

MDC-128

MIDI TO DMX CONVERTOR



User Guide

Features of the MDC-128

- | Converts any complete MIDI channel to DMX
- | Works from NoteOn/NoteOff or Control Change
- | Velocity converts to brightness

Installation.

Connect the MDC-128 to the mains with the lead supplied.

- | Brown = live
- | Blue = neutral
- | Green/Yellow = earth
- | The MDC-128 must be earthed.

Connections:

Connect the MIDI signal to the MIDI IN socket using a standard MIDI lead.

Connect the MIDI THROUGH socket to other items in the MIDI chain using a standard MIDI lead.

Connect the DMX output to the first item of DMX controlled equipment using a screened twisted pair lead fitted with an XLR plug.

Please note that the MDC-128 does not have an audio input. Do not connect an audio signal to any of the sockets on the back of the unit. Connection of an audio signal may result in damage to the internal circuitry.

Operation

Setting the MIDI channel.

The MDC-128 converts one entire MIDI channel to DMX. Select which channel you wish to convert on the switches on the back of the unit.

Midi Channel	Switches on (All other switches off)
1	NONE
2	1
3	2
4	1, 2
5	4
6	4, 1
7	4, 2
8	4, 2, 1
9	8
10	8, 1

11	8, 2
12	8, 2, 1
13	8, 4
14	8, 4, 1
15	8, 4, 2
16	8, 4, 2, 1

The MDC-128 can either convert NoteOn and NoteOff messages to DMX, or it can work from Control Change messages. Set the C/N switch to ON if you want to use Control Change messages, or to OFF if you want to use NoteOn/NoteOff messages.

Setting the DMX address switches on DMX controlled lighting.

DMX equipment has a set of switches (similar to the MIDI channel select switches) to set the DMX address. Set these switches to one more than the Note Number that you wish to use to control the lighting. (If you are using control change messages as above, set the DMX address switches to the controller number that you wish to use). Most DMX lighting allows addresses to be set to any number from 1 to 256, and some allow up to 512. The MDC-128 converts all 128 notes on a midi channel to DMX, so must be used with DMX addresses below 128. By setting the DMX addresses to different note numbers, different notes can be used to control different lighting products.

The MDC-128 converts the Midi Velocity (or controller data) to DMX data. MIDI velocity and data only range from 0 to 127, to convert this to DMX data which ranges from 0 to 255, the MIDI data is doubled.

Many DMX lighting effects require more than one DMX address, and these will be controlled by more than one MIDI note (or controller) number. In this case the Address switches set the first note number, and the unit responds to this note number and three more notes immediately above.

For instance, the NJD IQ500 requires four DMX addresses, so it will be controlled by four midi Notes (or controls). The DMX address switches will be set to the first note number, 49 for example, by setting switches 32 and 16 ON on the back of the IQ500. Note number 48 (C) will then control the pan mirror of the IQ500, Note number 49 (C#) will control the tilt mirror, Note number 50 (D) will control the colour and note number 51 (Eb) will control the gobo.

A second IQ500 could then be used with its DMX address set to 53, (by setting switches 32, 16 and 4 ON). This would be controlled by Note number 52 (E) (pan mirror), Note number 53 (F) (tilt mirror), note number 54 (F#) (colour) and note number 55 (G) (gobo).

For further information on DMX addresses and data please refer to the User Guide of the Lighting equipment that you are using.

The colours on the IQ500 are controlled as follows:

Colour	DMX data	Midi velocity
Magenta	0 - 31	0 - 15
Yellow	32 - 63	16 - 31
Cyan	64 - 95	32 - 47
Pink	96 - 127	48 - 63
Green	128 - 159	64 - 79
Red	160 - 191	80 - 95
Blue	192 - 223	96 - 111
White	224 - 255	112 - 127

Because the maximum velocity is 127, the velocity is doubled to arrive at the DMX data.

Sending a **Note On** message for note number 54 at velocity 70 will set the colour of the second IQ500 to green. Or, if control change operation is selected, sending a control change message for controller number 54 with the controller data set to 70 will set the colour of the second IQ500 to green.

DMX.

The DMX system is a high-speed digital data system, which can transmit all the information required for light dimmers, multi-motor lighting effects etc. down a single cable. The IQ250 outputs a DMX signal when operating from its own microphone, which can be used to synchronise other IQ250s. There is no limit to the number of units that can be connected to the DMX signal, but it is not recommended that the total cable length should exceed 250m. Each unit connected to the DMX signal is given an address, and it compares this to the data being sent on the DMX cable, so it can determine which data is addressed to it. It then uses this data to move a motor or set a brightness level as required by the controller. As the DMX system can transmit as much information as 512 analogue control wires down a single cable, it has to transmit very quickly, in fact, at a frequency 12 times higher than the highest audio frequency. Anyone who has used long leads for audio will realise that it is difficult to do without losing the higher frequencies. To make the DMX system work at such high frequencies, it requires special circuitry and special cable. Cable can be designed to pass high frequencies with no loss if it has the correct resistance connected at each end, this resistance is called the characteristic impedance of the cable. DMX cable has a characteristic impedance of 120Ω. All NJD DMX products are designed to ensure that the resistors are connected automatically. Without them, the signal reflects off the end of the cable and interferes with the new data coming the other way. If the cable is not correct, the system will not work. Most good quality low-capacitance screened twisted pair cables will work, but twin individually screened will not. Also, if the cable is split or joined other than end-to-end, the system will stop working.

Technical specification.

Dimensions:	482 x 44 x 100 mm
Power supply:	230V AC 50Hz
Power requirements:	3VA
Mains input:	0.75mm ² cable to BS6500
Fuse:	F100mA 5 x 20mm HBC to IEC127.
Midi input:	Standard 5-pin DIN
DMX output:	3-pin XLR
Channels 1-128	Data+ = pin 2 Data- = pin 3 Earth = pin 1

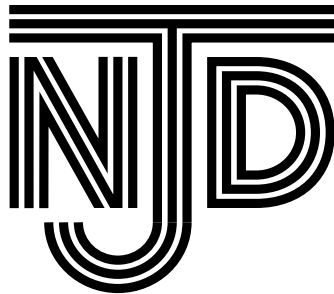
DMX OUTPUT



Standards:

The MDC-128 complies with the following standards:

- EN60065 electrical safety
- EN55014 electromagnetic compatibility
- IEC 297 fascia panel dimensions
- RS-485 Digital transmission system
- USITT DMX512:1990 Lighting control protocol
- MIDI specification.



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