



AB0602N
ARCHITECTURAL LED/BALLAST CONTROLLER

Version 1.0

11/29/2023

AB0602N ARCHITECTURAL LED/BALLAST CONTROLLER

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OWNER'S MANUAL

11/29/2023

DESCRIPTION AND FEATURES

The AB0602N is a six circuit, 2400 watts per circuit ballast driver intended for non-dimmable lighting fixtures which can use a switched 120VAC (or optional 277VAC) remotely controlled hot to operate them. A three circuit version (AB0302N) is also available and operates identically.

EXTERNAL CONTROLS

The AB0602N can communicate with remotely located control equipment in several ways.

A DMX-512 bus is provided so the unit may be used with a DMX lighting controller. The AB0602N is fully patchable with respect to the DMX bus.

The AB0602N may also be controlled by several types of wall mounted smart remote stations. Smart remotes communicate with the unit by way of a low voltage proprietary RS-485 bus that is referred to as LitNet. LitNet is completely separate from the DMX bus. Smart remotes are used to activate preset scenes which have been stored in the AB0602N. There are several types of smart remote stations. Multiple smart remotes of the same or different types may be chained together over LitNet. Multiple LitNet hosts can be linked together also. These consist of the AB controllers, AR/RA architectural dimmers and SR/SC architectural controllers.

The AB0602N may additionally be controlled by an arrangement of one or more momentary contact switches (simple remotes). The switches may be used to control the first eight scenes stored in the AB0602N.

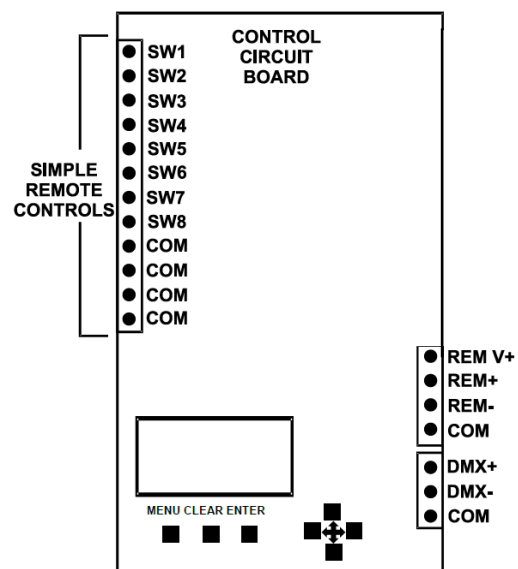
INSTALLATION**PHYSICAL LOCATION**

The unit is intended for **INDOOR USE ONLY** and should not be subjected to excessive moisture or heat. The unit should be installed where a supply of circulating air is available. The AB0602N is designed to be wall mounted in an equipment room or electrical distribution area. The ambient air in the installation area should be below 86°F. Provide spacing between the unit and other equipment to allow air flow around the unit. See the DIMENSIONS AND LOCATIONS diagram on page 10 for more information about mounting the unit.

POWER REQUIREMENTS**TURN OFF ALL POWER SOURCES BEFORE MAKING CONNECTIONS****AC POWER CONNECTIONS**

The internal AB0602N circuitry requires a separate 120VAC line feed. The circuitry is protected by a 1/2 amp fast acting 1 1/4" x 1/4", 250V fuse.

A separate 120VAC line feed is needed for each of the six switched hot loads (A - F). The maximum total wattage for each load is 2400 watts (20 amps). The 277VAC option has a maximum current limit of 16 amps per channel. These connections are made on a terminal strip inside the AB0602N. These wires are to be twisted before inserting into the terminal strip. The terminals are to be torqued to 16 inch-lbs. A grounding bar is also provided. The diagram DIMENSIONS AND LOCATIONS on page 10 shows the connection details.

CONTROL CONNECTIONS

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INPUT CONTROL SIGNAL CONNECTIONS

Connectors with screw down terminals are provided for connection to DMX controllers, smart remotes, and simple remote stations. Wiring connections for all external control signals are shown in the diagram CONTROL AND DIMMING CONNECTIONS.

DMX CONTROLLER CONNECTIONS

DMX control signals to the AB0602N should be transmitted over a shielded, twisted pair, 22-24 gauge, low capacitance (25pF/foot or less) cable.

