

**AT SERIES ARCHITECTURAL DIMMER
OWNERS MANUAL**

Revision 0.1

08/29/2003

DESCRIPTION OF UNIT

The AT Series Dimmer is a unit specifically optimized for architectural applications. It can be supplied with up to four 2400 Watt lighting circuits (channels) and be remotely controlled by a DMX lighting console. Some models are provided with a fast acting 20 Amp magnetic circuit breaker for each channel. A table at the end of this manual gives a description of the different model numbers. Additional models can be supplied for 220 VAC operation.

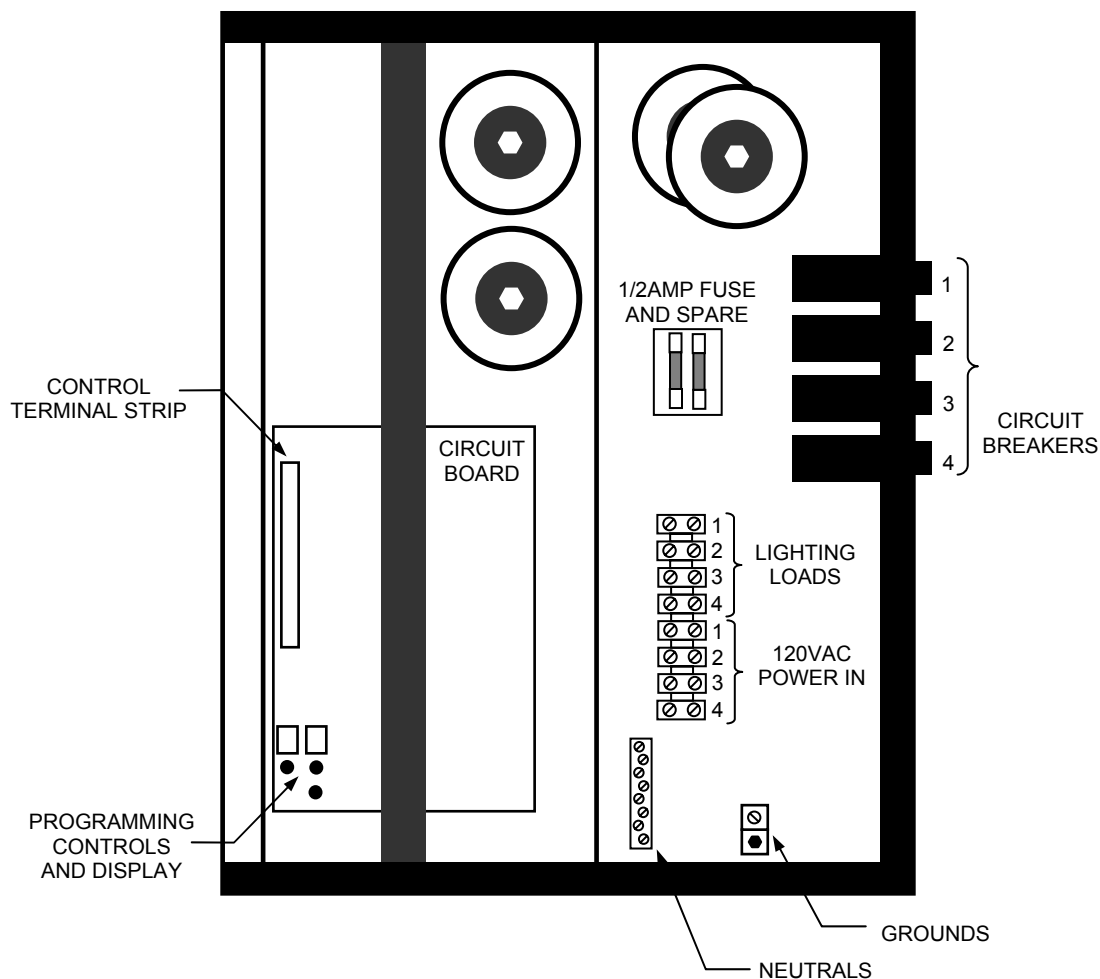
The unit is intended for wall mounting. AT Series dimmers are for INDOOR USE ONLY.

POWER REQUIREMENTS

The AT Series dimmer requires a 120VAC hot power feed line for each lighting circuit (channel), a common neutral, and an earth ground. Each of these feeds must be powered by a circuit providing a minimum of 20 Amps and supplies only one of the AT Series dimmer lighting circuits. The power feed for channel 1 also powers the unit's internal electronic circuitry. The internal circuitry is protected by a replacable 1/2 Amp, 250 Volt, fast acting fuse. The AT dimmer may be operated from either single phase or three phase power and may be switched between these power types by the user.

