

# DN200

Active Stereo DI Box with Extended Dynamic Range and Sum/Split Options



- ⊗ High headroom design with +48 V phantom power for extended dynamic range
- ⊗ Sum and split options for flexible signal routing
- ⊗ Fully transformer-isolated design ensures electrical separation between PA and stage equipment
- ⊗ Balanced line inputs on Neutrik Combo\* XLR and high impedance ¼" TRS connectors
- ⊗ RCA Phono inputs for connection of consumer audio equipment
- ⊗ Independent phantom powering for each channel for maximum reliability
- ⊗ Global 20 dB input pad and earth lift switches
- ⊗ Aluminium extrusion casing with protective silicone rubber sleeve
- ⊗ Compact and rugged design
- ⊗ 3-Year Warranty Program\*
- ⊗ Designed and engineered in England

Building on the success of DN100, the DN200 offers the same high headroom, dynamic response and sonic clarity, with the added convenience of two stereo channels in the same sized enclosure. DN200 is ideal for interfacing computers, keyboards, samplers and other electronic musical instruments to mixing consoles, and faithfully reproduces the character of electric



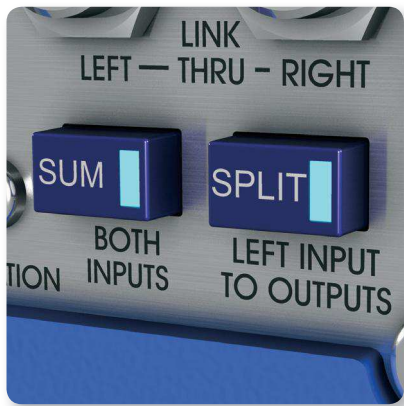
and acoustic instruments, allowing far more of the detail of musical performances to be captured. DN200 is intended for professional applications where +48 V phantom power is a standard feature on all mixing consoles, and its innovative design results in a significantly higher clipping point than many other active DI Boxes, providing +10 dBu output into a 2 kΩ load. This increased headroom means that much higher level input signals can be accommodated without the need for an attenuating pad. Combined with a very low noise input circuit topology, DN200 offers a very wide dynamic range and only requires a single -20 dB pad, which is optimised for use with electronic musical instruments.

DN200 is built to handle the rigours of life on the road, a thick aluminium extrusion protects the electronics, and in turn is covered by a tough silicone rubber sleeve.

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## Input Summing and Output Splitting

DN200 offers two flexible signal routing options, in Sum mode both inputs are summed at -6 dB to maintain the overall signal level and are routed to the left output. In Split mode, the left input is routed to both outputs at unity gain. Both option switches include LEDs for clear indication of signal routing.

## Balanced transformer-isolated outputs

Exhaustive listening tests using a wide variety of active and passive bass guitars, electro-acoustic guitars and electronic musical instruments were carried out to select the components for DN200 to achieve the best musical sound. Not only was the choice of the audio transformer particularly important in achieving this goal, but the impedances of the surrounding components were also highly critical in getting the best possible performance out of the audio transformers. The line-driving characteristics of the transformer outputs were carefully optimised to provide the best frequency and phase responses for short and long cables and widely differing line and termination impedances.

Care was taken in the design of the DN200 to avoid audio transformer core saturation and a fixed high pass filter has been included in the signal path to roll off frequencies below those that are musically important. The lowest note on a 5- or 6-string bass guitar is B0 with a frequency of 30.87 Hz, and the lowest note on an 88-key piano keyboard is A0 with a frequency of 27.50 Hz. DN200 still maintains a frequency response of  $\pm 0.5$  dB at these lowest musical notes.

As well as the transformers in the signal paths, DN200 also has separate transformers to isolate the independent power rails to the two input circuits from the phantom power supply sourced from the output XLR connectors. When used in conjunction with the Earth Lift switch, this full galvanic isolation of input and output interfaces ensures that any risk of earth loops is avoided when taking direct feeds from stage backline equipment.



