

SMART

Devices, Inc.



- UL approved for US and Canada
- Three light levels plus a FULL brightness emergency level.
- Low current, ground-to-select control lines.
- Available as a open frame unit for console mounting and as a fully enclosed wall mount unit. Both are UL approved.
- High current dual SCR for ruggedness and reliability.
- Fade defeat for quick and easy light level adjustment.
- Works with low voltage lighting transformer loads.

DIMENSION 3K THREE STAGE LIGHT DIMMER

INSTALLATION AND OPERATION MANUAL

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CONTACT

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Visit the SMART WEB site at
<http://www.smartdev.com>
for new product information, on-line manuals, the SMART bulletin board,
and other information that may interest you.

LIMITED WARRANTY

SMART products and accessories are warranted against malfunction or failure due to defects in workmanship or materials for a period of one year from the date of shipment. If a problem occurs during the warranty period, the unit will be repaired, or replaced at our option, without charge for materials or labor. If air freight is requested by the dealer, the difference between air and surface charges will be billed to the dealer. This limited warranty does not cover products that have been abused, altered, modified, or operated in other than specified conditions. Prior factory approval is required on all returns. Returned equipment or defective parts must be shipped freight prepaid to us by the dealer or customer. Our limited warranty does not cover damages resulting from accident, misuse or abuse, lack of responsible care, or failures not attributable to manufacturing defects, except as provided herein. SMART Devices, Inc. makes no warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. RETURN POLICY: Factory authorization MUST be obtained before returning any product. A 15% restocking charge will be issued on unused equipment (in original box) that is returned for credit. Credit is issued to the dealers account. The credit may be used against future purchases and no cash transactions are offered. All returns must be shipped freight prepaid by the dealer. Equipment returned without a factory RA (Return Authorization) will be refused.

INTRODUCTION

The SMART DIM 3K is a three stage light dimmer for cinema lighting control. The DIM 3K is available as a fully enclosed wall mount version, with or without manual override pushbuttons, or as an open frame unit for mounting in a suitable enclosure such as a projector console. This dimmer is ruggedly constructed and is designed with the highest quality parts for reliable operation and long life. The dual SCR output is very conservatively rated, and is capable of far more current than the rated load current of the dimmer. Adequate heat sinking is provided which results in moderate temperature rise even at full rated load.



UL CONSIDERATIONS

The open frame version is UL approved for mounting in a UL approved enclosure. The wall mount version is also UL approved. The UL approval is applicable ONLY to those units set up for 120 VAC operation and extends ONLY to those units which have been clearly marked with the following listing mark:



INSTALLATION

Mounting

Mount the DIM 3K in a well ventilated location to avoid overheating. Even though the DIM 3K is conservatively rated, excess ambient temperature can add to the normal temperature rise of the product and can possibly lead to premature failure. Do not block airflow around the heatsink area as this will cause excessive temperature rise.

Electrical Connections

The DIM 3K can be run from 120 VAC (UL approved) or from 240VAC (in those countries that use 240VAC for lighting). The DIM 3K is normally shipped set up for the proper voltage for your country. It is only necessary to change some jumper wires on the circuit board to make the change from one voltage to another. Please contact the factory if you need to change the supply voltage.

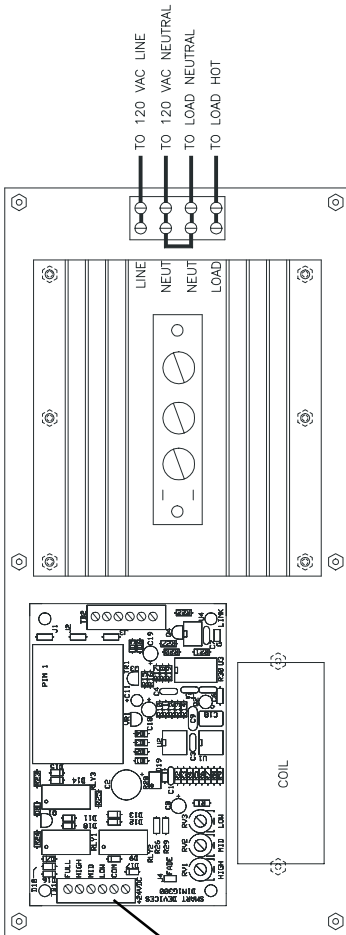
The DIM 3K has no built in circuit breakers or fuses, and you MUST supply a circuit breaking device (in the LINE side) of the proper rating for your load. Remember that for a continuous load, circuit breakers should be run at about 80% of their current rating.

