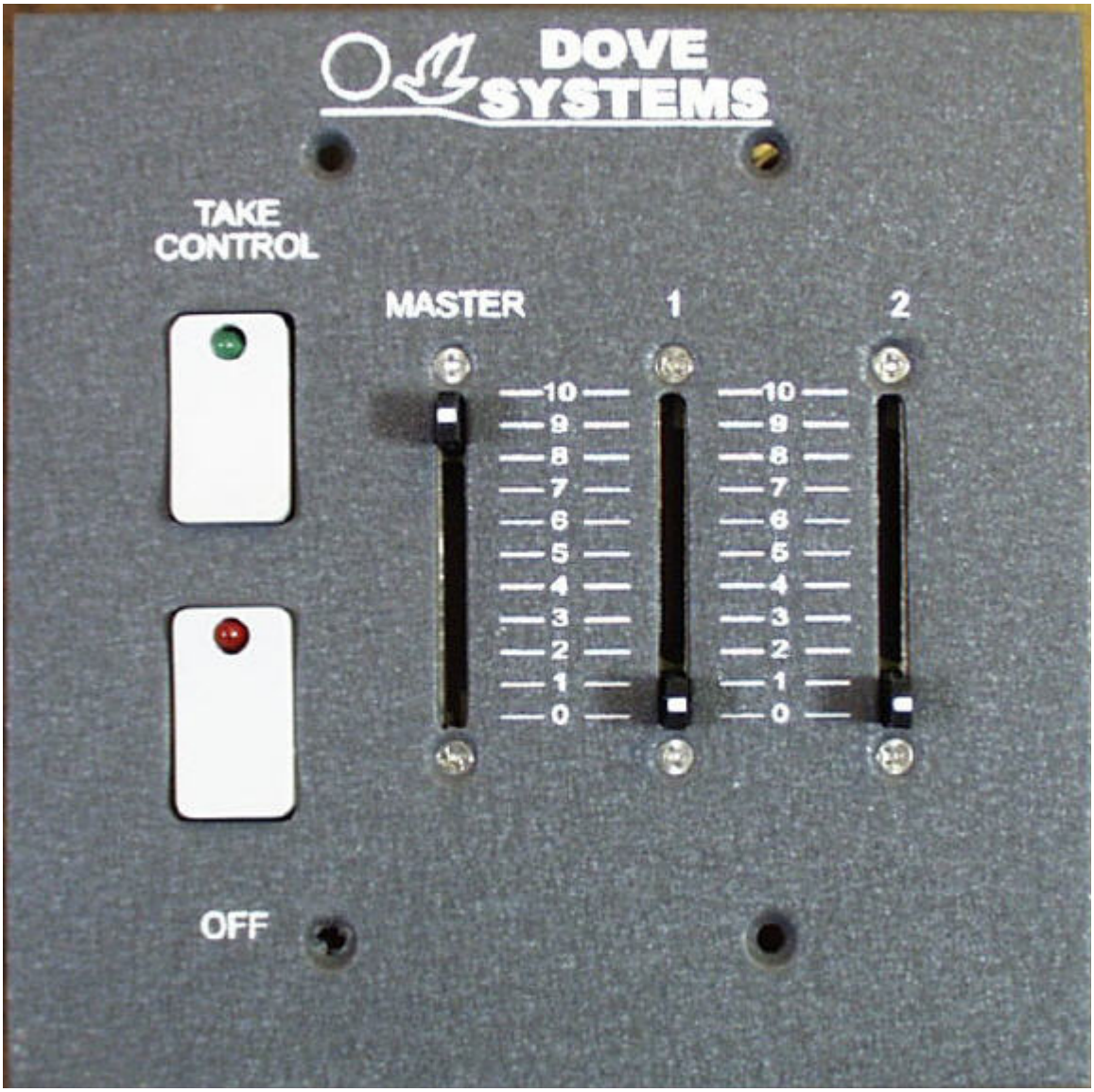
HLC SERIES
HOUSE LIGHT CONTROLLERS

OWNER'S MANUAL

March 7, 2003



Dove Lighting Systems, Inc.
3563 Sueldo Street Unit E
San Luis Obispo, Ca 93401
+1 805 541 8292 fax +1 805 541 8293
dove@dovesystems.com / www.dovesystems.com

PROPRIETARY NOTICE

Dove Systems reserves the right to make improvements and/or changes to the product described in this manual at any time without notice. Although every effort has been made to provide accurate information, Dove Systems is not responsible for inaccuracies due to oversight, product improvements and/or changes not depicted in this manual, or misuse of the product due to misinterpretation of the material presented in this manual.

RECEIVING YOUR EQUIPMENT

As soon as you have received your equipment, open the boxes and examine the contents. If any damage is noted, contact the carrier immediately to file a claim for damages. You can be sure that when the equipment left the factory it was in good condition and properly packed.

If you find the equipment to be in accordance with your order and the packing slip, and also in good physical condition you may read on to the next section. If for some reason the equipment in the carton does not agree with your order or the packing slip, contact the factory immediately and we will be happy to help you.

INTRODUCTION

House light controllers are an easy to use adjunct to stage light controllers for systems in which stage lights are not in constant use but house lights are. With take control and off buttons, these controllers may be linked in series for any number of stations. The output is 0 (off) to +10VDC (on full). They require between +12 and +15VDC from the dimmer pack as a power supply; an optional power supply is available for use with dimmers that do not provide it.

