



ND 4600/ ND 5000

ADDRESSABLE DIMMER PACKS

OPERATION MANUAL

INTRODUCTION

Dimmer packs are the heart of any stage lighting system. They translate coded signals generated by controllers into power levels required to drive high power lamps to desired intensities.

The NSI ND 4600 and ND 5000 satellite dimmer packs are both fully user addressable allowing assignment of four of a possible one hundred twenty-eight control channels. Microplex technology, developed by NSI for the stage lighting market, is the electrical marriage of microprocessor technology with digitally controlled multiplexing. Microplex technology allows your system to be connected using standard microphone cables or even audio snakes. System expansion is further simplified through the ability to daisy chain additional dimmer packs to an existing system. This application of Microplex technology makes system set up and operation easy and convenient. In addition, NSI products have been known to be compatible with other manufacturer's lighting products that use the same microphone cable interface.

Our philosophy at NSI is to utilize only the highest quality components. Problems that often plague dimmers such as flickering lights, buzzing in audio equipment and triac failure are minimized with toroidal devices. In place of triacs, NSI only uses professional grade dual SCR's.

You can be confident your NSI dimmer packs feature the best performance and reliability standards available.

SPECIFICATIONS

	ND 4600	ND 5000
No. of Channels:	Four	Four
Power Output per Channel:	600 Watts	1200 Watts
Total Maximum Power Output:	2400 Watts	2400 Watts
Filtering:	(4) chokes 160USEC.	(4) chokes 400 USEC.
Serial Control System:	NSI"Microplex"	NSI"Microplex"
Input Voltage to Output Response Time:	50 MSEC.	50 MSEC.
Control Isolation:	1200 Volt HV	1200 Volt HV
+15 V DC Available to Controller:	400 MA	400 MA
Dimensions (HxWxD):	8"x9.5"x3.5"	8" x9.5"x3.5"
Weight:	7.51bs	10 lbs
Mounting Spec. (from hole centers):	8.25"	8.25"

ADDRESSING

Each NSI dimmer pack is fully user addressable to receive any of one hundred twenty-eight possible control signals. Control signals may be assigned in increments of four by addressing the dimmer packs to receive them. To accomplish this simply position the address select dipswitches as described in the following chart.

Note: New Style units have six position dipswitches where as dipswitches 1-6 are indicated below. Old style units are functionally the same but offered 4 position dipswitches. Additional dips were internal jumpers where as J1, J2 are indicated below.

Channels	1	2	3	4	5/J2	6/J2
1-4	Off	Off	Off	Off	Off	N/A
5-8	On	Off	Off	Off	Off	N/A
9-12	Off	On	Off	Off	Off	N/A
13-16	On	On	Off	Off	Off	N/A
17-20	Off	Off	On	Off	Off	N/A
21-24	On	Off	On	Off	Off	N/A
25-28	Off	On	On	Off	Off	N/A
29-32	On	On	On	Off	Off	N/A
33-36	Off	Off	Off	On	Off	N/A
37-40	On	Off	Off	On	Off	N/A
41-44	Off	On	Off	On	Off	N/A
45-48	On	On	Off	On	Off	N/A
49-52	Off	Off	On	On	Off	N/A
53-56	On	Off	On	On	Off	N/A
57-60	Off	On	On	On	Off	N/A
61-64	On	On	On	On	Off	N/A
65-68	Off	Off	Off	Off	On	N/A
69-72	On	Off	Off	Off	On	N/A
73-76	Off	On	Off	Off	On	N/A
77-80	On	On	Off	Off	On	N/A
81-84	Off	Off	On	Off	On	N/A
85-88	On	Off	On	Off	On	N/A
89-92	Off	On	On	Off	On	N/A
93-96	On	On	On	Off	On	N/A
97-100	Off	Off	Off	On	On	N/A
101-104	On	Off	Off	On	On	N/A
105-108	Off	On	Off	On	On	N/A
109-112	On	On	Off	On	On	N/A
113-116	Off	Off	On	On	On	N/A
117-120	On	Off	On	On	On	N/A
121-124	Off	On	On	On	On	N/A
125-128	On	On	On	On	On	N/A

IMPORTANT: All NSI dimmer packs are shipped from the factory addressed for channels 1 -4. Units must be readdressed (see chart above) before being capable of receiving any other channels.