To determine your current requirements, divide the total lighting wattage by the line voltage to get the load current. **This is the current at the rated line voltage.** Since the lights will rarely be run at full line voltage, the actual current will be less in normal operation.

For example, a 3000 Watt load at 120VAC pulls about 25 Amperes of current. If you plan to set the HIGH lights level to the full line voltage, your circuit breaker would need to be rated at 30 to 35 Amperes. If you are going to set the HIGH lights levels to around 100VAC, then the normal current will be less, and the breaker could be rated at about 25 Amperes.

The line, neutral and load connections are made to the terminal strip mounted on the chassis at the end of the heat sink. Make sure that the wire gauge used is rated for the load current. **Use COPPER conductors ONLY. Make sure that all connections are tight and secure. The terminals should be torqued to 20 in.-lbs. The high**

load current can cause problems if connections are not properly made. See the diagram to the left for the LINE, NEUTRAL, and LOAD connections.



Control Circuit Connections

Control wiring is very straightforward and is low voltage (less than 28 VDC) and low current (less than 50 mA). Use any type of low voltage hookup wire, but shielded is recommended for best immunity to possible false triggering from external interference. Belden 8723 would be a good choice. The HIGH, MID, or LOW terminal must be momentarily connected to the COM terminal to select the desired light level. Usually this is done by connecting to relays in automation systems. Alternatively, pushbutton switches could be used for manual selection of light levels. **The relays or switch contacts must be isolated with no external voltages applied to them. The application of external voltages to the dimmer control terminals may result in damage to the dimmer.**

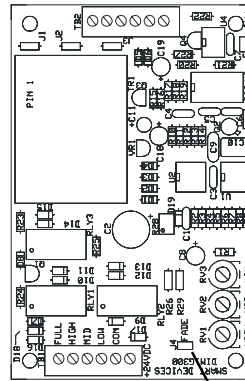
For the most reliable and stable operation, it is highly recommended that each dimmer be fed from its own breaker in the distribution panel, and that SEPARATE neutrals be run from each to the distribution panel. This will help to minimize the possibility of EMI from the dimmer affecting other equipment and also EMI from other equipment affecting the dimmer operation. Try to keep all the dimmers on the same phase and OFF the phase that is used for the sound systems for minimum noise.

The FULL terminal is used to place the dimmer instantly in the full brightness mode. This is useful for emergency situations such as a fire alarm. This terminal requires a latching connection to the COM terminal. As long as the connection is closed between the FULL and COM terminals, the lights will stay at full brightness regardless of the condition of the other terminals.

Adjustment

The dimmer has three light levels which must be adjusted for each individual theatre. The DIM 3K has a removable jumper called FADE which can be easily removed to make the adjustment process quick and easy. This jumper is located close to the three trimpots which are used to set the light levels. When the jumper is removed, the light

level changes instantly as you adjust the trimpots so you do not have to wait and wait for the light level to stabilize each time you turn the trimpot. When you are finished making the adjustments for each of the three light levels, replace the jumper so that light level changes are smooth and gradual for normal operation.



Light Level Adjustment Trimpots

Fade Jumper

OPERATION

There are no usual operation requirements since in most cinemas, the dimmers are controlled by the automation system. The only operator accessible controls are the manual override pushbuttons on the wall mount unit. If the installer has installed some other type of manual control, please refer to the instructions given by the installer or cinema manager on the proper operation. Usually the only time that requires operator intervention is if the automation system has failed and the booth is being run manually. Pressing the appropriate pushbutton will select the desired light level.