SETUP AND CONNECTION

A Physical Installation

The panels fit into standard back boxes (not included) for flush mount or surface mount installation. Acceptable back boxes include, but are not limited to, the following:

HLC-1 & HLC-2:

Carlon	B225R
Hubbell Raco	680/681/683/685/691/7834

HLC-3 & HLC-4:

Carlon	B355R/CB355R
Hubbell	Raco 686/692/7846

HLC-6:

Hubbell Raco	687/693/7645

B Electrical Installation

Multiconductor cable, 22 to 18 gauge, is recommended. One conductor for each output channel and three additional conductors are required. For example, the HLC-6 requires 6+3= 9 conductors. The HLC-1 requires 1+3=4 conductors.

Wiring connections are made to the terminal strip on the rear of the circuit card on the rear of the panel. Control panels may be bused (daisy chained) together by wiring two conductors into each terminal. Jump the wires from panel to panel to the dimmer pack, keeping the same color wire in the same terminal every time.

The HLC panel terminals are labeled as follows:

terminal 1	Common
terminal 2	+12V
terminal 3	Clear
terminal 4	Out 1
terminal 5	Out 2
terminal 6	Out 3
terminal 7	Out 4
terminal 8	Out 5
terminal 9	Out 6
terminal 10	Clr
terminal 11	Take
terminal 12	+12V

Terminals 10, 11, and 12 are not used in standard installations but may be used for remote preset applications. The remote preset requires additional equipment and wiring. An example diagram is provided at the rear of the manual, but it is recommended to consult the factory before attempting this.

The dimmer pack may use any of several analog control input connectors. Often the connection chart is screened on the sheet metal. If not, check with the manufacturer to be sure. Dove dimmer packs may have any of three connectors: terminal strip (labeled as to function); DB15M; and DB25M. The analog 0 to +10VDC standard states that the connector on the dimmer pack is male. The connector from the controller is female.

The DB15 is wired as follows:

pin 1	channel 1
pin 2	channel 2
.	.
pin 13 +12VDC	
.	.
pin 15 common	

The DB25 is wired as follows:

pin 1 channel 1
pin 2 channel 2
. .
. .
pin 24 channel 24
pin 25 common

The control signal output from the panels is 0 to +10VDC referenced to signal common. The common conductor must be wired from panel to panel to the dimmer pack. Failure to do so will result in no panels working, some panels not working, or some channels dimming as others are raised.

The panels require a power supply of between +12 and +15VDC. This is usually supplied by the dimmer pack. Several HLC-6 panels may draw more current than the dimmer pack can supply, resulting in flickering lights. If the dimmer pack lacks a power supply or cannot supply enough power, a simple "wall wart" type supply of +12V 500mA or more may be wired at any station or the dimmer end and plugged into a wall receptacle.

The clear line is wired from panel to panel but is not used at the dimmer pack.

Each house light output channel may control more than one dimmer input. For instance, a HLC-1 may control dimmers 1 through 3. Simply loop these control inputs together at the dimmer pack.

Panels of differing sizes, for instance a HLC-6 and HLC-1, may be wired together such that the HLC-6 provides discrete control for each channel while the HLC-1 controls all channels. In this case, do not loop the inputs together at the dimmer. Use diodes from the output from the HLC-1 to as many channels as desired. Diodes must be wired into the HLC-1 to prevent signals from the HLC-6 from backfeeding to other channels. Refer to the diagram at the rear of the manual.

When all connections have been made, the system may be energized and tested. The green and red LEDs on all panels will glow slightly. If both LEDs are off at any panel, check the power supply connection. If a green LED is on but the red one is off, press the off button.

Press the take control button at the first panel. The green LED will glow brightly, and the red one will go out. Run up the master slider. Then run up some channel sliders and watch the house lights go up. Press the off button and watch them go out. Repeat this process at the other stations.

OPERATION

The green and red LEDs glow dimly when another panel has control. When the take control button is pressed, the green LED glows brightly and the red LED is off. When the off button is pressed, both LEDs glow dimly.

The take control button seizes control from all other panels in the chain. The lights come up to the levels set on the sliders at that panel only. The master slider is a proportional control: the lights come up in proportion to the master level. For instance, if the master is at 50% and channel 1 at 80%, then channel 1 comes up to 50%*80%=40%. The off button turns off all panels in the system as well as itself.

The houselight panels are typically used like this:

A stagehand walks in the auditorium door and presses the take control button at that station. The house lights come up. Climbing into the tech booth, the stagehand then takes control at that station and dims the lights. Leaving by the backstage exit, the stagehand presses the off button there, turning off the lights.

DMX stage lighting controllers may also be used to control house lights on the DMX input to the house light dimmers.

IN CASE OF TROUBLE

Consult the wiring diagrams at the rear of the manual, which answer many common questions.

The chief cause of trouble is a wiring error, particularly on the common, +12V, or clear lines. Keep the same color wire in the same terminal on all panels. Do not swap positions or short the wires. The common wire travels from panel to panel and ends at the dimmer pack; if missing, no panels will work, some panels won't work, or some channels will dim as others are raised. The power supply line must be connected to all panels and either the dimmer pack or wall transformer; without it, some or all panels will be stuck off (neither LED will glow). The clear line must be connected to all panels; disconnected, some or all panels will not take control from the others.

