LIMITED 2 YEAR WARRANTY AND EXCLUSIONS

Leviton warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Leviton is free of defects in materials and workmanship under normal and proper use for two years from the purchase date. Leviton's only obligation is to correct such defects by repair or replacement, at its option, if within such two year period the product is returned prepaid, with proof of purchase date, and a description of the problem to **Leviton Manufacturing Co., Inc., Att: Quality Assurance Department, 59-25 Little Neck Parkway, Little Neck, New York 11362-2591.** This warranty excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other or implied warranties of any kind, including merchantability and fitness for a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warranty, including merchantability and fitness for a particular purpose, is limited to two years. **Leviton is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, lost sales or profits or delay or failure to perform this warranty obligation**. The remedies provided herein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

For Technical Assistance Call:
1-800-824-3005
www.leviton.com

LEVITON®

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DDS 6000 / 6000+

SATELLITE DIMMER PACKS

USER GUIDE

Software Revision 1.0 and above
Document Revised: 8-30-02

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ADDRESSING

When using any of the multiplex control systems, the DIP switches on the front panel of the DDS 6000 must be set to assign the desired dimmer channels. The switches control the dimmer channels in groups of four. See the following chart for settings.

DIP SWITCH CHANNEL ASSIGNMENTS (1=up, 0=down)

CONTROL	1234567	CONTROL	1234567	CONTROL	1234567
1-4	0000000	5-8	1000000	9-12	0100000
13-16	1100000	17-20	0010000	21-24	1010000
25-28	0110000	29-32	1110000	33-36	0001000
37-40	1001000	41-44	0101000	45-48	1101000
49-52	0011000	53-56	1011000	57-60	0111000
61-64	1111000	65-68	0000100	69-72	1000100
73-76	0100100	77-80	1100100	81-84	0010100
85-88	1010100	89-92	0110100	93-96	1110100
97-100	0001100	101-104	1001100	105-108	0101100
109-112	1101100	113-116	0011100	117-120	1011100
121-124	0111100	125-128	1111100	129-132	0000010
133-136	1000010	137-140	0100010	141-144	1100010
145-148	0010010	149-152	1010010	153-156	0110010
157-160	1110010	161-164	0001010	165-168	1001010
169-172	0101010	173-176	1101010	177-180	0011010
181-184	1011010	185-188	0111010	189-192	1111010
193-196	0000110	197-200	1000110	201-204	0100110
205-208	1100110	209-212	0010110	213-216	1010110
217-220	0110110	221-224	1110110	225-228	0001110
229-232	1001110	233-236	0101110	237-240	1101110
241-244	0011110	245-248	1011110	249-252	0111110
253-256	1111110	257-260	0000001	261-264	1000001
265-268	0100001	269-272	1100001	273-276	0010001
277-280	1010001	281-284	0110001	285-288	1110001
289-292	0001001	293-296	1001001	297-300	0101001
301-304	1101001	305-308	0011001	309-312	1011001
313-316	0111001	317-320	1111001	321-324	0000101
325-328	1000101	329-332	0100101	333-336	1100101
337-340	0010101	341-344	1010101	345-348	0110101
349-352	1110101	353-356	0001101	357-360	1001101
361-364	0101101	365-368	1101101	369-372	0011101
373-376	1011101	377-380	0111101	381-384	1111101
385-388	0000011	389-392	1000011	393-396	0100011
397-400	1100011	401-404	0010011	405-408	1010011
409-412	0110011	413-416	1110011	417-420	0001011
421-424	1001011	425-428	0101011	429-432	1101011
433-436	0011011	437-440	1011011	441-444	0111011
445-448	1111011	449-452	0000111	453-456	1000111
457-460	0100111	461-464	1100111	465-468	0010111
469-472	1010111	473-476	0110111	477-480	1110111
481-484	0001111	485-488	1001111	489-492	0101111
493-496	1101111	497-500	0011111	501-504	1011111
505-508	0111111	509-512	1111111		

When the automatic sequencing feature is operating, the DIP switch selects the operating sequence pattern and speed. See the section on INTERNAL CONFIGURATION DIP SWITCH SELECTION for details.

INTERNAL CONFIGURATION DIP SWITCH SELECTION

Caution: The following procedures should be performed by qualified personnel only.

