

series ENV 40

voltage amplifier 40mA

- ◆ **40mA permanent**
- ◆ **19" casing**
- ◆ **each channel with separate display**
- ◆ **low voltage noise (< 0,3 mV_{RMS})**
- ◆ **optional: integrated measuring electronics and controller electronics**

applications:

- controlling of piezo actuators
- drift compensated controlling of piezo actuators with resistive measurement systems
- laboratory applications
- industrial applications



pic. 1: module ENV 40 SG

The voltage amplifier **ENV 40** was designed for low voltage piezo elements a 19" casing version. The **ENV 40** series is suitable for static and low frequency applications.

The actuator's voltage respectively the motion is monitored on the integrated LC-display. This piezo amplifier also provides the opportunity to operate the piezo element via an analog modulation input. With closed loop systems the position of the actuator can be examined via the monitor output. With open loop systems the output voltage can be examined via the monitor output. Due to the very low voltage noise of the output voltage of only 0,3 mV_{RMS} this amplifier system is ideally suited for positioning applications with sub-nm resolution. Special protective circuits prevent voltage spikes when switching the unit on and off.

Optionally the voltage amplifier **ENV 40** can be equipped with measuring electronics for capacitive or strain gauge measuring systems and the adequate controller electronics. With the electronic PID controller this system compensates any drift or hysteresis the piezo element implies.

| technical data | ENV 40 E-103-10 | ENV 40 SG E-240-100 | ENV 40 CAP E-103-60 | ENV 40 nanoX E-248-000 | ENV 40 nanoX SG E-248-100 | ENV 40 nanoX CAP E-248-600 |
|-------------------------------------|--------------------|------------------------|------------------------|--|---------------------------------|----------------------------------|
| output voltage | | | | -10 ... +150V | | |
| output current (permanent) | | 40mA | | | 2 x 40mA | |
| sensor controller | - | strain gauge | capacitive | - | strain gauge | capacitive |
| voltage noise | | | | 0.3mV _{RMS} @500Hz | | |
| modulation input | | | | 0 ... 10V BNC | | |
| input resistance | | | | 10kΩ | | |
| modulation input | | | | | | |
| DC-offset setting | | | | selectable via potentiometer | | |
| monitor | | | | LCD, 3.5 digit | | |
| connector (piezo) | LEMO 0S.250 | LEMO 0S.250 | LEMO 0S.302 | ODU3pol. | ODU3pol. | ODU3pol. |
| connector (measuring system) | - | LEMO 0S.304 | LEMO 0S.650 | - | LEMO 0S.304 | LEMO 0S.650 |
| monitor output (BNC)* | -1 to 15V | 0 to 10V | | -1 to 15V | 0 to 10V | |
| inside resistance monitor output | | | | <100kΩ (open loop) / <35kΩ (closed loop) | | |
| width | 14TE | 20TE | | 14TE | 20TE | |
| special features | | | | short circuit proof | | |

* In open loop systems the output voltage is displayed in a 10:1 (-1 ... 15V) ratio.

In closed loop systems the edited sensor signal is available. The monitor output voltage is 0 ... 10V for 100% motion in closed loop mode.