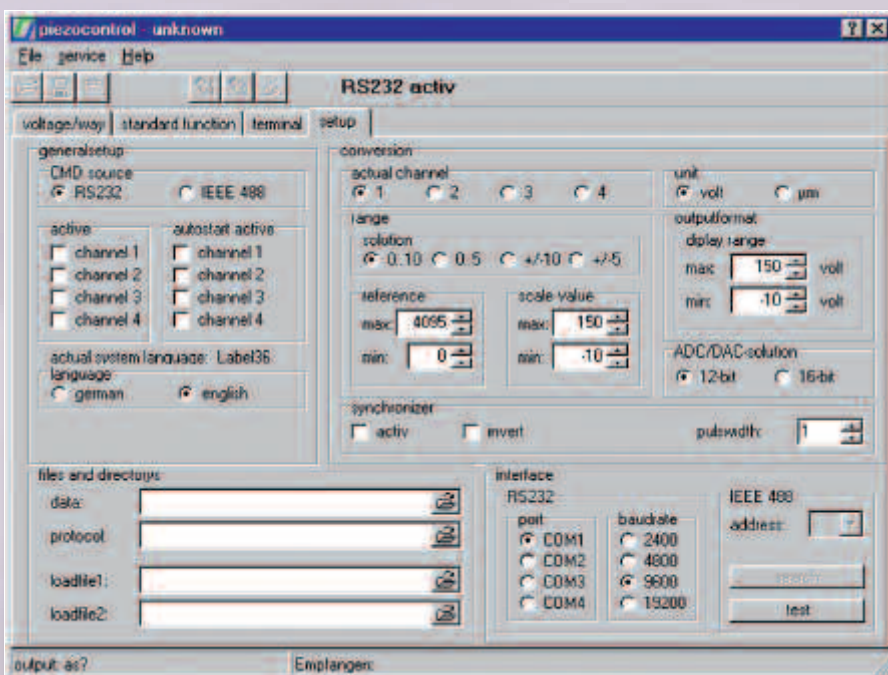
**URL Vn.nnn S1>**

the function switch S1 is in position 2 and has to be switched to position 1. Reset the interface card afterwards.

If the terminal shows no response the following points should be checked:

- is the EDA (the ENV-System) switched on?
- is the **RS232-Connection** between PC and interface card established ?
- is the configuration of the **RS232-Connection** ok?
- were the appropriate COM-parameters chosen?

The 19" casing allows the card to be interchangeable with any other analogue amplifier component from **piezosystem jena** and can be incorporated in other electronics without any problems.



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The EDA interface modules are universal I/O boards designed as a 19" slot card. The modules provide analog input and digital I/Os used for recording measurement signals or operating additional electronics. With additional software the programming of special scan functions is very easy.

The main advantages of these modules are the built-in micro-controller and a free programmable memory capacity. The micro-controller is capable of input and output procedures or voltage values programmed in the memory.

The EDA modules can also work as a normal PC-line operated system directly from the PC.

All EDA 4 and EDA 5 interface cards have the same features. The EDA 5 also has an IEEE 488.2 interface.

### general remarks

Piezoelectrical systems and their electronics work with high voltages and high currents. Please consider the advices and rules for safety. Please read our manual and the advice given in the piezoline download file.

### applications

- PC control of analog amplifiers
- automatic process control

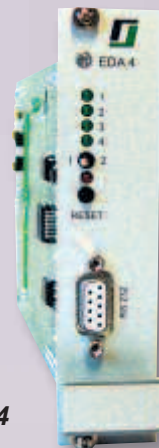
### specifications

input voltage range: 0 to +10V  
power supply digital: +5V (100mA)  
power supply analog: ±15V (±15mA)

- LED indicating the active channels (function can be changed by programming the FLASH EPROM)
- switch (can be programmed for stand alone work)
- reset switch

### connections

- RS 232
- IEEE 488 connector (EDA 5 only)



EDA 4

- universal AD/DA interface boards
- 4 channel DAC, 8 channel ADC 16 bit
- 8 bit  $\mu$ P, 64 k RAM, 128 k Flash on-board programmable
- comes with demo program for Windows
- easy access via terminal program

piezosystemjena

technical data		EDA 4	EDA 5
part no.		E-202-40	E-202-50
type of interface		RS 232-C, 9600 or 19200 or 57600 baud	RS 232-C, 9600 or 19200 57600 baud and IEEE 488.2
resolution		16bit	16bit
sample rate		32 ksamples/s	32 ksamples/s
number of analog	outputs	4	4
	inputs	8	8
number of digital	outputs	8 TTL (HCT573)	8 TTL (HCT573)
	inputs	8 as analog inputs programmable 0...+5V, 10bit	8 as analog inputs programmable 0...+5V, 10bit
output voltage range		0...+10V	0...+10V
size		100x160mm <sup>2</sup>	100x160mm <sup>2</sup>
width		6TE	10TE

Figure 1 shows motion of a piezo element with an integrated capacitive sensor. The TRITOR is controlled by an EDA 4 interface card with a resolution of 16 bit.

Because of the high resolution of the capacitive sensor, the minimal step of 1.2nm (16 bit resolution corresponding to a motion of 80 $\mu$ m in closed loop mode) can be resolved easily.

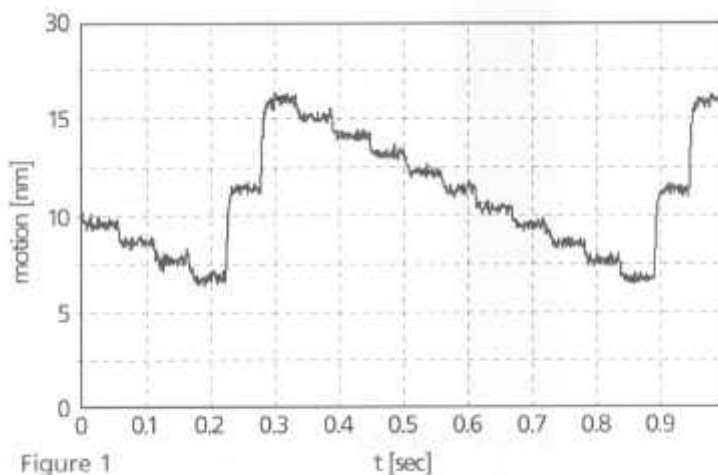


Figure 1