If all lights flicker, the power supply from the dimmer may be inadequate. Swap in a "wall wart" type power supply transformer of +12VDC 500mA or more.

A broken slider will cause one channel to flicker or be stuck off at that panel. It should be replaced but may be treated temporarily with WD-40.

If unexpected lights come up, check that the control wires go to the correct dimmer inputs, that some dimmer inputs haven't been incorrectly looped together.

If one to four channels are stuck off at any one panel, try swapping the two LM324 chips to see if the problem moves from one channel to another.

All chips should run cool or slightly warm to the touch. If any are hot, disconnect the panel and return it to the factory for repair.

The blue trimmer adjusts the output voltage and should not be adjusted under most circumstances. It has been factory set for +10VDC output.

Technical support is available at http://www.dovesystems.com 24 hours a day. Especially check the "discussion area" and FAQ for particular problems and solutions.

Dove Systems technicians are generally available between 8AM and 5PM Pacific time for phone support at (805)541-8292. Please have a specific description of the problem, preferably from personnel who were on site at the time. If at all possible, bring the telephone into the theatre and have the equipment at hand.

If it is necessary to send the unit to the factory, please ship it freight prepaid, with a note describing the specific complaint. Include the shipping address, a daytime telephone number, and the date the unit is required back. VERY IMPORTANT: PLEASE ENCLOSE A NOTE DESCRIBING THE PROBLEM--EVEN IF YOU HAVE CONTACTED THE FACTORY BY PHONE.

Send to: Service Dept
Dove Systems
3563 Sueldo Street, Suite E
San Luis Obispo, California, 93401
Phone: (805)541-8292

LIMITED WARRANTY

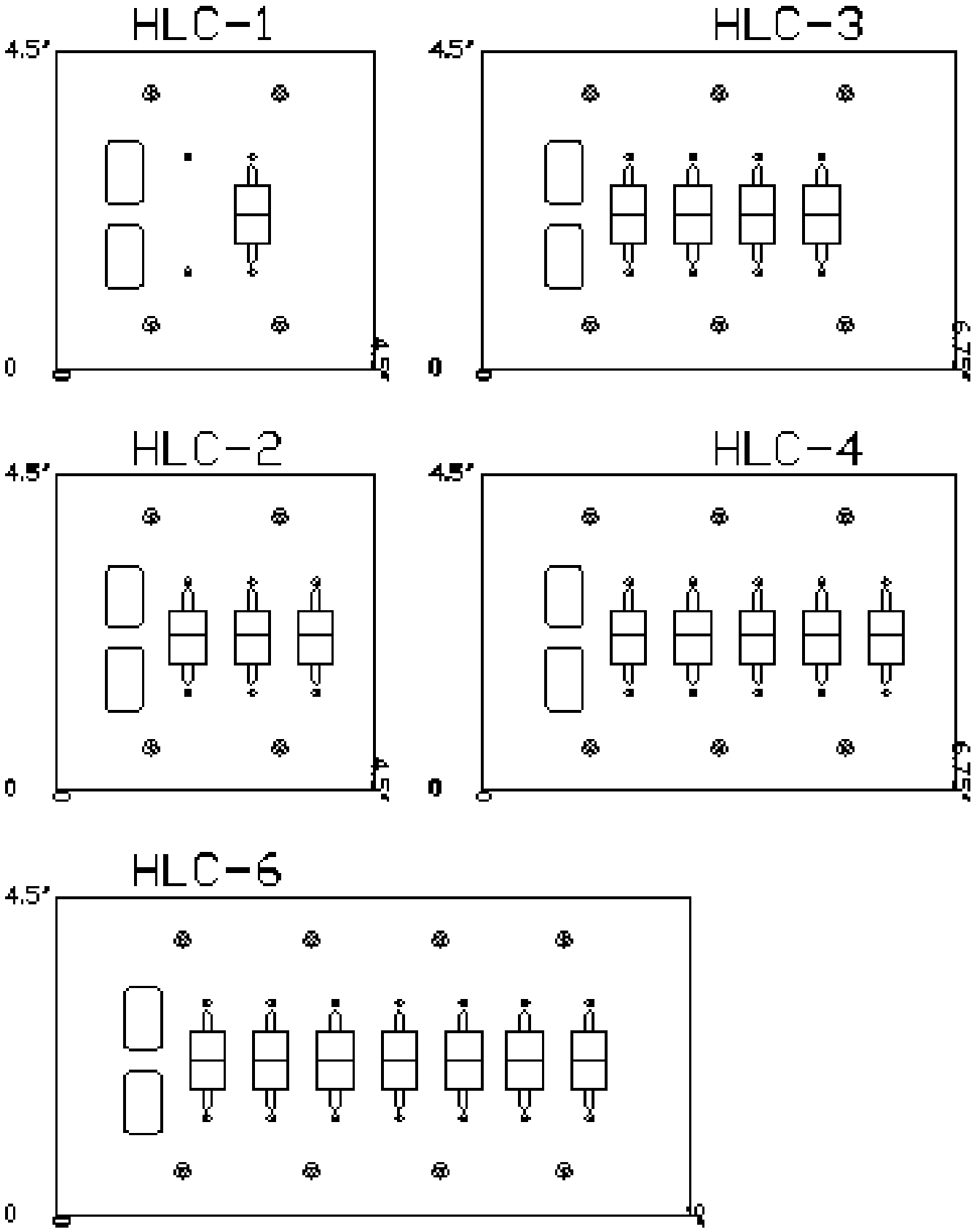
The manufacturer agrees that the HLC shall be free from defects in material or workmanship from date of shipment over a period of one year. Said warranty will not apply if equipment is used under conditions of service for which it is not specifically intended. The manufacturer is not responsible for damage to its apparatus through improper installation, physical damage, or poor operating practice.

