

**NDR6880**  
**Single Channel Dynamic Driver for Piezoelectric Actuators**

**Purpose**

The **NDR6880** is the one channel driving unit used for static and dynamic supply of large piezoelectric actuators having capacity up to 200uF. The NDR6880 is primarily designed as a standalone laboratory desktop unit. It is used for driving or positioning or (in common sense) for operating only the piezoelectric actuators/stacks of various types. The device is not designed for use with loads having high energetic losses. The device also cannot be used with piezoelectric actuators having positive energetic balance in long term meaning (energy harvesting).

Laboratory driver - NDR6880 Single Channel Dynamic Driver  
 (0 ÷ +300V, 10 A peak; 7 A amplitude of sine wave)

**Features**

- High current
- High power
- Power recovering
- Wide frequency range
- Galvanic separation of output from other circuitry

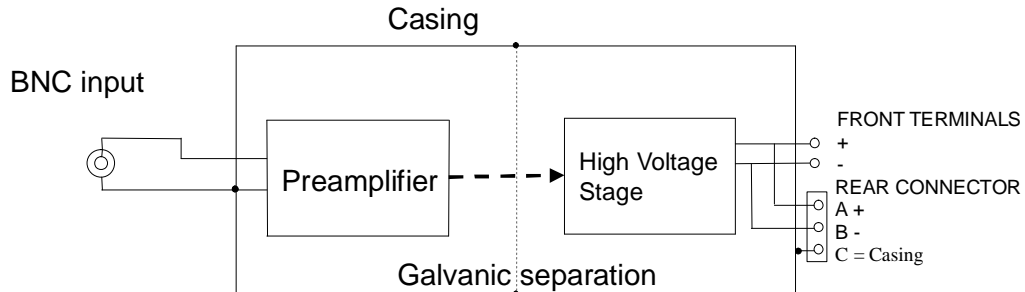
Output voltage amplitude 0 ÷ +300V and load current 10 A peak.

The driver can supply actuators having capacity up to 200 µF.

Driver **NDR6880** is available in another version: **NDR6880-20A** for 20 A peak.

**Description**

The device is a source of single polarity voltage. Its value is proportional to input signal. The NDR6880 consists of two main blocks - the preamplifier and the high voltage stage. The input stage is galvanically separate from the output high voltage part. Signal ground of the BNC connector is connected to the device casing. Amplifier output is floating. One of the output wires could be optionally grounded externally. Block schema is in the Figure 1.



**Figure 1** Block schematics of the NDR6880

The device operates at switching principle with pulse-width modulation. The energy from mains is forwarded into the actuator. Output voltage grows in accordance with the input signal. When the phase of the input is changed the electric charge is “pumped” back from the actuator to internal storing capacitors. In the next phase is the charge from the capacitor transferred into the actuator again. If the voltage on the storage capacitor falls under preset limit the energy in the capacitor is refilled from the power supply.

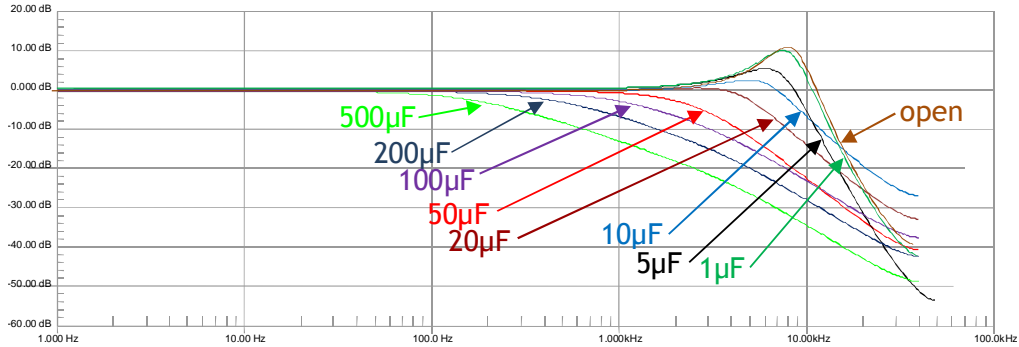
## Parameters

Electrical parameters			
Parameter	Unit	Value <sup>1</sup>	Remark
Number of channels		1	
Supply voltage	V	230 V / 50 Hz or 115 V / 60 Hz	Two versions of the device
Power	W	Max. 110	
Output voltage amplitude and load current amplitude	V	0 ÷ 300	
	A	7	
Peak current	A	10	Maximal power must not be exceeded. Otherwise the thermal fuse will stop the driver.
Power losses from the actuator covered by the driver	W	80	Per all device
Frequency range			
Low frequency limit	Hz	0	DC coupled, but galvanically isolated
High frequency limit (-3 dB)	kHz	6 20	Full stroke Small signals
Frequency filter	Hz	100	Switchable
Output voltage linearity	%	5	
Output noise	mV	30 <sup>2</sup>	RMS, 100 µF load
Maximal capacitive load	µF	200	
Input voltage range	V	0 ÷ 10 or 10 ÷ 0	Selectable input phase
Input impedance	kΩ	10	
Input connection		BNC	
Output connection		+/- terminals and 3 way Amphenol type 62IP	
Maximum voltage between input and output part and maximum voltage between channel outputs	V	500	
Dimensions	mm	382x270x160	
Mass	kg	7.4kg	
Temperature range	°C	+5 ÷ +45	

<sup>1</sup> Tolerance 10 % is applied on all values (if applicable).

<sup>2</sup> Value is guaranteed from 10 to 90 % of dynamic range. Out of this range could be the residual noise or distortion at small capacitive loads higher

### Frequency response for various capacitance loads



### WARNING

The instrument may only be operated by personnel who are capable of recognizing contact hazards and implementing appropriate safety precautions. Contact hazards are present anywhere where voltages are higher than 50 V.

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