Remove all power and remove the cover of the dimmer pack. Locate and change configuration DIP switch settings on the firing card as indicated in the following section.

Softstart

The Softstart mode of operation forces at least a 1/10th second delay between the output being full OFF to the output being full ON to allow a more gradual warming of the lamp filaments. Thermal shock and inrush currents are reduced thereby increasing lamp life. Softstart should not be used when quick dimmer response is desired, such as chasing.

To activate Softstart, turn OFF switch number one (1) on the configuration DIP switch on the firing card. Moving this switch to ON will deactivate Softstart.

NOTE: The channels of the DDS 6000 configured for NON DIM operation will not be affected by softstart.

NON DIM Channels (Relay Mode)

Any of the channels of the DDS 6000 may be configured as NON DIM channels. This will cause the output of the channel to go to full ON whenever the input signal is over 15%. When the input signal drops to less than 10%, the channel output goes to full OFF. This is the equivalent of a zero-crossing solid state relay.

To configure a channel for NON DIM operation, simply move the respective switches on the configuration DIP switch to the OFF position on the firing cards as indicated below. Moving the switch to ON will restore dimming operation.

CHANNEL	DIP SWITCH	CHANNEL	DIP SWITCH
1	3 OFF	2	4 OFF
3	5 OFF	4	6 OFF

AUTO SEQUENCING MODE

The DDS 6000 dimmers can be configured to perform stand alone Automatic Sequencing in place of Auto Lamp Test. This is useful for lighting displays and show windows. The four channels will automatically fade from one to another in a preprogrammed pattern and time selected by the front panel DIP switch whenever DIP switch #8 is up and no multiplex signal is detected. The analog control input will continue to operate while the dimmer is sequencing.

To enable Automatic Sequencing Mode move the switch on the internal configuration DIP switch #2 to OFF.

Front Panel DIP switch sequence settings (not internal DIP switch):

STEP TIME	SWITCH 1, 2, 3	PATTERN	SWITCH 4, 5, 6
1 SECOND	OFF, OFF, OFF	2 CHAN BUILD	OFF, OFF, OFF
3 SECOND	ON, OFF, OFF	3 CHAN SEQUENCE	ON, OFF, OFF
5 SECOND	OFF, ON, OFF	3 CHAN BUILD	OFF, ON, OFF
10 SECOND	ON, ON, OFF	2 & 4 CHAN ALT	ON, ON, OFF
15 SECOND	OFF, OFF, ON	4 CHAN SEQUENCE	OFF, OFF, ON
30 SECOND	ON, OFF, ON	4 CHAN BUILD	ON, OFF, ON
45 SECOND	OFF, ON, ON	4 CHAN BUILD +	OFF, ON, ON
60 SECOND	ON, ON, ON	4 CHAN RANDOM	ON, ON, ON

DIP switch #7 ON causes all above sequences to ping-pong.

INSTALLATION AND OPERATION TIPS

Care should always be taken to:

1) Keep all AC wiring away from control wiring.

2) We also recommend power up and performance checks be done one unit at a time. This can be a real time saver should problems arise thus eliminating unnecessary isolation techniques to resolve problems.

INTRODUCTION

Thank you for your decision to purchase a Leviton-NSI product.

The Leviton-NSI DDS 6000 represents a key part of a state of the art, integrated lighting control system. These dimmers may operate in a “stand alone” mode for automated lighting of displays or may be combined with a Leviton-NSI memory lighting console for total lighting control.

The DDS 6000 provides four channels of 1200 watts each. This dimmer is designed for portable or permanent use for entertainment or display lighting. Several DDS dimmer packs may be combined for more channels of lighting.