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## Dual-Impedance Inputs

A custom instrumentation-grade input circuit was designed for the DN200 using advanced analogue design techniques to create the very high input impedance required by passive guitar and bass pickups, whilst keeping the actual component values low to minimise noise. This innovative approach to circuit design produces a very low noise floor, which combined with the high clipping point creates an unrivalled dynamic range in a +48 V phantom powered DI Box.

DN200 features two Neutrik Combo combined XLR and ¼" TRS connectors with dual input impedances. When connecting to the XLR input only, the input impedance is 20 kΩ, ideal for line level equipment and offering even lower noise performance. This input impedance is far too low for guitar and bass pickups and is removed from the circuit when a jack plug is inserted into the ¼" TRS input, resulting in a nominal 1 MΩ input impedance, ideal for passive electric pickups.

Stereo RCA Phono inputs are also provided for the connection of consumer audio equipment and also feature a 20 kΩ input impedance. Link output ¼" TRS jack connectors are also included for each channel.

## Illuminated 20 dB Pad and Earth Lift Switches

DN200 features illuminated global 20 dB Pad and Earth Lift switches, which act on both channels simultaneously, which along with the individual +48V indicator LEDs for the independent phantom powering of the two channels, provide 'at a glance' status display, even at wide distances and viewing angles.

The Earth Lift switch separates the input and output grounds, useful in eliminating earth loops between equipment on different mains electricity supplies.



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## Built for the Road

Featuring a tough aluminium extrusion, the DN200 is designed for the rigours of live concert touring. The protective silicone rubber sleeve also insulates the DN200 chassis to further enhance its electrical isolation. Premium Neutrik XLR connectors are used to ensure reliable audio connections, night after night.

## You Are Covered

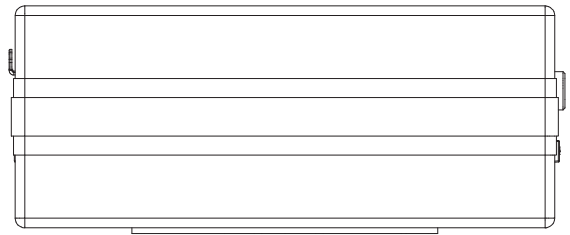
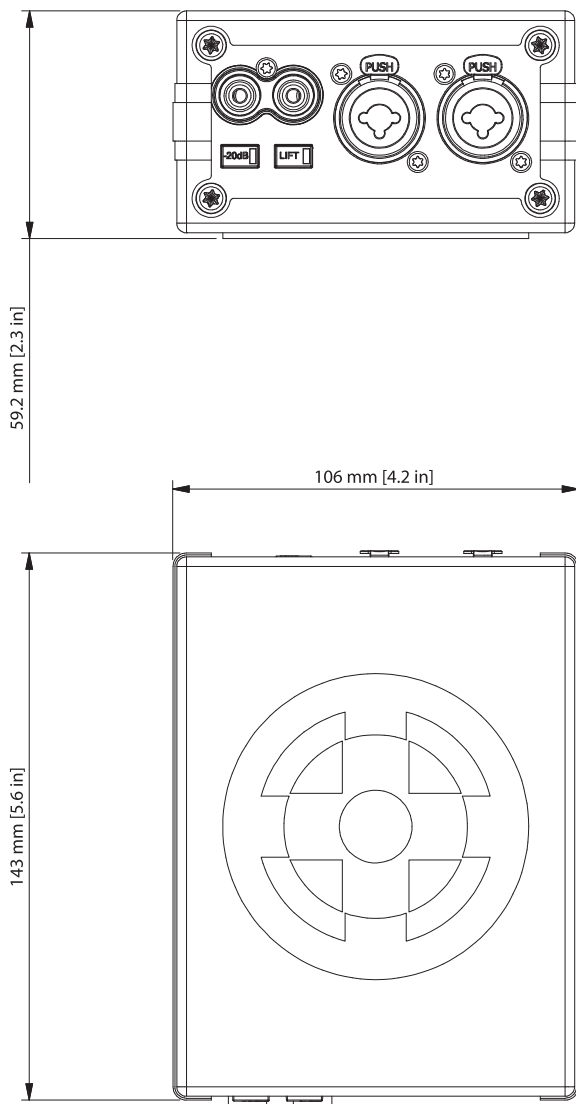
We always strive to provide the best possible Customer Experience. Our products are made in our own [MUSIC Group](#) factory using state-of-the-art automation, enhanced production workflows and quality assurance labs with the most sophisticated test equipment available in the world. As a result, we have one of the lowest product failure rates in the industry, and we confidently back it up with a generous [3-Year Warranty](#) program.



