Why waste Piezoactuators performance by underdesigned electronics?

Piezoactuators are rather expensive devices and should therefore be operated in the most efficient way with regard to stroke, reliability and positioning sensitivity. It is a well known fact, that piezoactuators accept an asymmetric bipolar operation for static or low dynamic (low power) driving conditions.
For example a “+1000 V” actuator accepts 1000 V with positive voltage polarity according the actuators specification. Under this condition, the actuator expands with increasing voltage.

What is going on, when a countervoltage is applied?

Here the piezoactuator accepts up to approx. 20% of the max. voltage rating (–200 V in this case) and the actuator is shrinking. So the adoption of amplifiers to this asymmetric voltage range gives you an

additional stroke of your piezo of 20%

compared to unipolar 0 V / 1000 V supplies.
Further advantage of this asymmetric bipolar operation is the

increased reliability of your piezo.

Piezoceramic is subject to some deterioration during longest term high voltage operation, when a permanent unipolar high level voltage is applied. By using the asymmetric bipolar operation mode, you can reduce the peak voltage operation and reverse to some extent degradation mechanisms emerging under unipolar operation.

An extreme low level position relevant electrical noise for

highest positioning sensitivity of your piezo

is a self-evident feature of modern piezorelated power supplies.

All these features you get now with the SVR amplifiers ... and more!

- **individual LC-display for each channel**
- **individual “Monitor” output for low signal level real time monitoring of amplifier’s output**
- **D/A computer interfaces (serial/parallel) optionally**
- **feedback position control units optionally**

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High precision · Widest stroke
Piezo amplifiers
SVR 150 V / 500 V / 1000 V

New products

Triple channel amplifiers SVR

SVR 150/3

Technical data for individual channel

Number of independent channels:	3
Voltage range by amplifier mode:	–30 V thru +150 V
Voltage range by manual DC-offset:	–30 V thru +150 V
Noise (positioning relevant):	less 1 mV
(with capacitive load 250 nF):	equivalent a fluctuation in position of less than 0.1 nm for a 150 V / 20 µm stroke actuator like PSt 150/7/20
Input signal:	–1 V thru +5 V or –2 V thru +10 V
Input impedance:	10 kOhm
Gain factor:	30
Max./average current:	60 mA
Average power:	7 Watts
Device bandwidth (open output):	20 kHz
Bandwidth with capacitive load:	like SQV 3/150 amplifier (see main brochure)
Current limitation:	short circuit proof
Dimensions:	H x W x D 160 x 250 x 350 mm
Weight:	3 kg
Line voltage:	115/60 Hz 230/50 Hz
Input connectors:	BNC
Monitor connectors:	BNC
Output connectors:	BNC, optionally LEMOSA 0S.250 or LEMOSA 00.250

SVR 500/3

Technical data for individual channel

Number of independent channels:	3
Voltage range by amplifier mode:	–100 V thru +500 V
Voltage range by manual DC-offset:	–100 V thru +500 V
Noise (positioning relevant):	1 mV
(with capacitive load 100 nF):	equivalent a fluctuation in position of 0.03 nm for a 500 V / 15 µm stroke actuator like PSt 500/10/15
Input signal:	–1 V thru +5 V or –2 V thru +10V
Input impedance:	10 kOhm
Gain factor:	100
Max./average current:	15 mA
Average power:	7 Watts
Device bandwidth (open output):	20 kHz
Bandwidth with capacitive load:	like SQV 3/500 amplifier (see main brochure)
Current limitation:	short circuit proof
Dimensions:	H x W x D 160 x 250 x 350 mm
Weight:	3 kg
Line voltage:	115/60 Hz 230/50 Hz
Input connectors:	BNC
Monitor connectors:	BNC
Output connectors:	BNC, optionally LEMOSA 0S.250

SVR 1000/3

Technical data for individual channel

Number of independent channels:	3
Voltage range by amplifier mode:	–200 V thru +1000 V
Voltage range by manual DC-offset:	–200 V thru +1000 V
Noise (positioning relevant):	2 mV
(with capacitive load 100 nF):	equivalent a fluctuation in position of less than 0.05 nm for a 1000 V/15 µm stroke actuator like PSt 1000/10/15
Input signal:	–1 V thru +5 V or –2 V thru +10 V
Input impedance:	10 kOhm
Gain factor:	200
Max./average current:	8 mA
Average power:	7 Watts
Device bandwidth (open output):	20 kHz
Bandwidth with capacitive load:	like SQV 3/1000 amplifier (see main brochure)
Current limitation:	short circuit proof
Dimensions:	H x W x D 160 x 250 x 350 mm
Weight:	3 kg
Line voltage:	115/60 Hz 230/50 Hz
Input connectors:	BNC
Monitor connectors:	BNC
Output connectors:	LEMOSA 0S.250