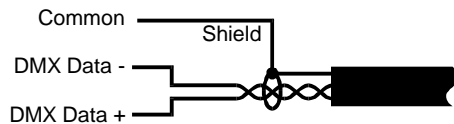
DMX CONNECTION ARRANGEMENT

A DMX bus should be daisy chained to all its receiving units. It should NOT be connected in a star arrangement with multiple home runs.

CAUTION

REMOVE ALL POWER FROM THE AB0602N BEFORE MAKING OR CHANGING DMX CONNECTIONS.

**DMX CABLE
CONDUCTOR ARRANGEMENT FOR
TWISTED PAIR, SHIELDED CABLE**

**DMX TERMINATION**

A DMX bus should be terminated (only) at the last receiving device on the chain. This is done by connecting a 120 ohm, 1/4 watt resistor across the DMX DATA - and DMX DATA + lines.

SMART REMOTE CONNECTIONS (LitNet)

There are two types of smart remotes (push button and fader) which can be used with the AB0602N. There are multiple models of each type. They all connect to a common RS-485 bus (LitNet) which is controlled by the AB0602N. Additional LitNet hosts may also be connected on the same bus. One of them will be set as the primary controller by making UNIT ID ADDRESS ASSIGNMENTS (see page 5).

LitNet signals are transmitted over a shielded, two twisted pair, 22-24 gauge, low capacitance (25pF/foot or less) cable. One pair carries the LitNet data signal and the other pair provides low voltage

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power and common to the remotes.

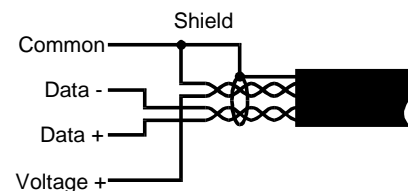
A LitNet host should be daisy chained to all of its receiving units. It should NOT be connected in a star arrangement with multiple home runs.

Each smart remote has a 4 pin connector with screw down terminals to connect to the LitNet bus. You must get the exact wiring pinout information for the remote unit from its owner's manual.

CAUTION

REMOVE ALL POWER FROM THE AB0602N BEFORE MAKING OR CHANGING SMART REMOTE CONNECTIONS.

**SMART REMOTES CABLE CONDUCTOR
ARRANGEMENT FOR DUAL TWISTED PAIR,
SHIELDED CABLE**

**SIMPLE REMOTE CONNECTIONS**

Scenes 1 - 7 (stored in the AB0602N) may be accessed by simple remotes to terminals SW1-SW7. A BLACKOUT function may also be accessed (SW8). A simple remote is any switch which can provide a momentary contact closure which can be applied to a specific pin on the AB0602N SIMPLE REMOTE CONNECTIONS terminal strip.

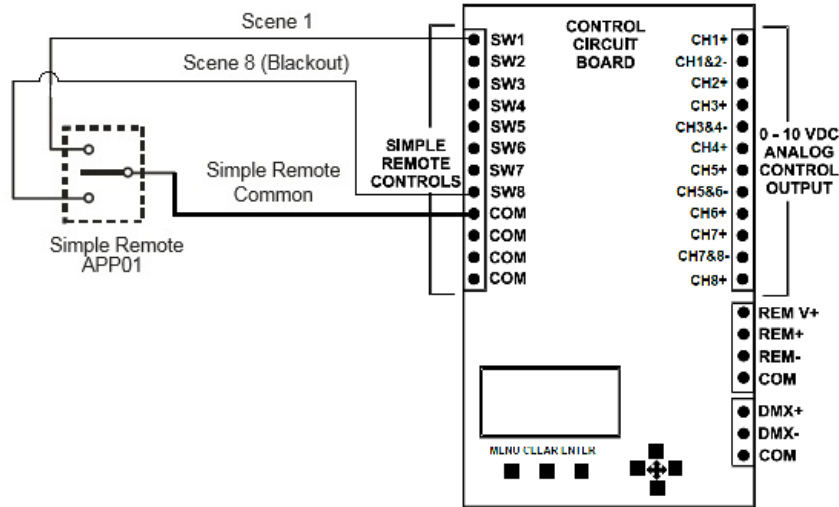
The SIMPLE REMOTE COMMON is routed to the remote switch.

When the switch is operated, the closure brings the common back to the applicable simple remote scene number connection point at the AB0602N terminal strip. Almost any available low voltage wire may be used since these connections are just contact closures.