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## Dimensions



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## Technical Specifications

### Inputs

Type	Active electronic, balanced or unbalanced
Impedance	1 M $\Omega$ nominal, balanced or unbalanced ( $\frac{1}{4}$ " TRS connectors), 20 k $\Omega$ (XLR input, RCA Phono input)
Connectors	2 Neutrik Combo XLR/ $\frac{1}{4}$ " TRS input connectors with parallel linked RCA Phono input connectors and $\frac{1}{4}$ " TRS linked outputs connectors
Maximum level	+30 dBu (with pad enabled)
Attenuator	20 dB pad

### Outputs

Type	Transformer balanced
Impedance	75 $\Omega$
Connector	3 pin XLR
Max. Level	+10 dBu with load >2 k $\Omega$
Min. load	600 $\Omega$

### Performance

Noise	-100 dBu, 20 Hz to 20 kHz unweighted, with input terminated by 10 k $\Omega$ resistor
Frequency response	+0.5/-1 dB 20 Hz to 20 kHz
Distortion (THD+N)	<0.01% @ 1 kHz, +4 dBu

### Power Requirement

Voltage	+48 V Phantom*
Current consumption	<20 mA (Both channels)

### Weight

Net	0.95 kg
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### Dimensions

Length	143 mm (5.6 inch)
Width	106 mm (4.2 inch)
Height	59.2 mm (2.3 inch)

\* The DN200 has been designed to allow use at phantom voltages less than +48V. The unit will function down to +20V (when used with 6k8 dropping resistors) but with reduced headroom and dynamic range. All the specifications above are quoted using standard +48V Phantom power.

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## Architecture & Engineering Specifications

The direct injection module shall provide the functions of transformer isolation, impedance matching and attenuation into a low impedance active balanced input.

The direct injection module shall provide switchable attenuation from 0 to 20 dB and output the signal into a balanced 600  $\Omega$  load.

The direct injection module shall be able to accept a maximum input level of +30 dBu (with attenuator enabled).

The direct injection module shall include two ¼" TRS jack sockets and one industry-standard XLR socket, all linked.

The direct injection module shall offer dual impedances, based on input connection - 1 M $\Omega$  nominal (¼" TRS jack sockets) or 20 k $\Omega$  (XLR only).

The direct injection module output shall be transformer balanced and isolated, with a source impedance of 75  $\Omega$  and capable of driving a 10 dBu signal into a 2 k $\Omega$  load.

The direct injection module output connection shall use an industry-standard XLR connector.

The direct injection module shall obtain power from a nominal +48 V phantom supply via the output XLR connector.

The direct injection module shall feature an earth lift switch, which shall be provided to disconnect the input and output grounds.

The direct injection module shall be housed in a custom aluminium extrusion which shall be covered by a protective rubber sleeve, it shall be 106 mm wide x 142 mm deep x 59.2 mm high (4.2" x 5.6" x 2.3"), with nominal weight 0.95 kg (1.8 lbs).

The direct injection module shall be the KLARKTEKNIK DN200 and no other alternative shall be acceptable.

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