

## Instruction manual

### Multimode Fiberswitch



**Please read carefully before switching the device on.  
Please see also instructions for safety, using piezoelectric actuators and  
power supplies!**

F - 103

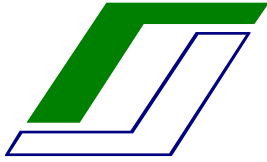
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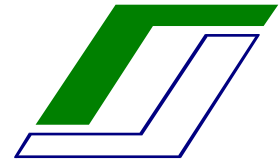
Serial Number:





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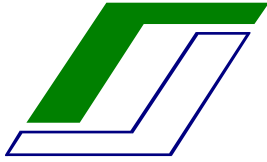
## 1 Overview

Depending on the type of the fiber, the switches are suitable for the spectral range of 200nm...2200nm. A complete switch consists of casing, fibers and fiber connectors.

The fibers are moved utilizing piezo-bending actuators. piezosystem jena is able to deliver switches equipped with the following standard fiber types:

- ⊗ 50/125 $\mu$ m
- ⊗ 62.5/125 $\mu$ m
- ⊗ 100/140 $\mu$ m
- ⊗ 200/220 $\mu$ m

Typical switching time is 2...3ms. Depending on the fiber type and number of channels, insertion losses are in the range of 1.4...2.5dB. The control voltage must be in the range as determined in the technical data. Any other values will cause the switch to work improperly.

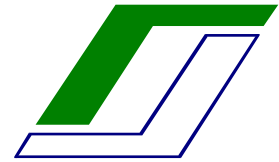


COMPETENCE  
IN PRECISION

## **2 certification of *piezosystem jena***

The company ***piezosystem jena GmbH*** is certified by DIN EN ISO 9001 since 1999.





### **3 Declaration of conformity**

#### **EU-Declaration of conformity**

This certificate is issued for the system:

**Multimode Fiberswitch**

manufactured at:

***piezosystem jena*** GmbH

**Pruessingstrasse 27**

**07745 Jena**

The system as described above herewith complies with the requirements of the European standards as follows:

EN 50082 (DIN VDE 0875 part 11) group 1, part 2

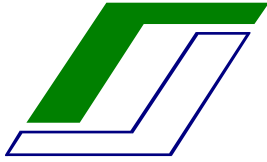
EN 55011, class B

declaration issued by:

***piezosystem jena*** GmbH  
Simone Fabian

(head of the optic department)

Jena, Feb.15th, 2001



## **4 Safety Instruction**

Definition:

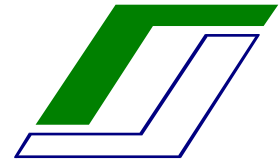
All systems from piezosystem jena such as electronics, actuators and optical systems are called units

Do not open the units! There are no user serviceable parts inside and opening or removing covers may expose you to dangerous shock hazards or other risks. Refer all servicing to qualified service personnel.

- Ⓢ Do not spill any liquids into the connectors or use the units near water.
- Ⓢ Do not place any heavy objects on any cables (e.g. power cords, optical cables). Damage may cause malfunction or shock or fire! Do not bend the optical cables.
- Ⓢ Do not place the units on a sloping or unstable cart, stand or table as they may fall or not work accurately.
- Ⓢ Work with the units only in a clean and dry environment! Do not use the switch under roughly environmental conditions, they are designed for lab applications only.
- Ⓢ Please use only original parts from piezosystem jena. piezosystem jena does not give any warranty for damages or malfunction caused by additional parts not supplied by piezosystem jena. Additional cables or connectors will change the specified data. This can change the specified properties of the units and cause them to malfunction.
- Ⓢ Fiberswitches are sensitive systems. They will demonstrate their excellent properties only if they are handled correctly! Please mount them properly only at the special mounting points.

Immediately unplug your unit from the power supply and refer servicing to qualified service personnel under the following conditions:

- Ⓢ When the power supply cord, connector or optical cable is damaged.
- Ⓢ If the unit has been exposed to rain or water.
- Ⓢ If the unit has been dropped or the housing is damaged.



## 5 Technical Data Fiberswitch F – 103,104,106,109

### 5.1 casing

fiber core / cladding diameter	≤ 100 / 140µm	200 / 220µm
length [mm]	175	225
height [mm]	44/45*	44/45*
width [mm]	105/130*	105/130*

\*with screw strap

Table 1: dimensions of the casing

### 5.2 electrical parameter

Power supply	5V stabilized ± 10%
Current	100mA(f=0Hz 50mA;f=50Hz 300mA)*
Electrical connector	Sub D25 pin
Level of control signals	TTL (0V / 5V)

\*frequenz of switching

Table 2: electrical parameter

### 5.3 optical parameter

	λ : 400nm	λ : 800nm
max. beam power	0,05W	2,00W
optical cable length (standard)	1m ± 15%	
connectors	standard ST (others on request)	

Table 3: optical parameter

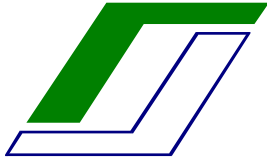
Please note:

You will find additional optical parameters on the measurement protocol.

