

# NDR6210DC and NDR6220DC Single Channel Dynamic Driver



NDR6210DC and NDR6220DC are DC versions of the piezo drivers NDR6210 and NDR6220 with similar features. The output voltage range is from 0 to +360 V or  $\pm 180$  V depending on the piezo type.

## SPECIFICATIONS

### Electrical parameters

| Parameter                                  | Unit | Typical value           | Remark                                 |
|--|------|-------------------------|--|
| <b>NDR6210DC</b>                           |      |                         |  |
| Maximal power                              | W    | 25                      |  |
| Output voltage maximal ranges <sup>1</sup> | V    | 0 ÷ +300<br>-180 ÷ +180 | For stacks<br>For benders              |
| Maximum current amplitude                  | A    | 0.4                     |  |
| Peak current                               | A    | 0.75                    | <0.5 ms impulse,<br>10 ms period       |
| <b>NDR6220DC</b>                           |      |                         |  |
| Maximal power                              | W    | 60                      |  |
| Output voltage maximal ranges <sup>1</sup> | V    | 0 ÷ +300<br>-180 ÷ +180 | For stacks<br>For benders              |
| Maximum current amplitude <sup>2</sup>     | A    | 1                       | Ambient temperature<br>less than 22 °C |
| Peak current                               | A    | 1.5                     | <0.5 ms impulse,<br>10 ms period       |

## NDR62DC series parameters

|                                       |      |                                     |                                       |
|---------------------------------------|------|-------------------------------------|---------------------------------------|
| Power supply                          | V    | 230 V / 50 Hz or 115 V / 60 Hz      | Two versions of the device            |
| Voltage limiters                      | V    | ±180                                | Both – high limit and low limit       |
| Output voltage distortion             | %    | 5                                   |                                       |
| Maximal capacitance load <sup>3</sup> | µF   | 100                                 |                                       |
| Frequency range                       |      |                                     | DC coupled, galvanically isolated     |
| Low frequency limit                   | Hz   | 0                                   |                                       |
| High frequency limit – 2 dB           | kHz  | 10                                  | Limited by maximal power              |
| Slew rate                             | V/µs | 10                                  |                                       |
| High frequency filter                 | -    | 50 Hz, 500 Hz, 2500 Hz and 10 kHz   | Settable from the panel               |
| Offset setting                        | %    | ±100                                |                                       |
| Output noise <sup>4</sup>             | mV   | 5                                   | Typical RMS value, 1 µF load          |
| Input voltage range <sup>5</sup>      | V    | 0 ÷ 10.0, 0 ÷ 5.0, 0 ÷ 2.5, 0 ÷ 1.0 | Settable from the panel               |
| Input impedance                       | kΩ   | 10                                  |                                       |
| Input connection                      | -    | BNC                                 |                                       |
| Output connection                     | -    | 4 pin LEMO                          | The output plug is FGG.0B.304.CLAD52Z |
| Measured values <sup>6</sup>          | -    | LCD display with 2 rows             | Voltage, temperature                  |

<sup>1</sup> The other output ranges available on demand.

<sup>2</sup> Two front long purple rubber feet must be used!

<sup>3</sup> Sum of both piezo capacitances for benders.

<sup>4</sup> Input is shorted and output is set with the aid of offset into 0 V DC. Noise voltage RMS was measured in bandwidth 0 ÷ 300 kHz.

<sup>5</sup> Other input ranges on request.

<sup>6</sup> Temperature is the only informative value.

**Environmental parameters**

| Parameter          | Unit | Typical value                           | Remark                     |
|--------------------|------|---|----------------------------|
| Temperature range  | °C   | +5 ÷ +45                                |                            |
| Relative humidity  | %    | max 80 % to 31 °C, max 50 % above 40 °C |                            |
| Ingress protection |      | IP20                                    | When connectors are opened |

**Mechanical parameters**

|                         |  |     |  |
|-------------------------|--|-----|--|
| Dimensions <sup>1</sup> | Width 105 mm, height 65 mm, depth 200 mm |     |  |
| Mass                    | kg                                       | 1.9 |  |

<sup>1</sup>Dimensions are without purple rubber feet (foot overlap is about 5.5 mm) and without connector(s) overlap.

## FEATURES

NDR6210DC and NDR6220DC are DC versions of the piezo drivers NDR6210 and NDR6220 with similar features. They work with 2 DC sources going up to  $\pm 180$  V DC. Both drivers can supply actuators with capacity up to 100  $\mu$ F. The output voltage range is from 0 to +360 V or  $\pm 180$  V depending on the piezo type.

### Features

- Fast linear low noise driver
- Galvanic separation of the output
- Adjustable input range and phase inversion
- 4 predefined cut off frequencies
- G class design with higher efficiency so less warming
- Soft startup
- Adjustable output voltage limiters
- Actuator discharge circuit
- 2 DC sources up to  $\pm 180$  V DC
- Switch off timer