

IF32



User Guide

Features

The IF32 enables the conversion of a standard DMX signal to two sets of 16 analogue outputs of 0 - 10V. Powered from any NJD power pack, the IF32 requires no mains power supply and will allow each set of 16 outputs to be assigned to any 16 consecutive DMX addresses. Supplied in a 1U rack mount case with all external connections the IF32 features IN and OUT DMX sockets allowing it to be introduced at any point in the DMX signal supply line.

Installation.

Connect the incoming DMX signal to the ¼" jack socket marked **DMXin**. Continue the DMX chain from the ¼" jack socket marked **DMXout** to the next item in the DMX control chain.

The IF32 will operate with either switching of dimming power packs (such as the DP5000, DP10000 and SP10000) provided that they have a +15V output.

To Connect to an NJD rack-mounted power pack (DP10000x or SP10000x)

Use a 7-pin DIN-DIN straight wired lead i.e. pin 1 - pin 1, pin 2 - pin 2, pin 3 - pin 3 etc. Connect from the output of the IF32 to the input of the power pack. Ensure that the +10V terminal inside the power pack is linked to the ENABLE terminal.

To connect to an NJD wall mounted power pack (DP10000 or SP10000)

Connect a lead from the 7-pin DIN socket output of the IF32 to the ANALOGUE INPUTS terminal block of the power pack.

Connections are as follows

7-pin DIN socket	Terminal block
Pin 1	Channel 1
Pin 2	0V
Pin 3	Channel 4
Pin 4	Channel 2
Pin 5	Channel 3
Pin 6	+15V supply
Pin 7	+15V supply

Link between +10V and ENABLE

Connecting to other manufacturers'
power packs

Do not connect to a power packs with a supply voltage output of more than +20V, nor power packs with a negative supply voltage output. This may damage the IF32.

Connect the power supply voltage output from the slave pack to either pin 6 or pin 7 or both on the IF32 7-pin DIN sockets.

Whilst it is only necessary to connect the power supply from one power pack to each half of the IF32, it is advisable to connect them all. This ensures that if the mains to one slave pack is disconnected, then the IF32 does not lose its power supply. The power supply connections can come from power packs on different mains phases. The green LEDs will light when power is present.

If no supply is available from the power pack proceed as follows:

The IF32 may be used with an external +15V 100mA supply - connect between pin 6 and pin 2 on two 7-pin DIN sockets, pin 6 positive, pin 2 negative. It is not necessary to use a regulated supply. Connect to one socket on each half of the IF32.

The IF32 may also be used with a transformer. Use a 12-0-12V 100mA transformer . Connect as follows: 12V - pin 6 0V - pin 2 12V - pin 7 on two DIN sockets, one DIN socket on each half of the IF32.

If only half of the IF32 is being used, it is not necessary to connect a power supply to the other half. Only one power indicator will light in this case.

Connect the 0-10V analogue outputs from the IF32 to the analogue inputs of the power pack.

Setting the DMX address switches:

DMX addresses	Switches on (other switches off)
1 to 16	None
9 to 24	8
17 to 32	16
25 to 40	16, 8
33 to 48	32
41 to 56	32, 8
49 to 64	32, 16
57 to 72	32, 16, 8
65 to 80	64
73 to 88	64, 8
81 to 96	64, 16
89 to 104	64, 16, 8
97 to 112	64, 32
105 to 120	64, 32, 8
113 to 127	64, 32, 16
121 to 136	64, 32, 16, 8
129 to 144	128
137 to 152	128, 8
145 to 160	128, 16
153 to 168	128, 16, 8
161 to 176	128, 32
169 to 184	128, 32, 8
177 to 192	128, 32, 16

185 to 200	128, 32, 16, 8
193 to 208	128, 64
201 to 216	128, 64, 8
209 to 224	128, 64, 16
217 to 232	128, 64, 16, 8
225 to 240	128, 64, 32
233 to 248	128, 64, 32, 8
241 to 256	128, 64, 32, 16

Do not set all switches ON

The DMX address for each half of the IF32 can be set independently.

The 0 to 10 Volt analogue control signals corresponding to the DMX channels selected appear on the 7-pin DIN sockets. The lowest numbered DMX address appears on IF32 output channel 1, and the highest on IF32 output channel 16.

For example: If switches are set with Switch 128 and 8 on and others off. This selects DMX addresses 137 to 152. DMX address 137 will control channel 1, 138 will control channel 2, 139 will control channel 3, and so on, up to DMX address 152 which will control channel 16 on the IF32.

The IF32 cannot be used with DMX addresses above 256.

Controlling power packs from an intelligent DMX controller such as Merlin.

For a dimming power pack

Output brightness is proportional to DMX data:

DMX data = 255 output fully on

DMX data = 128 output at half brightness

DMX data = 64 output at quarter brightness

DMX data = 0 output fully off (if preheat is disabled)

These are only examples, the IF32 and a dimming power pack can produce all 256 levels of brightness from fully off to fully on.

For a switching power pack:

DMX data < 76	output definitely off
DMX data > 180	output definitely on
DMX data between 76 and 180:	do not use - output may be on or off.

DMX.

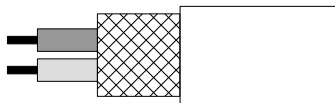
The DMX system is a high-speed digital data system, which can transmit all the information required for light dimmers, multi-motor lighting effects etc. down a single cable.

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.

Fault Finding

Channel 2 flashes on and off and other outputs go to full brightness.

No valid DMX signal

No output

Power pack does not produce a +15V output

DIL switches set to wrong address.

Voltage is measured on IF32 output but power pack outputs do not operate.

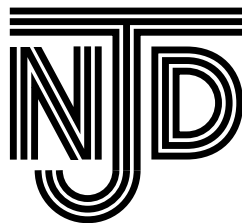
ENABLE and +10V are not linked in the power pack.

Technical Specification.

Dimensions: 482 × 110 × 44mm
 Power requirements: +15V DC @ 100mA
 Minimum: +12V DC
 Maximum: +20V DC
 Input: DMX512
 DMX Connectors: ¼" stereo jack
 tip = data+
 ring = data-
 sleeve = earth
 Output: 0 to +10V analogue
 Output current: 20mA maximum
 Output connectors: 7-pin DIN sockets

7-Pin DIN socket connections:

Pin 1:	Channel 1	Channel 5	Channel 9	Channel 13
Pin 2:	0V	0V	0V	0V
Pin 3:	Channel 4	Channel 8	Channel 12	Channel 16
Pin 4:	Channel 2	Channel 6	Channel 10	Channel 14
Pin 5:	Channel 3	Channel 7	Channel 11	Channel 15
Pin 6:	+15V input	+15V input	+15V input	+15V input
Pin 7:	+15V input	+15V input	+15V input	+15V input



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