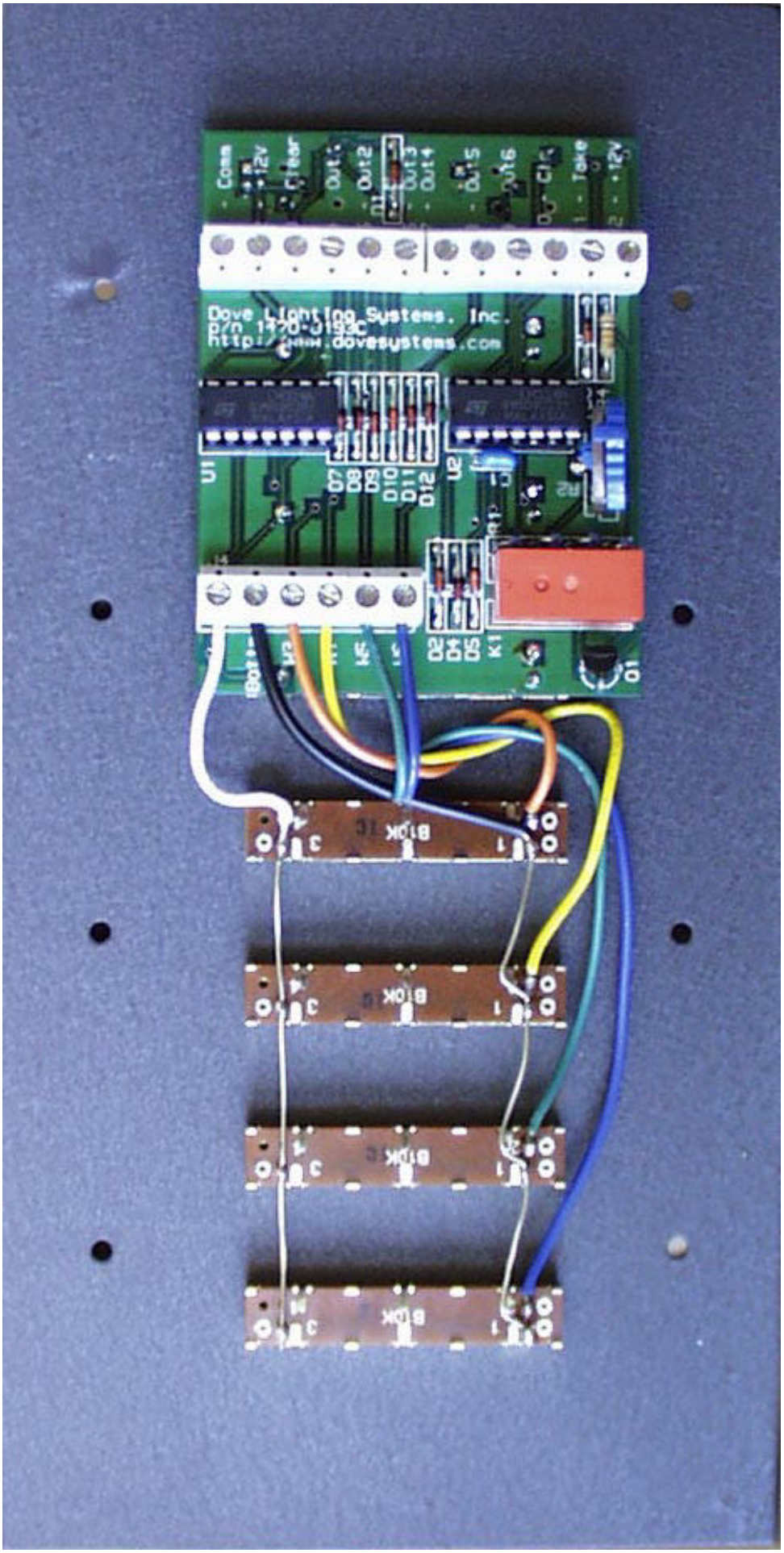
If any device is found unsatisfactory under the warranty, the buyer should notify the manufacturer, and after receipt of shipping advice, buyer may return it directly to Dove Systems, San Luis Obispo, CA, shipping prepaid. Such equipment will be replaced or put in proper operating condition, free of all charges except transportation. The correction of any defects by repair or replacement by the manufacturer shall constitute fulfillment of all obligations to the purchaser. Manufacturer does not assume responsibility for unauthorized repairs to its apparatus, even though defective.

Manufacturer shall not be liable for any consequential damage in case of any failure to meet the conditions of any warranty of shipping schedule, nor will claims for labor, loss of profits, repairs, or other expenses incidental to replacement be allowed.