Multiple simple remotes may be used. Additionally, multiple AB units may be chained to one or more simple remotes.

See the diagram "EXTERNAL CONNECTIONS" and the example below for specific connection information.

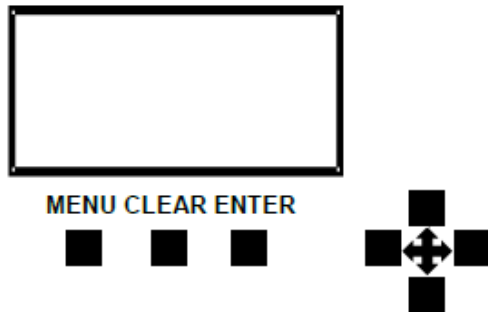
SIMPLE REMOTE CONNECTIONS EXAMPLE USING A LIGHTRONICS APP01



OPERATION

SETUP AND OPERATING CONFIGURATION

All operating functions and settings for the AB0602N are menu controlled using the LCD display and the seven buttons located below it on the control circuit board.



AB0602N UNIT SETUP

The AB0602N must be set up (configured) as part of the installation process. This process is done from the AB0602N front panel using five menus described below.

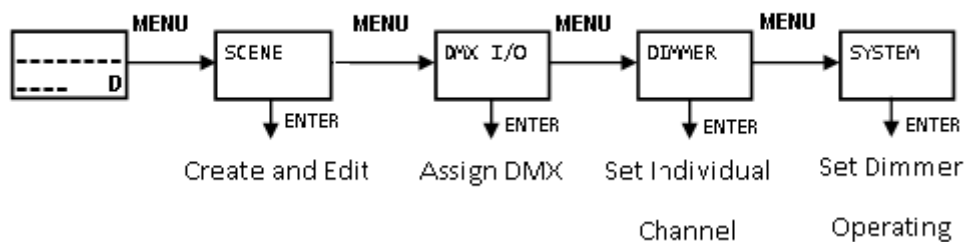
SYSTEM SETUP should be done first. It includes setting the System Mode, System ID, and System Power Setup.

DIMMER SETUP should be done next. It includes Channel Limiting and Dim/Non-Dim selections.

DMX I/O SETUP must be performed if the unit will be used with a DMX controller. This setup assigns (patches) dimmer channels to DMX addresses and can lockout the wall remote stations.

SCENE SETUP must be performed to create scene presets to be activated from the remote control stations.

TOP LEVEL MENUS LAYOUT



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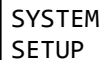
USING THE MENU SYSTEM

The **MENU (NEXT)** button steps through the four display menus. When one of these menus is displayed, you can push the **ENTER** button to access that function. The **CLEAR** button will return the unit to its normal operating mode and cause the display to show the channel level bar graph. The **CLEAR** button DOES NOT clear entered values. The arrow buttons are used to set values for menu selections.


UNIT ADDRESS ASSIGNMENT

When using a single AB0602N system, the unit address MUST BE SET TO 00. One (and only one) of the units in a multiple unit system can be set to address 00. Other units should be assigned in sequential order. This is required for proper smart remote operation.

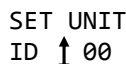
At the AB0602N front panel - push **MENU (NEXT)** until the System Setup appears on the status display.



Push **ENTER**. The System ID Set menu will be shown.



Push **ENTER**. The display shows the unit address.



Set the desired address by using the ↑ and ↓ buttons.

Push **ENTER**. Then push **CLEAR** to return to the normal operating mode.

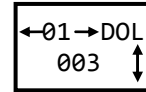
DIMMER CHANNEL SETUP**CHANNEL DROPOUT POINT**

The dropout point can be adjusted to control AC line power to the lighting fixture.

At the AB0602N front panel - push **MENU (NEXT)** until the Dimmer Setup menu appears on the display.



Push **ENTER**. The Channel drop out menu will be shown.



Use the ← and → buttons to select a channel.

Then use the ↑ and ↓ buttons to set its drop out DMX value. Push **ENTER** when finished. The DMX limit range on the menu is between 003 and 255 which corresponds roughly to 1% and 100%.

RESPONSE CURVE SELECTION

The AB0602N menus contain choices for response curve selection. These menus are for other products and DO NOT APPLY to the AB0602N.

They can be accessed and changed but will be ignored.