AUTO TEST

This built-in test function allows you to connect and test lamps at full intensity without the need of a controller. When dipswitch #6 is off and your dimmer pack is receiving AC power and a controller is not connected lamps will light to full intensity. Internal jumper J2 is used in place of dipswitch # 6 on old style units.

LEVEL LED's

Individual yellow LED's (Light Emitting Diodes) for each channel indicate when the dimmer is receiving control signals. This feature is an excellent trouble-shooting tool in identifying possible problems with signal transmissions or defective lamps and fixtures.

AC POWER CABLE

This is the main power cord for your dimmer pack which ultimately carries all of the ac power consumed by lights connected to the dimmer. It must be connected to a power source capable of supplying the total power drawn by the lights (see specification section of this manual for details on maximum power capability).

WARNING: Do not remove grounding prong of AC plug. To do so may cause exposure to potentially lethal voltage levels and will void the warranty on this product.

POWER INDICATOR

This green LED (Light Emitting Diode) will light whenever the dimmer pack is receiving AC power and functioning properly.

CIRCUIT PROTECTION

Both the ND 4600 and ND 5000 are equipped with safety circuit interruption devices to protect the units from becoming overloaded. The ND 4600 utilizes fusing while the ND 5000 features a resettable external circuit breaker as well as internal fusing.

MOUNTING

NSI ND 4600 and ND 5000 dimmer packs are designed to be mounted vertically. Each dimmer pack is provided with two mounting flanges or ears designed for securing to the center of truss bars. Most truss bars are already properly drilled to accept mounting of dimmers, however in some cases you may need to drill holes in your truss bar to accommodate your dimmer pack.

AC OUTPUT RECEPTACLES

Dual standard AC outlet receptacles are provided for each channel of both the ND 4600 and ND 5000. These receptacles provide power to the lamps in your lighting system. The amount of power supplied to these outlets control the intensity of the lights they drive. Multiplexed signals received from your NSI controller are translated into power levels to achieve the desired light intensity. Each dual receptacle corresponds to a single channel with the maximum power capabilities described in the specifications section of this manual. Under no circumstances should maximum recommended power capabilities be exceeded. To do so may be hazardous and will void your warranty. Most incandescent lamps and fixtures may be connected to these outlets. Do not connect any other electrical appliances or equipment to the dimmer packs.

MICROPLEX INPUTS

Both the male and female Microplex connectors may be used for input signals. Microplex technology allows your system to be connected using standard microphone cables or even audio snakes. Microplex may be received from your NSI controller or another dimmer pack. The Microplex system also provides D.C. phantom power to your control unit eliminating the need for AC power cords on any NSI controller. Up to one hundred twenty-eight individual control channels plus phantom power to your controller may be transmitted through a single microphone cable.

MICROPLEX EXPANSION

The male and female Microplex connectors are wired in parallel allowing either one to be used for input or output of control signals. When used as an output, the Microplex connectors will provide control signals to another dimmer pack. This is called daisy chaining and makes expansion of your system easily.

OPERATIONAL HINTS

- 1) Always place your dimmer packs as close as possible to the lights they are powering. This will reduce the number of extension cords required to hook up your system.
- 2) Use a power outlet located as close as possible to an electrical service panel (fuse box). It is best if the power outlet is on a separate circuit breaker or fuse from your audio system.
- 3) Ensure that the rating of the breaker or fuse for the chosen outlet is adequate. The required rating (in amps) of the breaker or fuse may be calculated with the following formula:

$$I = P/E$$

Where I = the current (in amps)

P = the power (in watts)

And E = the voltage (in volts)

For example: if you are using six, 300 watt lamps (1800 watts total), you should have at least a 15 amp electrical service.

- 4) Always use quality 14 gauge (or heavier) grounded extension cords.
- 5) Do not place AG power cables or extension cords for lighting near sensitive audio cables (guitar cords, mic cables, audio snakes, etc.).

NSI CORPORATION LIMITED WARRANTY

NSI Corporation warrants new electronics products to be free from defective materials and workmanship for a period of two (2) years from the date of purchase to the original owner when purchased from an authorized dealer.

The purchaser is responsible for completing and mailing to NSI, within 15 days of purchase, the warranty registration card enclosed with each product. NSI products that have been subject to accident, alteration, abuse, or defacement of the serial number are not covered by this warranty. The normal wear and tear of items such as knobs, jacks, and switches are not covered under this warranty.

