



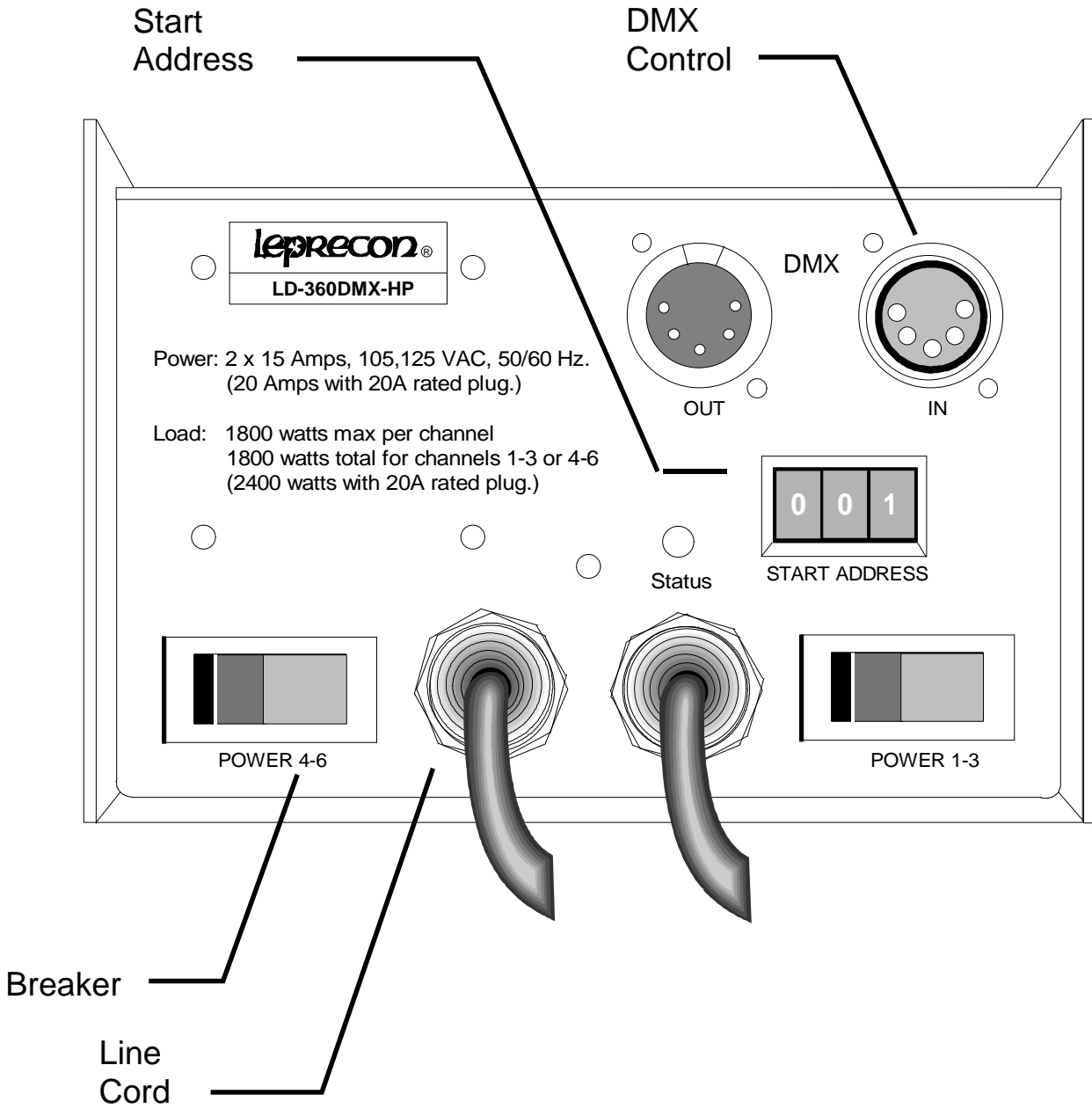
User's Manual:

LD360 DMX  
LD360 DMX HP

21-1043A

Rev. 1.0  
Software Version 1.0  
1/17/95

# Illustration



## Specifications

### **Power Capacity**

The LD360 DMX is unique in the market of small portable dimmers. A single breaker is used on the pack instead of individual fuses per each channel. As a result, the limits of the dimmer are *pack* limits, not channel limits. The following guidelines should be followed:

LD360 DMX:

Pack Limit: 15 Amps  
20 Amps with approved plug.

LD360 DMX-HP

Pack Limit: 15 Amps per line cord.

As indicated, the total pack power of the LD360 DMX can be increased to 20 amps by changing the factory supplied 15 amp power plug to a type approved for the higher power. Some of the choices are:

<u>Plug</u>	<u>Mating Socket</u>	<u>Type</u>
Nema 5-20P Hubbel 5364VY Hubbel 5366C	Nema 5-20S Hubbel 5369VY Hubbel 5369C	"Tee blade"
Nema L5-20P Hubbel 2311VY Hubbel 2311	Nema L5-20S Hubbel 2313VY Hubbel 2311	Twist Lock

### **Control input**

The LD360 DMX accepts DMX 512 1990 as specified by USITT. DMX signal requires the use of cable rated for data communication at 250K baud; for this reason the use of microphone cable is **NOT** recommended. DMX rated cables are available pre-manufactured from your Leprecon dealer. For more information on the DMX standard and acceptable cable, see the Appendix of this manual.

For convenience, two connectors are provided on the LD360DMX. This allows easy connection to additional dimmer packs. The DMX standard allows up to 32 dimmers to be connected to a single DMX controller.