DMX I/O SETUP

DMX I/O Setup consists of two functions, Dimmer channel assignment and Smart Remote lockout.

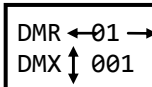
DIMMER CHANNEL ASSIGNMENT

Dimmer channel assignment is used to assign individual AB0602N channels (circuits) to a DMX address. Each dimmer channel (1 - 6) can be patched to any of 512 DMX addresses. Dimmer channels 7-16 will be ignored for the AB0602N.

At the AB0602N front panel - push **MENU (NEXT)** until the DMX I/O Setup menu appears on the display.



Push **ENTER**. The display shows AB0602N dimmer channels on the top line. The currently assigned DMX address is shown on the lower line prefixed by "DMX".



Use the ← and → buttons to select a dimmer channel. Then use the ↑ and ↓ buttons to assign it to a DMX address. Push **ENTER** after each channel assignment.

Push **CLEAR** to exit from the menu. It will not clear your settings.

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DMX LOCKOUT

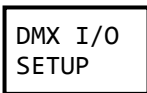
You can set any dimmer channel output to ignore DMX signal inputs from a DMX controller by assigning it to DMX address 000. This feature can be used with house lights or other special lighting. The channel will still respond to smart and simple wall remotes but the DMX input signal will be ignored.

SMART REMOTE LOCKOUT

The Smart Remote Lockout function prevents the AB0602N from responding to the smart remote wall stations when a DMX signal is present. Simple remote stations will still function.

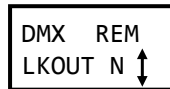
NOTE: When the feature is active, any active scenes will be turned off once DMX is applied.

At the AB0602N front panel - push **MENU (NEXT)** until the DMX I/O Setup menu appears on the display.



DMX I/O
SETUP

Push **ENTER**. Then push **MENU (NEXT)**. The display will show the lockout menu.

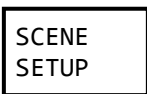


DMX REM
LKOUT N ↑

Use the ↑ and ↓ buttons to select Yes or No. Push **ENTER** when the desired state is shown.

CREATING AND EDITING SCENES

At the AB0602N front panel - push **MENU (NEXT)** until the Scene Setup menu appears on the display.



SCENE
SETUP

Push **ENTER**. The display shows the current scene number.



SCENE
← 000 →

Use the ← and → buttons to select the scene you want to set up and push **ENTER**. Scene 000 controls blackout fade time. Scene 001 is the first user scene.

There are three ways to create or set up a scene:

1. Set each channel intensity manually (EDIT SCENE).

2. Copy another existing scene (COPY SCENE). You can then edit the results.
3. Record a snapshot of the current channel intensities (RECORD LIVE NOW).

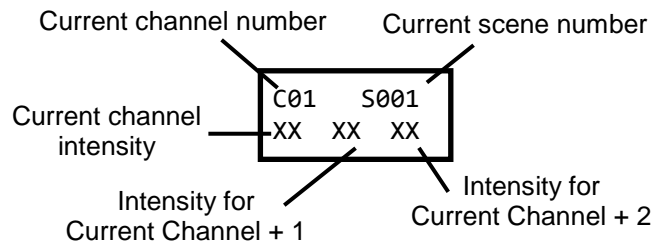
Push **MENU (NEXT)** to select one of the three methods described above. The display will show the corresponding menu.

TO CREATE A SCENE MANUALLY

Push **ENTER** when EDIT SCENE is shown.

The current dimmer channel number is shown on the display upper left. The current scene number (which was selected in the previous step) is shown on the display upper right. The settings for three dimmer channels are shown on the lower display row.

The LEFT channel on the display is the current dimmer channel (the channel which you will set the intensity level for).



Use the ↑ and ↓ buttons to set the channel output intensity. The display shows the intensity setting as a number between 0% and 99%. A 100% setting is indicated by "FL". A "XX" setting means that the channel will be ignored for the current scene. This is useful when stacking of scenes is desired.

Push **ENTER** after each channel level is set.

Use the ← and → buttons to proceed to the next channel to be set up. The lower row of the display will shift to the left. Repeat the channel intensity selection for that channel.

Push **CLEAR** when all the channels for the selected scene are set. This will not clear your scene settings.

To setup another scene - repeat the process above using a different scene selection.