No other representations, guarantees or warranties, expressed or implied, are made by the manufacturer in connection with the manufacture and sale of its equipment. This warranty is non-transferable and applies to the original buyer only.

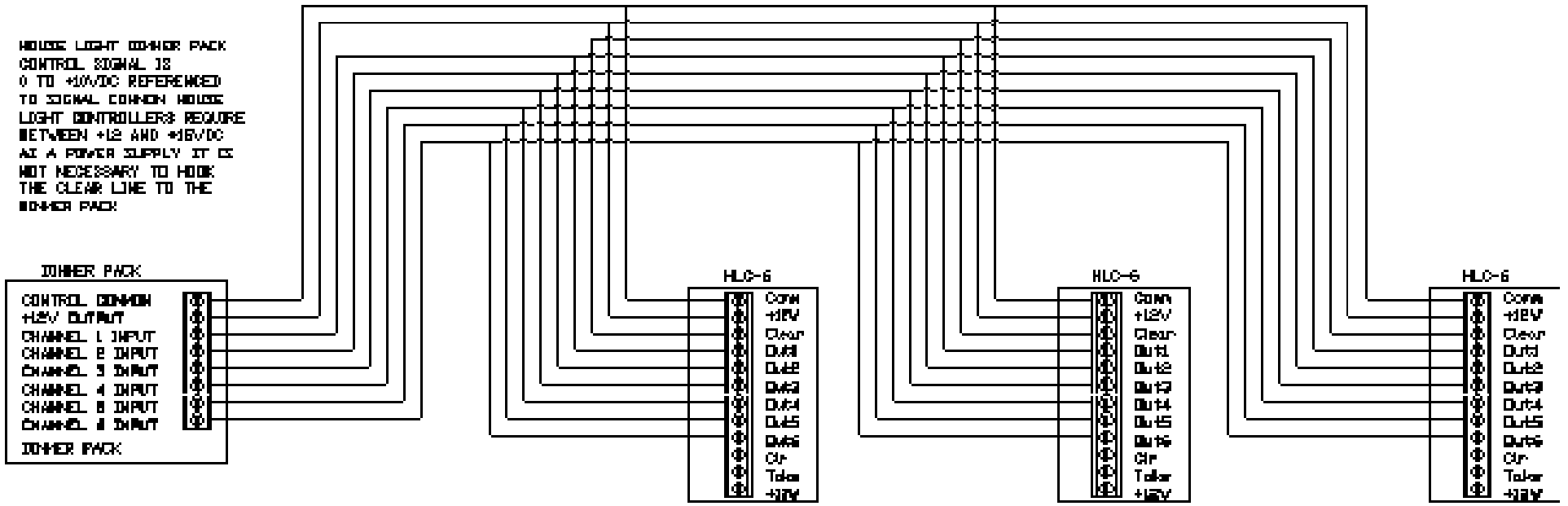
HLC CONFIGURATIONS




Dove Lighting Systems, Inc.
www.dovesystems.com

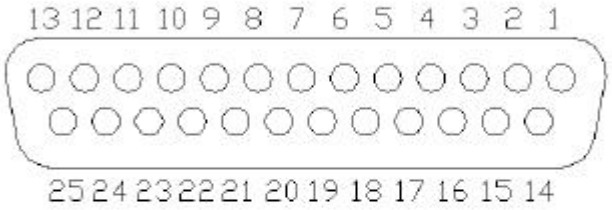
BASIC WIRING DIAGRAM

HOUSE LIGHT DIMMER PACK
CONTROL SIGNAL IS
0 TO +10V/DC REFERENCED
TO SIGNAL COMMON HOUSE
LIGHT CONTROLLERS REQUIRE
BETWEEN +12 AND +18V/DC
AS A POWER SUPPLY IT IS
NOT NECESSARY TO HOOK
THE CLEAR LINE TO THE
DIMMER PACK



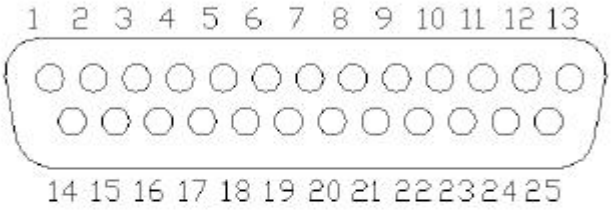
HOUSE LIGHT CONTROLLERS MAY BE BUSSED ONE CONDUCTOR FOR EACH OUTPUT CHANNEL AND
THREE ADDITIONAL CONDUCTORS ARE REQUIRED 8C SHIELD CABLE IS RECOMMENDED