SPECIFICATIONS

Number of Channels:	Four.
Output Capacity:	1200 Watts per channel.
Input Power:	DDS 6000-15: 120 VAC, 1800 Watts Max. (One power source) DDS 6000-15: 240 VAC, 2400 Watts Max. (One power source) DDS 6000-20: 120 VAC, 2400 Watts Max. (One power source) DDS 6000 Plus -15: 120 VAC, 3600 Watts Max. (Two power sources) DDS 6000 Plus -15: 240 VAC, 4800 Watts Max. (Two power sources) DDS 6000 Plus -20: 120 VAC, 4800 Watts Max. (Two power sources)
Dimmer Control System:	Microprocessor digital phase control dimming or zero-crossing relay mode.
Load Filtering:	400 Micro-Second Rise Time.
Control Input Types:	0-10 VDC each channel on a 5-pin DIN connector. Microplex multiplex signal (128 channel) on a 3-pin XLR type connector. DMX512 digital signal (512 channel) on a 5-pin XLR optional.
Control Wiring:	Class 2 low voltage.
Output Connections:	2 NEMA 5-15 outlet per channel. Screw terminals optional.
Cooling System:	Passive internal aluminum heatsinks.
Load Type:	AC lighting (tungsten) loads only.
Enclosure Type:	For indoor use only (Utilizer Dans Un Endroit A L'Abri).
Ambient Temperature:	100 degrees maximum.

MOUNTING

The Leviton-NSI DDS 6000 dimmer pack is designed to be mounted vertically. Each dimmer pack is provided with two mounting flanges or ears designed for securing to the center of truss or attaching to other vertical surfaces.

Since the DDS 6000 depends upon convection cooling, room air flow must be insured. Keep the air vents located on front and each side of the dimmer pack clear of dust or any obstructions. In order for unit to cool properly the control receptacles must be oriented towards the floor.

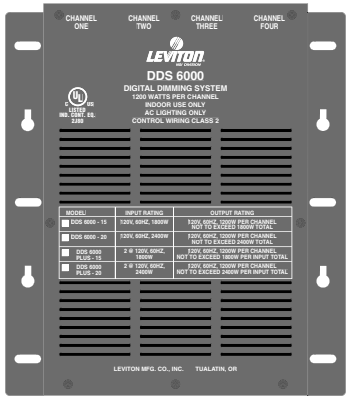
If several units are to be operated in a small enclosed room, adequate ventilation must be provided to prevent the room temperature from exceeding 100 degrees Fahrenheit.

AC POWER CABLE

This is the main power cord(s) for your dimmer pack which ultimately carries all of the AC power consumed by lights connected to the dimmer pack. The DDS 6000 with the NEMA 5-15 plug is limited to 1800 Watts max., while the unit with the NEMA 5-20 plug will support 2400 Watts. The DDS 6000 Plus includes two cords, one per each two channels, which doubles the maximum capacity. The power cord(s) must be connected to a power source capable of supplying the total power drawn by the lights. (See SPECIFICATIONS for details on maximum power capability).

AC OUTPUT RECEPTACLES

The DDS 6000 has two AC receptacles for each channel. These receptacles provide power to the lamps in your lighting system. The amount of power supplied to these outlets controls the intensity of the lamps connected. Most 120VAC lamps and fixtures, and some transformer type low-voltage fixtures may be connected to these outlets.



The total lamp wattage connected to each channel must not exceed the rating of each channel (see SPECIFICATIONS). For inductive loads, the total lamp volt-amperes plus the volt-amperes of any ballast or transformer must not exceed the rating of each channel.

NOTE: Some inductive type loads, such as transformers, ballasts, and motors with poor factor power may cause the dimmer to output DC type current. This may cause the load to draw excessive current and overheat, causing damage to the transformer, ballast or motor. For this reason, it is necessary to insure any inductive loads are fused individually for their respective normal operating current.

PERMANENT CONNECTION

The DDS 6000 is available as an optional DDS 6000 Plus - 20 terminal version. This version must be installed by qualified personnel.

AC Input

Conduit containing line conductors enters pack through one of the knockouts in the top end. The two 20A, 120V, 60Hz, 2 wire line circuits, A and B, are terminated to their respective terminals labeled Line and Line N. The terminals accept wire sizes 22-8 AWG CU and have a torque rating of 8 in-lbs. Line equipment grounding conductor, if a wire, terminates to the lug labeled GND. The ground lug accepts wire size 14-6 AWG CU and has a torque rating of 35 in-lbs. (14-10 AWG), 40 in-lbs. (8 AWG), and 45 in-lbs. (6 AWG).

AC Output

Conduit containing load conductors enters pack through one of the knockouts in the top end. The four 1200 W max., 120V, wire load circuits, 1 through 4, are terminated to their respective terminals labeled Load and Load N. Circuits 1 and 2 are supplied from input A, and circuits 3 and 4 from input B. The control power supply is also supplied by input A. Terminal rating are the same as indicated above for line terminals.