INSTALLATION

AT-402 FRONT VIEW (Cover Removed)



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LOCATION AND MOUNTING

The unit is to be wall mounted using the mounting holes provided in the chassis. Orient the unit such that the circuit board is in the lower left area of the chassis. The unit may (but is not required to be) spaced out from the wall approx. 1 inch. This may be desirable if the unit must be used in a location with a high ambient temperature. Standard sized knockout holes are provided in the top, bottom and right side of the chassis for wiring. Be sure that the vent holes in the chassis and cover are not obstructed since they are needed for proper cooling.

INPUT POWER CONNECTIONS

WARNING

Make sure that all power is removed from feed circuits before proceeding with wiring.

Connect power input leads to the lower terminal strip positions as indicated on the terminal strip labels. A hot feed line is needed for each channel. Associated NEUTRALS are to be connected to the NEUTRAL bar provided. An earth ground is also needed. A ground lug is provided. The terminal strip connection torque specification is 16 lb.-in. max. The minimum wire size is AWG#12. Consult the applicable electrical codes for your location for exact wire specifications. The power terminal connections are intended for copper wire only. This unit will work on either single or three phase power. Any dimmer channel may get power from any phase.

LOAD CONNECTIONS

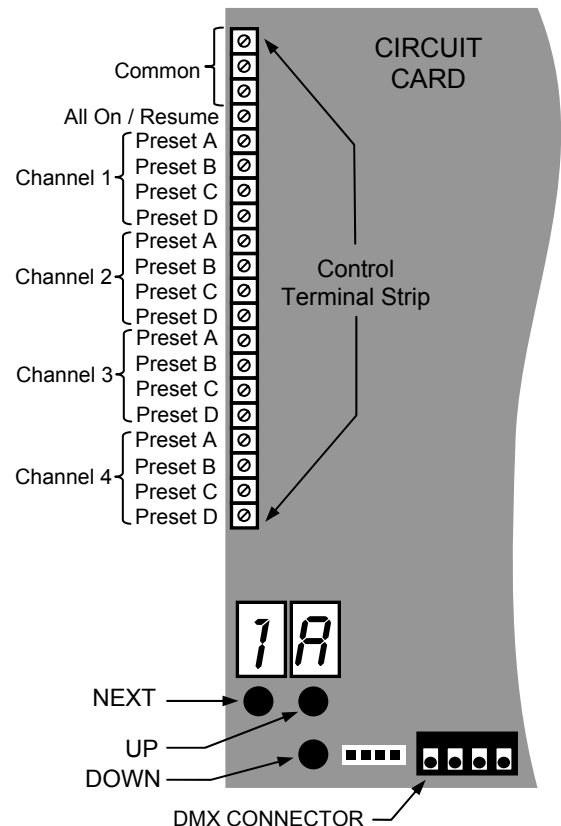
The AT Series dimmer is intended for incandescent lamp loads. You can connect up to 2400 Watts of lighting to each channel. Connect lighting loads to the upper terminal strip positions as indicated by the label. The neutral bar and ground lug may be used for lighting loads. The terminal strip connection torque specification is 16 lb.-in.

REMOTE SWITCH CONNECTIONS

A control terminal strip located on left side of the low voltage section of the printed circuit board is provided for connecting external switch control signals. In general, a common signal (circuit ground) is sent from the terminal strip to a momentary contact of a remotely located switch. The switch closure is returned to other positions on the AT-402 dimmer control terminal strip to activate four preset channel intensity levels for each of 4 lighting conditions to be activated.

DMX CONNECTIONS

A 4 pin screw terminal connector is provided for DMX signal input. It is located approx. centered along the bottom edge of the circuit board. The connection details are shown below:



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INITIAL SET UP

Set up of the AT Series dimmer is done using the 2 LED indicators and the 3 push buttons located at the bottom left of the low voltage section of the the circuit board inside of the unit. Use these controls to set the unit to operate correctly for the type of input power being used for the unit.

Set the Input Power Phase for each dimmer channel. This must be set correctly or dimmers will not operate correctly.

LED SYMBOL	FUNCTION	VALUE
P2	Channel 2 Input power phase	A, B, or C
P3	Channel 3 Input power phase	A, B, or C
P4	Channel 4 Input power phase	A, B, or C

For P2-P4, set to A, B, or C depending on which phase each channel gets its power from. For single phase power set P2, P3, and P4 to "A".