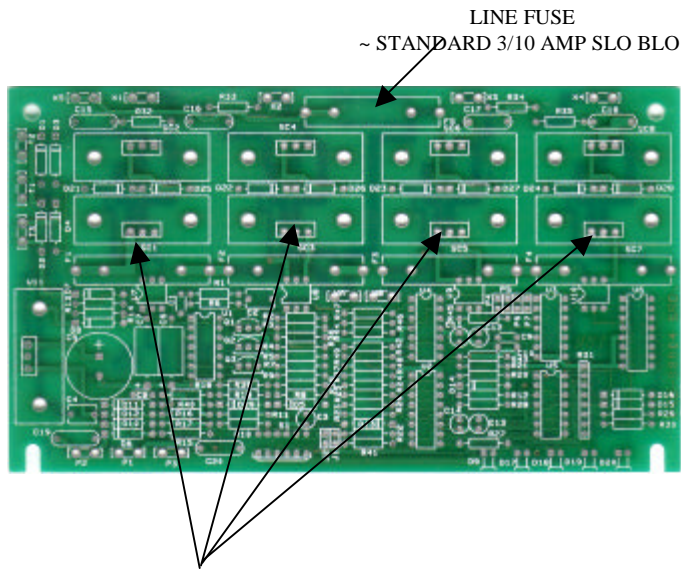
If your NSI product requires service during the warranty period, NSI will repair or replace, at its option, defective materials provided you have identified yourself as the original owner of the product to NSI. Shipment to the NSI factory for repair shall be the responsibility of the owner. All products returned to NSI must have factory authorization for return prior to shipping.

NSI Corporation is not liable for any incidental or consequential damages resulting from defect or failure other than repairs of the NSI product subject to the terms of this warranty. This warranty gives you specific legal rights, and you may have other rights which vary from state to state. There are no other warranties, expressed or implied, except as may be otherwise required by law.

TROUBLESHOOTING GUIDE

<u>SYMPTOM</u>	<u>CHECK LIST</u>
NO OUTPUT, LED INDICATORS SHOW STATUS OKAY	1. CHECK CHANNEL FUSES. (REFER TO DIAGRAM BELOW)
NO POWER	1. CHECK LINE FUSE (REFER TO DIAGRAM BELOW) 2. IF FUSE BLOWS AFTER REPLACEMENT CHECK TRANSFORMER.
LIGHTS ALWAYS OFF	1. CHECK CHANNEL FUSES 2. CHECK FIXTURE LAMPS 3. CHECK BLACKOUT FEATURE ON CONSOLE 4. CHECK DIP SWITCH ASSIGNMENT 5. CHECK MAXIMUM DIMMER ASSIGNMENT ON CONTROL CONSOLE 6. CHECK SOFT PATCH ON CONTROL CONSOLE
LIGHTS ALWAYS ON	1. CHECK DIP SWITCH ASSIGNMENT 2. CHECK SIGNAL CABLE 3. CHECK OUTPUT MODE OF CONTROL CONSOLE.
LIGHTS AND LED INDICATORS ON DIMMER PACK FLICKER OR GLOW DIMLY.	1. TRANSMISSION LENGTH MAY BE A PROBLEM. GET CONSOLE CLOSER WITH A SHORTER CABLE TO VERIFY. REMEDY MAY BE THE USE OF 18 GAUGE CABLE OR AN EXTERNAL POWER SUPPLY AT THE CONSOLE. (CALL DEALER OR NSI TECHNICAL SERVICES FOR DETAILS). 2. CHECK PRE-HEAT SETTING OF CONSOLE.

CAUTION: PLEASE DISCONNECT POWER BEFORE REMOVING COVER FOR SERVICE AS HIGH VOLTAGE IS OTHERWISE PRESENT



CHANNEL FUSE LOCATION

REPLACE WITH VALUES AS LISTED BELOW:

- ND4600 8 AMP FAST BLO, 250 VAC
- ND5000 15 AMP FAST BLO, 250 VAC

IF PROBLEMS PERSIST CONTACT YOUR NEAREST NSI AUTHORIZED DEALER OR NSI TECHNICAL SERVICES AT 800-864-2502 BETWEEN THE HOURS OF 8:00 AM TO 5:00 PM PST MONDAY THRU FRIDAY.