For proper operation, it is recommended that the last dimmer in the system includes termination for the DMX signal line. This termination is nothing more than a 120 ohm resistor installed across pins 2 and 3 of the 5 pin XLR. For your convenience, a male 5 pin XLR with such a resistor in place is available as an accessory from your Leprecon dealer.

## Installation and Use

### ***Mounting***

The LD360 dimmers are passively cooled, using no internal fans or other noisy cooling devices. The heat generated by the dimmer is dissipated by the metal chassis. For this reason, it is necessary to mount the dimmer so that air is free to circulate around the dimmer. The dimmer should be mounted with at least 12 inches of clearance between the dimmer and any ceiling or obstruction above the dimmer that would block air circulation.

### ***Power Connection***

Leprecon LD360 series dimmers are supplied with line cords with standard Edison plugs attached. The LD360 dimmer can present up to a 20 Amp load per line cord; use of extension cords for power is not recommended. The LD360 should be connected to a service capable of supplying 20 amps and protected by a properly sized circuit breaker.

If you have any questions about the suitability of the power circuit that you intend to use with the LD360 dimmer, consult with a qualified electrician.

### ***Load Connection***

The LD360 DMX dimmer is provided with standard duplex outlets. The capacity of these outlets is 15 amps each. Lamp loads are plugged directly into the outlets on the body of the dimmer.

### ***Address Selection***

The LD360 DMX dimmer can be set to respond to any control channel from 1 to 512. Three thumbwheel switches are provided for easy address setting. Just set the switches to read the correct start address. The address shown on the switches is the address for the first channel of the dimmer. Examples follow:

<u>Start Address:</u>	<u>Pack Range</u>
1	channels 1-6
2	channels 2-7
5	channels 5-10

### ***Status LED***

The LED labeled 'status' on the end panel of the LD360 DMX can be useful for locating problems in the DMX system. The following table summarizes the function of the 'status' led.

<b>LED Indication</b>	<b>DMX Status</b>
Not Lighted	No signal present
Fast Flash - 4Hz	Signal present, pack address too high
Slow Flash- 2Hz	OK
Steadily lighted	Pack inoperative

## Service

### **Service policy**

The LD360 DMX is designed for a long, trouble free life. If you suspect that you have a dimmer problem, the first step is to check all other system components and connections. The easiest test is to substitute a known good dimmer in place of the suspected unit. Make sure that the address switches are set to the same address.

Specific problems and solutions are listed below:

<b>Problem</b>	<b>Indication</b>	<b>Solution</b>
no power	breaker not lighted	check and repair power feed
shorted load	breaker trips	repair instrument
no signal	no lights	swap board to diagnose, check control cable
SCR failure	channel stuck at full	refer to service center
address out of range	channels drift to 100%	re-set address switches
Overload	breaker trips	check wattage of loads

If a problem is verified in the dimmer pack, contact your Leprecon dealer for service. Because of the high voltages present inside of the dimmer, it is important that all service be done only by qualified personnel. Substandard repairs can create a dangerous, potentially life-threatening situation.

### **Warranty Information**

CAE will repair any defects in materials or workmanship on the LD360 DMX for a period of one year from the date of sale. The equipment must be returned postpaid to a Leprecon Dealer or authorized service center. CAE is not responsible for incidental damages, or for damage as a result of misuse or abuse. It is the responsibility of the owner to determine the suitability of the equipment for any specific application.

Any return to the factory must first be authorized by our service department. Do not return any equipment without calling for an authorization number. The CAE service department may be reached at 810 231 9373 during business hours, or a message may be left after hours. Our fax number is 810 231 1631.

***Spare parts list***

<b>Description</b>	<b>Order Number</b>
Line Cord	19-9007
Strain Relief	18-2013
Circuit Breaker	60-06-0005
IC, Opto Triac MOC3020	03-3008
Address Switch Assembly	40-06-0003
Connector, 5 Pin XLR Female	07-1019
Connector, 5 pin XLR Male	07-1123
Duplex Outlet	07-3018
SCR, 20 Amp	03-3002
Metal Oxide Varistor	15-9005
Transformer, ST4-36	10-0024

## **DMX 512 Standards**

The following information is a summary of the USITT 1990 standard for dimmers and controllers. A complete copy may be obtained from:

USITT  
10 W. 19th ST.  
Suite 5A  
New York, NY 10011-4206

The DMX 512 standard is designed as a simple, reliable system for connecting digital dimmers and controllers. The protocol allows up to 512 dimmers to be connected to a single control console. With 512 dimmers in a system, DMX 512 allows each dimmer level to be updated 44 times each second.

### ***Connectors***

The DMX standard specifies the use of 5 pin XLR connectors. DMX 512 currently uses 3 pins of the 5 pin connector. Pins 4 and 5 are reserved for future use; some manufacturers are using these pins for communications back from the dimmer to the control console, or as a redundant data line. At this time, DMX cables are being used that only contain 3 wires. If you wish to include the capability to use the extra pins, it is suggested that you buy or make cables with all 5 pins connected.

The connectors to be used for DMX 512 are as follows:

Console end (transmitter) Female 5 pin XLR  
Dimmer end (receiver) Male 5 pin XLR

Some manufacturers of XLR connectors are Switchcraft, ITT Cannon, and Neutrik.

### ***Cable type***

Shielded twisted pair approved for EIA-422/EIA-485 use. Either one pair with shield or two pair with shield may be used. Examples of such cable are:

Single pair: Belden 9841, Alpha 5271  
Two pairs: Belden 9842, Alpha 5272

The Pin Designations for DMX 512 are as follows:

Pin 1 Signal common (cable shield)  
Pin 2 Data 1-  
Pin 3 Data 1+  
Pin 4 Spare, optional Data 2-  
Pin 5 Spare, optional Data 2+