### 5.4 temperatures

operating	0°C ...+60°C
storage	-40°C...+80°C

Table 4: temperatures



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## **6 Set up procedure**

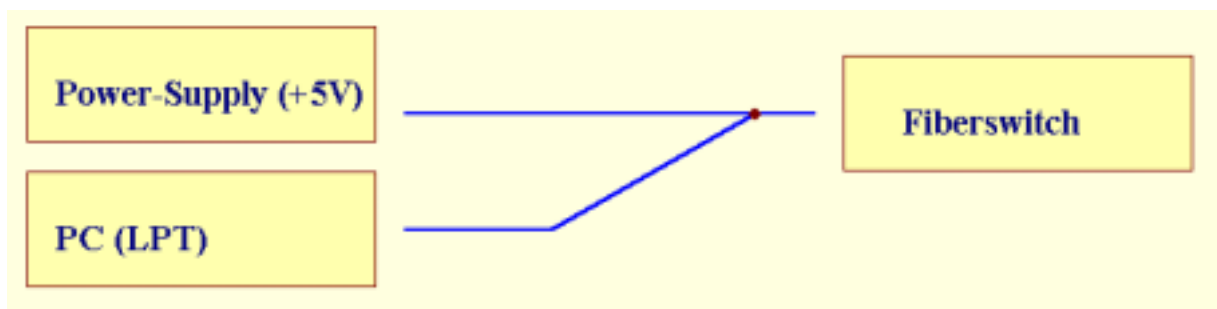
Please review the necessary power supply and the correct wiring.  
(details see technical data)

The switching procedure will be realized by BCD code.  
(details see enclosed measurement protocol)

The parallel port (LPT1/LPT2) of your computer must be connected with the SubD port of the switch (cable is not included!).

If the red LED is illuminated, the switch is in operation mode.

For example:



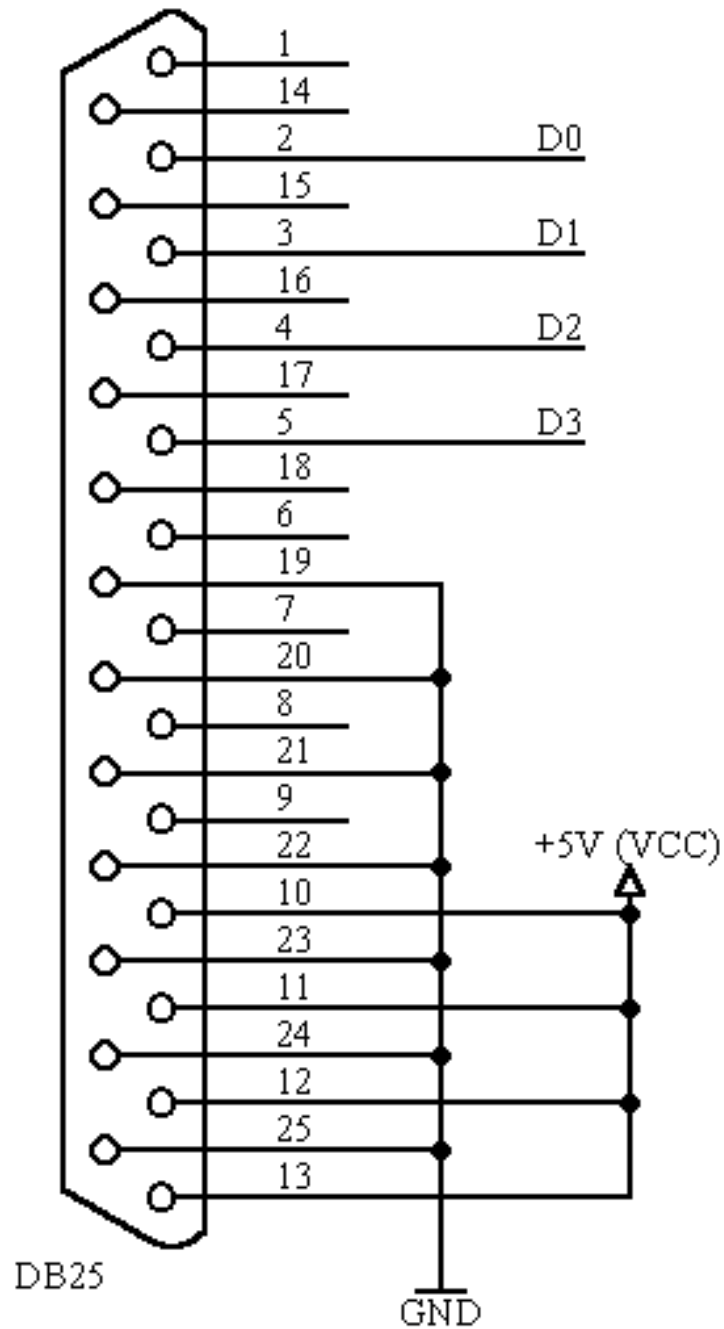
+ Demosoftware

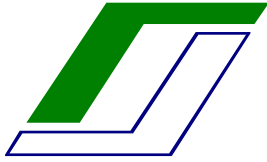
Direction:

- Ⓞ 5V DC switch on
- Ⓞ run demo-software
- Ⓞ select LPT1...LPT4
- Ⓞ select a channel

## 7 Wire connection of fiberswitch

Sub 25 pin





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## 8 Adaptor-wire PC-fiberswitch

**Fiberswitch**

**PC**