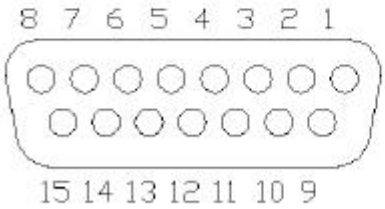
FEMALE



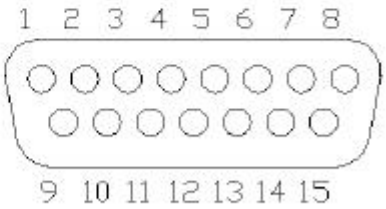
DB25

MALE



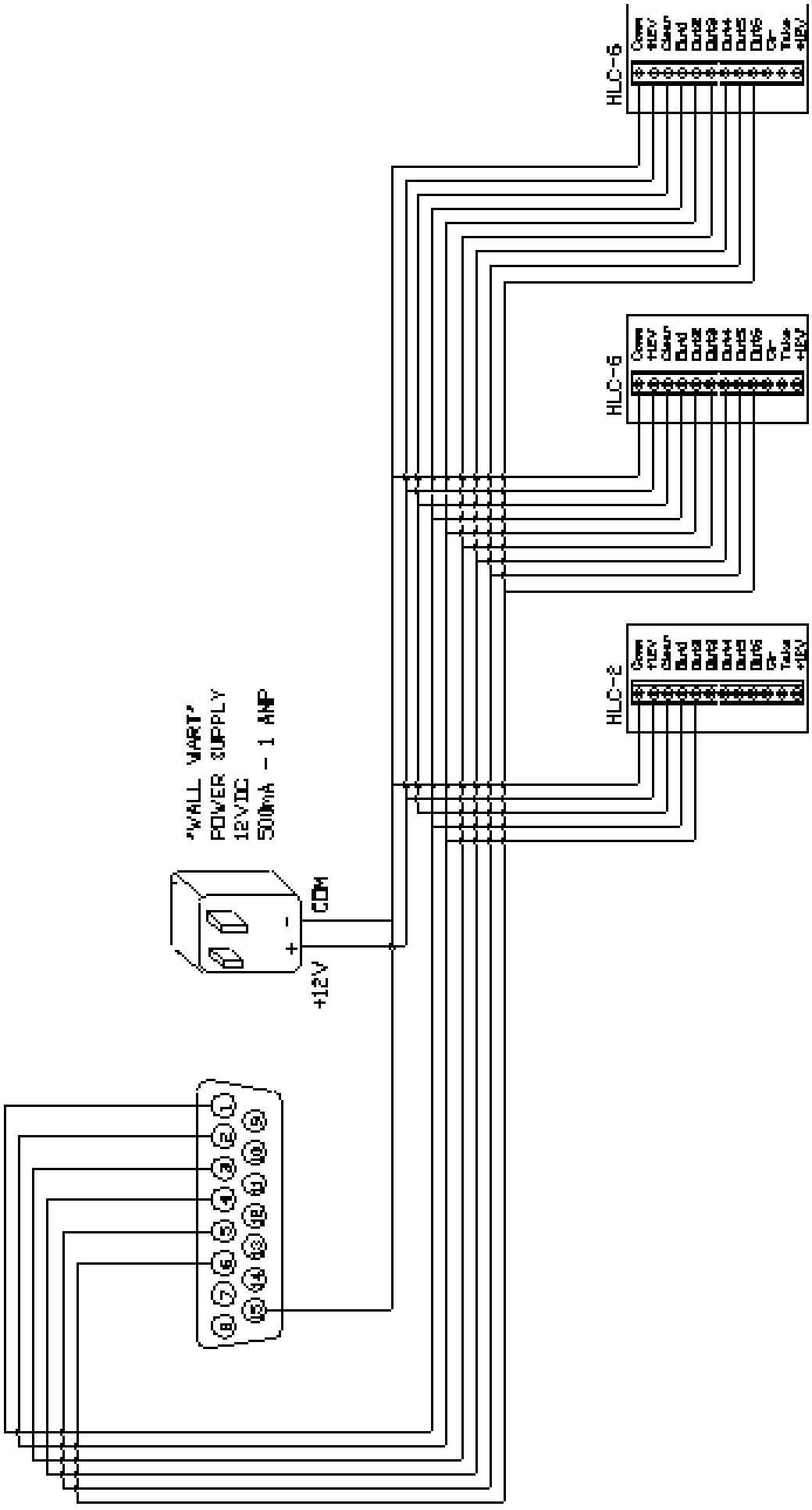


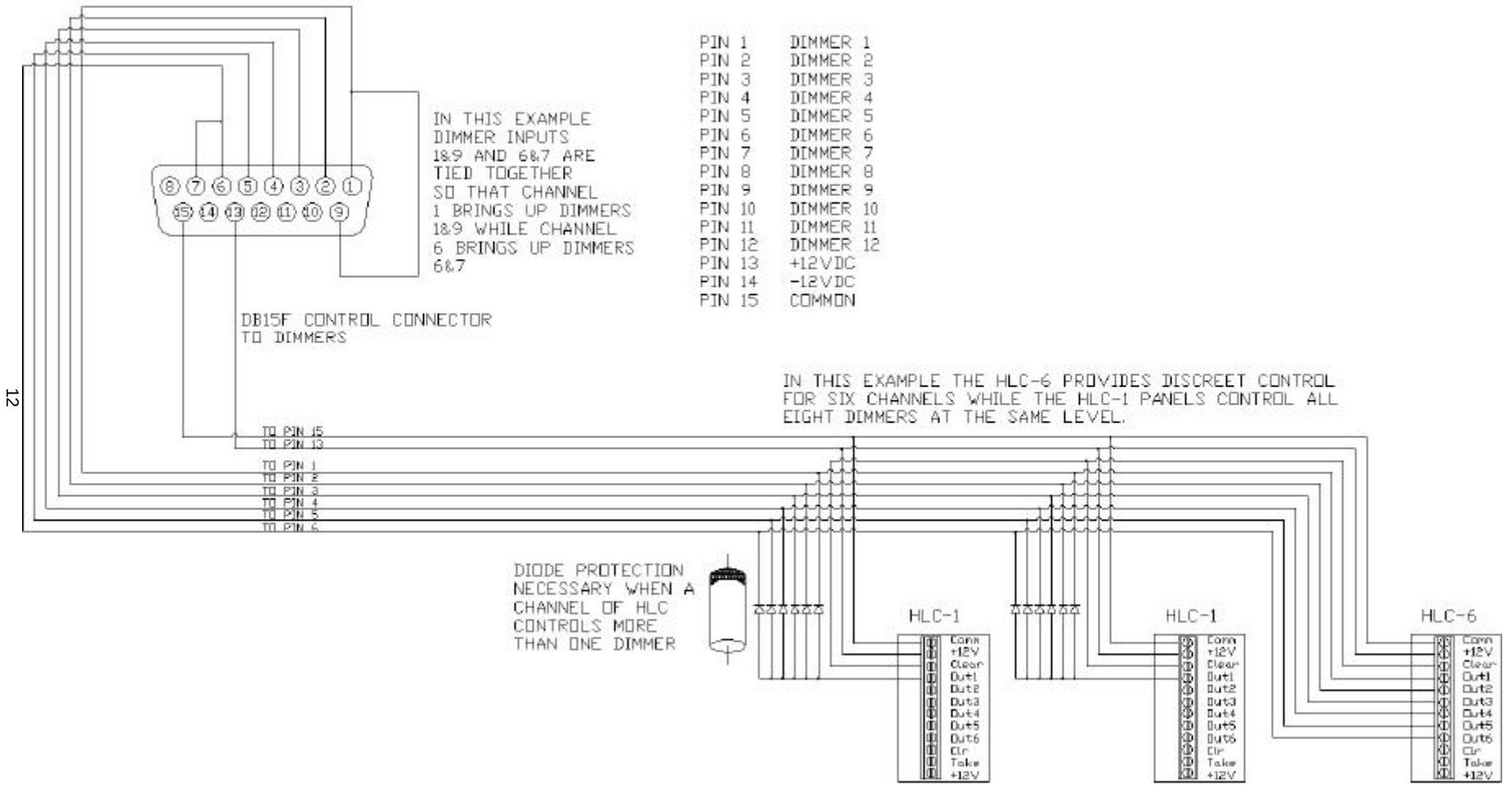
DB15

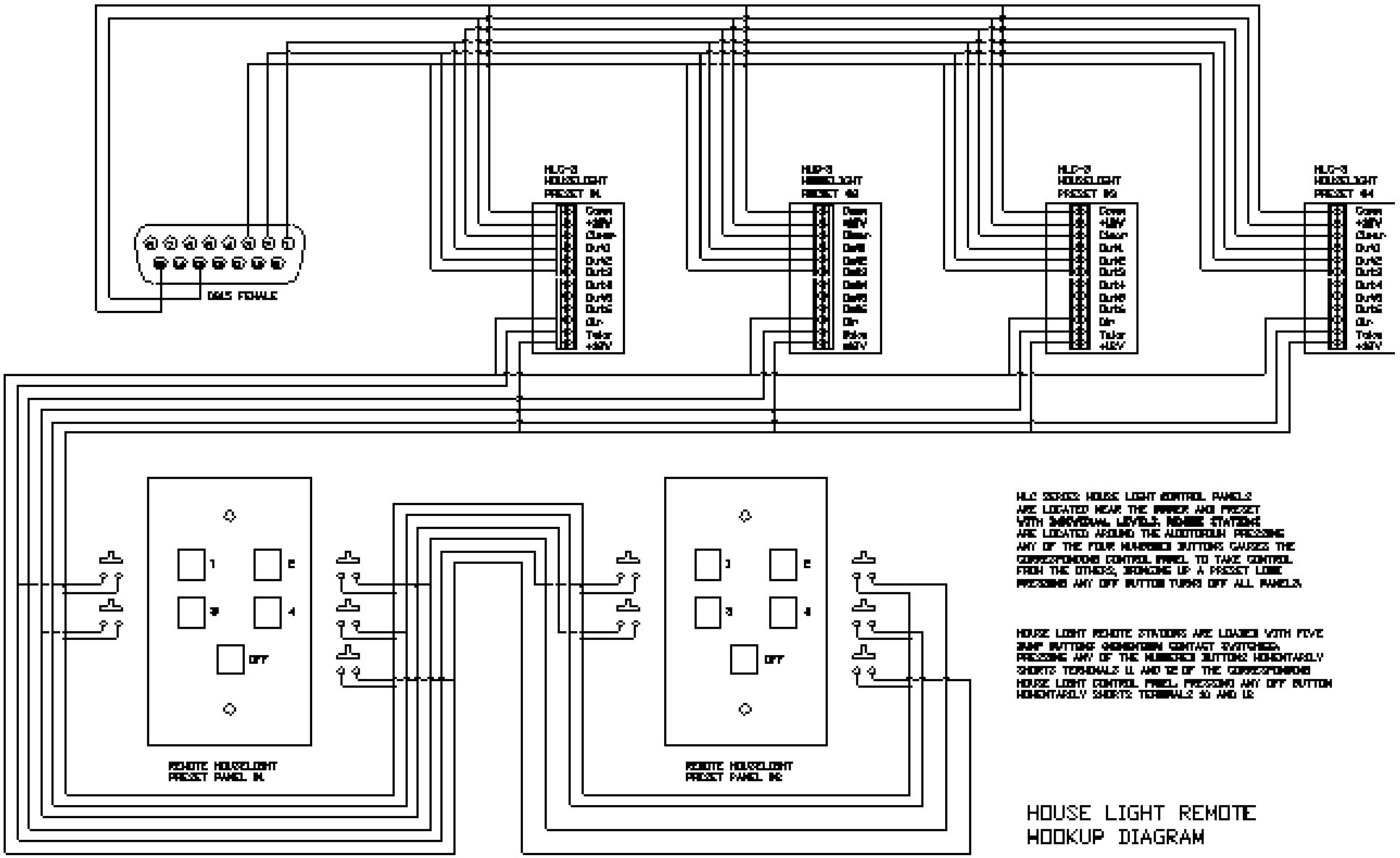


DB25	
PIN 1	CHANNEL 1
PIN 2	CHANNEL 2
PIN 3	CHANNEL 3
PIN 4	CHANNEL 4
PIN 5	CHANNEL 5
PIN 6	CHANNEL 6
PIN 7	CHANNEL 7
PIN 8	CHANNEL 8
PIN 9	CHANNEL 9
PIN 10	CHANNEL 10
PIN 11	CHANNEL 11
PIN 12	CHANNEL 12
PIN 13	CHANNEL 13
PIN 14	CHANNEL 14
PIN 15	CHANNEL 15
PIN 16	CHANNEL 16
PIN 17	CHANNEL 17
PIN 18	CHANNEL 18
PIN 19	CHANNEL 19
PIN 20	CHANNEL 20
PIN 21	CHANNEL 21
PIN 22	CHANNEL 22
PIN 23	CHANNEL 23
PIN 24	CHANNEL 24
PIN 25	COMMON

DB15	
PIN 1	CHANNEL 1
PIN 2	CHANNEL 2
PIN 3	CHANNEL 3
PIN 4	CHANNEL 4
PIN 5	CHANNEL 5
PIN 6	CHANNEL 6
PIN 7	CHANNEL 7
PIN 8	CHANNEL 8