TO COPY A SCENE

Push **ENTER** when COPY SCENE is shown. The

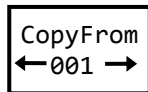
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display will show a menu so you can select an existing scene to copy from.



Use the ← and → buttons to select a scene. Then push **ENTER**. The scene will be copied and you will be transferred to the EDIT SCENE menu where you can further adjust the scene settings if desired.

TO RECORD A LIVE SCENE

A scene may be created by recording the current channel intensity levels.

Push **ENTER** when RECORD LIVE NOW is shown.

You will be transferred to the EDIT SCENE menu with the current settings. You can adjust these settings as shown above. Push **ENTER** to record the scene at these values.

SCENE FADE TIME

A fade time may be set individually for each scene. This is the time elapsed between a scene fully active and the next scene fully active. The factory default fade time is 3 seconds. Keep in mind, this will only be a representative time delay in the relay opening or closing, this is not going to be a fading of the lights on or off.

Fade time may be set between .5 and 99.5 seconds and is set from the SCENE SETUP menu (usually as you set channel intensities for the scene).

1. To set a scene fade time - Access the EDIT SCENE menu for the desired scene.
2. Use the ← and → buttons to move BEYOND the last channel (CHANNEL 16) for the scene. The display will indicate the current fade time for the scene.
3. Use the ↑ and ↓ buttons to set the desired fade time. Then push **ENTER**.
4. Push **CLEAR** to select another scene for fade time set up.

SCENE BLACKOUT FADE TIME

Fade time for the remote stations blackout function is set as an independent function.

The procedure is similar to that for other scenes except the blackout fade time is accessed by selecting SCENE 00 from the SCENE SETUP menu. Factory default fade time is 3 seconds. Blackout fade time may be set between 0.5 and 99.5 seconds. To select a fade time use the ← and → buttons. Push **ENTER** when the desired time is shown.

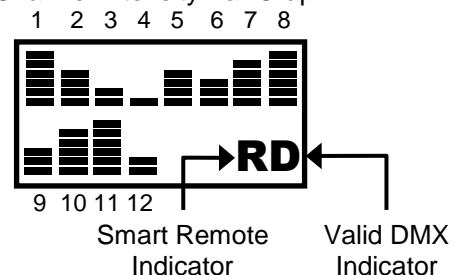
MANUAL OPERATION

Individual dimmer channels may be operated from the AB0602N front panel. This is useful during testing and setup operations. Use the ← and → buttons to select a channel. The associated channel on the bar graph display will flash. Use the ↑ and ↓ buttons to set the lighting intensity for the selected channel.

Manual operation combines with DMX and remote stations settings but does not lock them out.

The **CLEAR** button will turn off all channels when operating manually.

Channel Intensity Bar Graph

**DMX CONTROLLER OPERATION**

If a DMX signal is present when the AB0602N is turned on, it will automatically respond to it.

A "D" will be shown in the lower right corner of the LCD display if a valid DMX signal is present. Channel intensity levels will be shown on the bar graph display.

If there is a loss of DMX to the AB0602, the relay position and the 0-10V output will remain at the current setting until a new control signal is received.

SMART REMOTES OPERATION (LitNet)

The AB0602N can store 100 preset scenes which may be activated by smart remotes. See the section "Creating and Editing Scenes" for information about programming the scenes. These scenes are grouped according to which type of smart remote can access them. Scenes 1 - 48 are reserved for push button and IR remotes. Scenes 51 - 99 are used with fader remotes. If multiple LitNet host units are connected to a smart remote, then each LitNet host will activate its

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own corresponding scene.

For a single dimmer system, when activity on the smart remote bus is sensed by the AB0602N, an 'R' will be displayed on the screen. If multiple dimmers are connected together, the AB0602N assigned to Unit ID 00 will indicate 'R' only when there is activity from a smart remote station. AB0602N dimmers with a Unit ID of 01 or higher show an 'R' continuously as long as they have communication with the Unit ID 00 dimmer.

Both, push button and fader remotes may be connected to the same smart remote bus.

BUTTON AND IR SMART REMOTES OPERATION

These remotes activate individual scenes within a block of scenes which have been stored in the AB0602N. Generally, users only have one scene on at a time. However, scenes can be stacked with the use of 'XX' as a setting for channels of each scene that will have a value assigned in other scenes being used together.