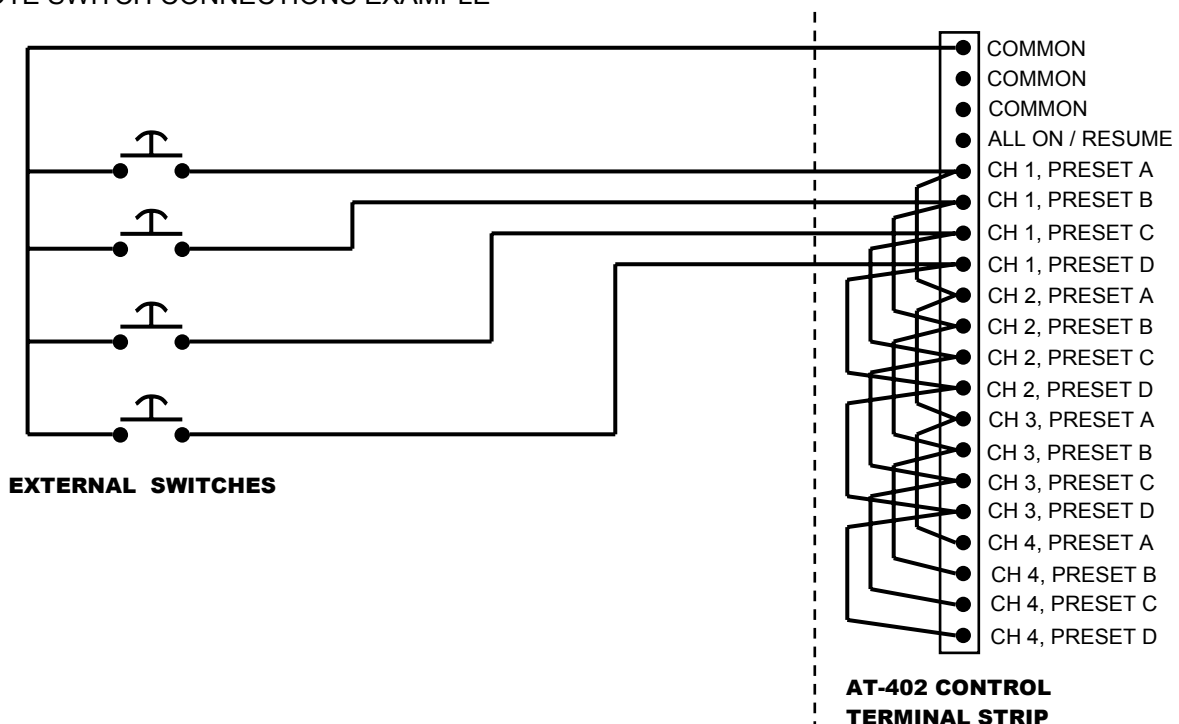
SET UP FOR A SINGLE PHASE POWER INSTALLATION

Press the NEXT button repeatedly until P2 appears on the LED indicator. This tells the unit which phase circuit 2 is getting it's power from, hence P2 (phase - Channel 2). Use the UP/DOWN buttons to set the right hand indicator to "A". Do the same for P3 and P4 (phase - Channel 3) (phase - Channel 4).

SET UP FOR A THREE PHASE POWER INSTALLATION

Hold down the NEXT button until P2 appears on the LED indicator. Use the UP/DOWN buttons to set the right hand indicator to "B" or "C". If the unit does not fade smoothly between preset levels or some of the channels seem to operate in an OFF/ON only fashion then you should change this setting to the other three phase choice (B or C).

REMOTE SWITCH CONNECTIONS EXAMPLE



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OPERATION

CIRCUIT BREAKERS

Some models of AT Series dimmers use circuit breakers. If it does - there is a 20 Amp magnetic circuit breaker for each dimmer channel located on the right side of the unit. To operate a channel, the associated circuit breaker must be closed. Channel numbers for the circuit breakers are labeled on the unit. If a circuit breaker will not remain closed then there is an overload at the lamps for that channel which **MUST** be corrected before operation can continue.

INDICATORS

There is a LED indicator for each channel on circuit board. They provide an indication of the current lighting intensity for the associated channel.

DMX OPERATION

When a DMX Lighting Control console or controller is used with an AT series dimmer the dimmer will respond to controller DMX channels 1 - 4. No additional settings are needed. If a valid DMX signal is provided to the unit - it will override and lock out ALL remote switch closure operation.