PIN 9	CHANNEL 9
PIN 10	CHANNEL 10
PIN 11	CHANNEL 11
PIN 12	CHANNEL 12
PIN 13	+15VDC
PIN 14	-15VDC
PIN 15	COMMON


HLC-6
HLC-6
HLC-2
"WALL WART"
POWER SUPPLY
12VDC
500mA - 1 AMP
COM
+12V


IN THIS EXAMPLE
DIMMER INPUTS
1&9 AND 6&7 ARE
TIED TOGETHER
SO THAT CHANNEL
1 BRINGS UP DIMMERS
1&9 WHILE CHANNEL
6 BRINGS UP DIMMERS
6&7
PIN 1 DIMMER 1
PIN 2 DIMMER 2
PIN 3 DIMMER 3
PIN 4 DIMMER 4
PIN 5 DIMMER 5
PIN 6 DIMMER 6
PIN 7 DIMMER 7
PIN 8 DIMMER 8
PIN 9 DIMMER 9
PIN 10 DIMMER 10
PIN 11 DIMMER 11
PIN 12 DIMMER 12
PIN 13 +12VDC
PIN 14 -12VDC
PIN 15 COMMON
DB15F CONTROL CONNECTOR
TO DIMMERS
IN THIS EXAMPLE THE HLC-6 PROVIDES DISCREET CONTROL
FOR SIX CHANNELS WHILE THE HLC-1 PANELS CONTROL ALL
EIGHT DIMMERS AT THE SAME LEVEL.
TO PIN 15
TO PIN 13
TO PIN 1
TO PIN 2
TO PIN 3
TO PIN 4
TO PIN 5
TO PIN 6