The remotes are set to specific blocks of scenes to be activated by the remote. You can select which block of scenes will be activated by the remote when ordering the remote or by contacting Lightronics technical support to reprogram. For instance, an AC1109 can be set to control scenes 1-8, 9-16, or other blocks of eight consecutive scenes. There are a total of six scene blocks available covering scenes 1 thru 48. Multiple remotes may be, but are not required to be, set to the same block of scenes.

The scene activation buttons will toggle. In other words, a scene will go OFF if you push its button while the scene is active.

The OFF button invokes a BLACKOUT for all scenes associated with that remote's scene block ID. Refer to the smart remote manual for specific information on scene addressing.

FADER SMART REMOTES OPERATION

These remotes activate specific individual scenes which have been stored in the AB0602N on a "pile on" basis. In other words, multiple scenes will merge together in a "greatest of" fashion. This means the intensity of any given channel will go to the highest level of all the scenes which use it. If multiple fader stations are in use in a system, the AB0602N will follow a last takes precedence protocol for common scenes between fader stations.

Fader remotes are scene block addressable so you can select which scenes it activates. There are three scene blocks available. Each block includes 16 scenes. The first block starts at scene 51. This refers to the lowest numbered fader on the remote. The other faders on that remote will use the next consecutively numbered scenes (52, 53, 54, etc.). The second and third scene blocks begin at scene 67 and 83 respectively. Multiple remotes of this type may be, but are not required to be, set to the same block of scenes.

The OFF button invokes a BLACKOUT for all scenes associated with that remote's scene block ID. Refer to the fader smart remote owner manual for specific information on setting scene blocks.

SIMPLE REMOTES OPERATION

Scenes 1 - 7 (stored in the AB0602N) may be accessed by simple remotes (SW1-SW7). A BLACKOUT FUNCTION may also be accessed (SW8). A simple remote is any switch which can provide a momentary contact closure that can be applied to a specific pin on the AB062D.

SIMPLE REMOTE UNIT INPUTS terminal strip. Lightronics currently offers an APP01 simple remote.

The APP01 is a "center off, single pole, double throw, momentary contact, toggle switch." It can be used as a simple entrance switch to activate a scene when someone enters/exits an area. Alternative devices such as relays, timers, and motion sensors can be connected to AB0602N dimmers as simple remotes. These are available from a variety of manufacturers.

The momentary completion of a circuit path between the simple common terminal and one of the scene terminals will activate the respective scene.

MAINTENANCE AND REPAIR

OWNER MAINTENANCE

There are no user serviceable parts inside the unit.

INTERNAL FUSE

WARNING



The AB0602N has a 1/2 amp, 250V, Type ABC, fast acting fuse on the inside of the cabinet. It provides

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protection only for the internal electronic control circuitry. It may be replaced ONLY by a fuse of identical type and size.

Contact a qualified electrical maintenance person if you suspect this fuse has blown.

HIGH VOLTAGE CIRCUITRY IS EXPOSED WHEN THE CABINET COVER IS REMOVED. DO NOT ALLOW THE UNIT TO OPERATE OR HAVE POWER APPLIED TO IT WHILE THE COVER IS REMOVED.

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.

Service by other than Lightronics authorized agents may void your warranty.

TROUBLESHOOTING

Note: Annotate any current settings prior to making changes.

Single/Multiple channels not dimming properly.

1. Check Dimmer Setup - Channel Mode.

No power on individual channels.

1. Check source of power to the affected channel.
2. Check Dimmer Setup - Channel Dropout Point.
3. Use Manual Operation to determine if this is actually a DMX/remote control issue.

No response to DMX.

1. Confirm there is a 'D' on the display screen. If there is no 'D' on the display, check other DMX equipment in the system.
2. Check DMX I/O Setup - Dimmer Channel Assignment.
4. Verify DMX settings in the DMX controller.

No Smart Remote operation.

1. Check System Mode - System ID
2. Check DMX I/O Setup - DMX Remote Lockout
3. Verify Scene Setup programmed for desired operation.

OPERATING AND MAINTENANCE ASSISTANCE

If service is required, contact the dealer from whom you purchased the equipment or contact:

Lightronics, Service Department
509 Central Drive
Virginia Beach, VA 23454
TEL 757 486 3588

Lightronics recommends you record the serial number of your unit for future reference. This is likely located on the right side of the AB0602N cabinet on a small sticker that has "AB0602" or "AB0302" and a series of numbers below it on the same sticker. This is typically in the format 1234-56789.