REMOTE SWITCH CONTROL

GENERAL REMOTE SWITCH OPERATION - A SMALL THEATER EXAMPLE

During theater operation, the lighting is controlled by external momentary switch closures either manually or by automated equipment. The AT-402 dimmer is designed to activate preset lighting conditions in response to these controls.

A simple scenario is described in the following table. The table is for an installation where a four channel unit is used. AT-402 dimmer channels 1 and 2 are connected to the stage lights and AT-402 dimmer channels 3 and 4 are connected to the house lights. The 3% intensity level shown for some of the settings in the table essentially results in no light from the lamps but keeps the lamp filaments warm which extends the lamp life.

ACTIVITY or PRESET	HOUSE LIGHTING Channel 1	HOUSE LIGHTING Channel 2	STAGE LIGHTING Channel 3	STAGE LIGHTING Channel 4
A Opening and Seating	90% (5 sec. Fade)	90% (5 sec. Fade)	90% (5 sec. Fade)	90%(5 sec. Fade)
B Introduction	50% (15 sec. Fade)	50% (15 sec. Fade)	3% (15 sec. Fade)	3% (15 sec. Fade)
C Main Performance	3% (5 sec. fade)	3%(5 sec. fade)	3%	3%
D Closing	60% (10 sec. Fade)	60% (10 sec. fade)	3%	3%

MANUAL ALL ON / RESUME OPERATION

The "All On / Resume" control may be activated by momentary external switch closure between one of the "Common" terminals and the "All On / Resume" terminal of the circuit board Control Terminal Strip. . This function overrides other switched channel controls. It sets all channels to maximum intensity, and remains in effect until the button is pushed again. At that time the unit will "Resume" normal operation (return to the intensity settings provided by the other remote switch control signals).

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PROGRAMMING THE UNIT:

The LED's will alternate between the FUNCTION (channel/preset level and preset fade) and its VALUE (intensity and fade time). There are 2 digits and 3 buttons to control everything. Press the NEXT button to advance through each FUNCTION. Press the UP and DOWN buttons to change the VALUE for the alternately displayed FUNCTION.

Note that the 100% intensity value on the LED display is indicated by "FL" (full).

SYMBOL	FUNCTION	VALUE
1A	Channel 1 Preset A intensity	0-100% intensity
1b	Channel 1 Preset B intensity	0-100% intensity
1C	Channel 1 Preset C intensity	0-100% intensity
1d	Channel 1 Preset D intensity	0-100% intensity
2A	Channel 2 Preset A intensity	0-100% intensity
2b	Channel 2 Preset B intensity	0-100% intensity
2C	Channel 2 Preset C intensity	0-100% intensity
2d	Channel 2 Preset D intensity	0-100% intensity
3A	Channel 3 Preset A intensity	0-100% intensity
3b	Channel 3 Preset B intensity	0-100% intensity
3C	Channel 3 Preset C intensity	0-100% intensity
3d	Channel 3 Preset D intensity	0-100% intensity
4A	Channel 4 Preset A intensity	0-100% intensity
4b	Channel 4 Preset B intensity	0-100% intensity
4C	Channel 4 Preset C intensity	0-100% intensity
4d	Channel 4 Preset D intensity	0-100% intensity
1 ^r	Channel 1 Up fade time	1-99 seconds (applied to all presets)
1 _d	Channel 1 Down fade time	1-99 seconds (applied to all presets)
2 ^r	Channel 2 Up fade time	1-99 seconds (applied to all presets)
2 _d	Channel 2 Down fade time	1-99 seconds (applied to all presets)
3 ^r	Channel 3 Up fade time	1-99 seconds (applied to all presets)
3 _d	Channel 3 Down fade time	1-99 seconds (applied to all presets)
4 ^r	Channel 4 Up fade time	1-99 seconds (applied to all presets)
4 _d	Channel 4 Down fade time	1-99 seconds (applied to all presets)

You can STOP HERE, or continue and set the individual up/down fade times. If individual times do not need to be set then proceed to P2-P4 Channel Input power phase selection.

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TO SET THE INDIVIDUAL UP/DOWN FADE TIMES (or skip this section) These settings will over-ride the fade up/down settings in the previous section.