DIODE PROTECTION
NECESSARY WHEN A
CHANNEL OF HLC
CONTROLS MORE
THAN ONE DIMMER
HLC-1
HLC-1
HLC-6
Comn
+12V
Clear
Out1
Out2
Out3
Out4
Out5
Out6
Clr
Take
+12V



HLC SERIES HOUSE LIGHT CONTROL PANELS ARE LOCATED NEAR THE MIRROR AND PRESET WITH INDIVIDUAL LEVELS. REMOTE STATIONS ARE LOCATED AROUND THE AUDITORIUM. PRESSING ANY OF THE FOUR NUMBERED BUTTONS CAUSES THE CORRESPONDING CONTROL PANEL TO TAKE CONTROL FROM THE OTHERS, BRINGING UP A PRESET LOOK. PRESSING ANY OFF BUTTON TURNS OFF ALL PANELS.

HOUSE LIGHT REMOTE STATIONS ARE LOADED WITH FIVE JUMP BUTTONS (MOMENTARY CONTACT SWITCHES). PRESSING ANY OF THE NUMBERED BUTTONS MOMENTARILY SHORTS TERMINALS 11 AND 12 OF THE CORRESPONDING HOUSE LIGHT CONTROL PANEL. PRESSING ANY OFF BUTTON MOMENTARILY SHORTS TERMINALS 10 AND 12.

HOUSE LIGHT REMOTE HOOKUP DIAGRAM