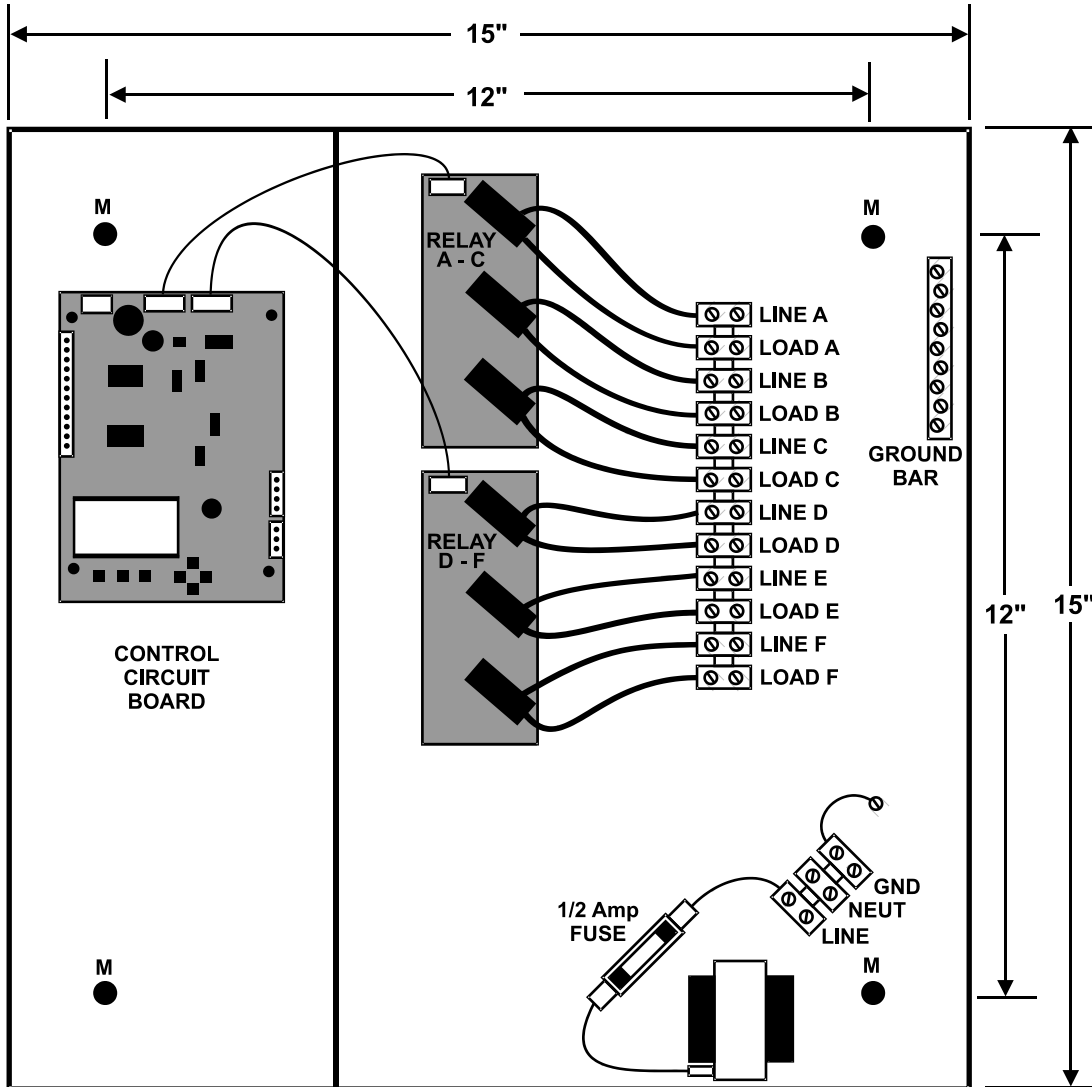
SERIAL NUMBER _____

WARRANTY INFORMATION AND REGISTRATION – CLICK LINK BELOW

www.lightronics.com/warranty.html

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DIMENSIONS AND LOCATIONS



Chassis depth is 3.25".

M = Mounting Holes: 0.255" DIAM. Will accept a 1/4 - 20 bolt.

Four dual knockouts are provided on each side and on the top and bottom.