SYMBOL	FUNCTION	VALUE
.A1	Channel 1, Preset A - up fade time	1-99 seconds
A1	Channel 1, Preset A - down fade time	1-99 seconds
.b1	Channel 1, Preset B - up fade time	1-99 seconds
b1	Channel 1, Preset B - down fade time	1-99 seconds
.C1	Channel 1, Preset C - up fade time	1-99 seconds
C1	Channel 1, Preset C - down fade time	1-99 seconds
.d1	Channel 1, Preset D - up fade time	1-99 seconds
d1	Channel 1, Preset D - down fade time	1-99 seconds
.A2	Channel 2, Preset A - up fade time	1-99 seconds
A2	Channel 2, Preset A - down fade time	1-99 seconds
.b2	Channel 2, Preset B - up fade time	1-99 seconds
b2	Channel 2, Preset B - down fade time	1-99 seconds
.C2	Channel 2, Preset C - up fade time	1-99 seconds
C2	Channel 2, Preset C - down fade time	1-99 seconds
.d2	Channel 2, Preset D - up fade time	1-99 seconds
d2	Channel 2, Preset D - down fade time	1-99 seconds
.A3	Channel 3, Preset A - up fade time	1-99 seconds
A3	Channel 3, Preset A - down fade time	1-99 seconds
.b3	Channel 3, Preset B - up fade time	1-99 seconds
b3	Channel 3, Preset B - down fade time	1-99 seconds
.C3	Channel 3, Preset C - up fade time	1-99 seconds
C3	Channel 3, Preset C - down fade time	1-99 seconds
.d3	Channel 3, Preset D - up fade time	1-99 seconds
d3	Channel 3, Preset D - down fade time	1-99 seconds
.A4	Channel 4, Preset A - up fade time	1-99 seconds
A4	Channel 4, Preset A - down fade time	1-99 seconds
.b4	Channel 4, Preset B - up fade time	1-99 seconds
b4	Channel 4, Preset B - down fade time	1-99 seconds
.C4	Channel 4, Preset C - up fade time	1-99 seconds
C4	Channel 4, Preset C - down fade time	1-99 seconds
.d4	Channel 4, Preset D - up fade time	1-99 seconds
d4	Channel 4, Preset D - down fade time	1-99 seconds

MAINTENANCE

WARNING! RISK OF ELECTRICAL SHOCK

***There are lethal voltages present in this product when power is applied to its feed circuits.
The cabinet should be opened only by a qualified electrician.***

The only user servicable part in the AT Series dimmer is the Type ABC, ½ Amp, 250 Volt, fast acting fuse. A spare fuse is provided with the unit. The fuse may be replaced ONLY with an identical fuse.

WARNING !

Make sure that all power is removed from feed circuits before changing the fuse.

Service by other than the manufacturers authorized agents may void your warranty.

The best way to prolong the life of your unit is to keep it cool, clean, and dry. It is important that the cooling intake and exit vent holes are clean and unobstructed.

MODEL NUMBERS AND CONFIGURATION

The table below shows the number of channels and circuit breaker information for each model number.

MODEL NUMBER	DESCRIPTION
AT-402	4 Channels
AT-302	3 Channels
AT-202	2 Channels
AT-102	1 Channel

A suffix "B" will appear at the end of the model number if the unit contains channel circuit breakers.

An additional suffix may also appear in the model number. This suffix is "/2" and indicated that the unit is for 240/480VAC applications.

For one and two channel versions, only the components, indicators, and connection points for the applicable channels will be present in the unit.



All Lightronics products are warranted for a period of TWO YEARS from the date of purchase against defects in materials and workmanship.

This warranty is subject to the following restrictions and conditions:

- A) If service is required, you may be asked to provide proof of purchase from an authorized Lightronics dealer.
- B) This warranty is valid only for the original purchaser of the unit.
- C) This warranty does not apply to damage resulting from abuse, misuse, accidents, shipping, and repairs or modifications by anyone other than an authorized Lightronics service representative.
- D) This warranty is void if the serial number is removed, altered or defaced.
- E) This warranty does not cover loss or damage, direct or indirect arising from the use or inability to use this product.
- F) Lightronics reserves the right to make any changes, modifications, or updates as deemed appropriate by Lightronics to products returned for service. Such changes may be made without prior notification to the user and without incurring any responsibility or liability for modifications or changes to equipment previously supplied. Lightronics is not responsible for supplying new equipment in accordance with any earlier specifications.
- G) This warranty is the only warranty either expressed, implied, or statutory, upon which the equipment is purchased. No representatives, dealers or any of their agents are authorized to make any warranties, guarantees, or representations other than expressly stated herein.
- H) This warranty does not cover the cost of shipping products to or from Lightronics for service.