LED INDICATORS

The front panel indicator LEDs indicate the status of the relay.

- RED — Indicates the firing card is receiving DC power.
- GREEN — Steady indicates a multiplex control signal is being received.
- YELLOW — Indicates a respective dimmer channel is active and the LED indicates relative intensity.

CHANNEL FUSES

Each channel is protected by a fuse to help prevent overload and damage to the power control devices used in the dimmer. Be sure to replace the fuse with the same type of rating. Replacement with the wrong fuse is dangerous and will void your warranty.

NOTE: Lamps may sometimes cause a temporary "short-circuit" when the filament burns out and cause the fuse to blow. This is normal and protects the internal dimmer circuitry from damage.

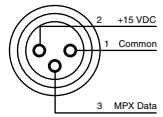
MICROPLEX MULTIPLEX CONTROL WIRING

Microplex is the control protocol used on most Leviton-NSI lighting consoles. This system uses a single three conductor cable to transmit up to 128 channels of dimmer control. For short distances (50 feet or less) a standard microphone cable may be used to carry both the control signal and the DC power source for Leviton-NSI control consoles. Longer distances may be accommodated with 18 gauge or better cable to reduce voltage losses of the power supply.

Connect the Microplex control cable to either of the three pin XLR jacks. Since both jacks are wired in parallel, another control cable may be connected between the remaining jack and another dimmer pack. Many dimmer packs may be "daisy chained" together in this manner.

Be sure to set the Channel Address DIP switch as required (see ADDRESSING).

Female Microplex XRL Pin Configuration

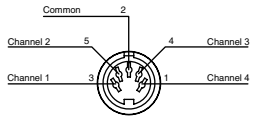


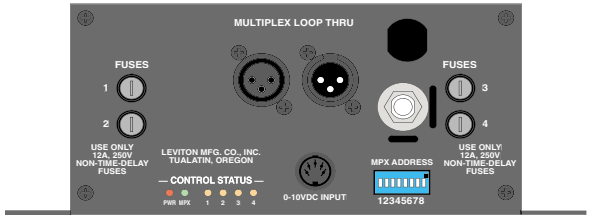
ANALOG 0-10 VDC CONTROL WIRING

Each of the four channels of the DDS 6000 may be operated by an analog 0-10 VDC control voltage. This type of control will provide 0% intensity at 0 volts and 100% intensity at 10 volts. Any or all of the DDS 6000 dimmer channels may be operated in this manner simultaneously with any multiplex control input. Each dimmer will respond to the greater of any control inputs.

The analog control input uses a standard 5 pin DIN plug which is available from most electronics supply houses. Connect each if the positive channel control wires to the desired dimmer channel input pins of the plug. Connect the common (ground) control wire to the pin indicated on the diagram. Consult the documentation of the analog control console or device you are using for the proper connections. The control input impedance is 4.7K ohms.

0-10V Input



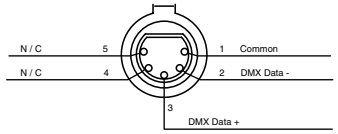


DMX512 MULTIPLEX CONTROL WIRING

DMX512 is the United States Institute of Theater Technology (USITT) standard for the digital control of dimmers. Leviton-NSI DDS dimmer products can be converted from Microplex to DMX512 digital multiplex with a simple kit available from your dealer.

DMX512 is the preferred type of control wiring when many dimmer channels are used, because of the high update rate and the resistance to interference. It is recommended in locations subject to electrical noise. DMX512 only requires 3 wires to transmit lighting levels for as many as 512 relay or dimmer channels. Most of the Leviton-NSI lighting control consoles can optionally use this interface.

Female DMX512 XRL Pin Configuration



Connect the DMX512 cable from the control console to the male input connector. Another cable may be connected from the female connector to the male connector of another pack. Many dimmer packs may be "daisy chained" or connected together in this manner.

Be sure to set the Channel Address DIP switch as required (see ADDRESSING).

AUTO LAMP TEST

Whenever DIP switch #8 is in the OFF (down) position and there is no multiplex signal detected, all channel outputs will come to full intensity. The automatic sequencing feature must be disabled for this Auto Lamp test to operate.