LIGHTRONICS

AB0602D

ARCHITECTURAL LED/BALLAST CONTROLLER

Version 0.2

01/17/2023

www.lightronics.com

Lightronics Inc. 509 Central Drive Virginia Beach, VA 234354 757 486 3588

DESCRIPTION AND FEATURES

The AB0602D is a 6 circuit, 2400 Watts per circuit ballast controller intended for dimmable fluorescent and LED fixtures which use a switched 120VAC (or optional 277VAC) hot feed and a 0 - 10 VDC control signal for dimming control. The AB0602D is compatible with both sinking and sourcing 0-10V fixtures. A three circuit version (AB0302D) is also available and operates identically. The AB0602D can also be used as a conventional relay pack by using only the switched hot feed controls without the 0 - 10VDC dimming control signal.

EXTERNAL CONTROLS

The AB0602D can communicate with remotely located control equipment in several ways.

A DMX512 bus is provided so the unit may be used with a DMX lighting controller. The AB0602D is fully patchable with respect to the DMX bus.

The AB0602D 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 AB0602D. 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 AB0602D 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 AB0602D.

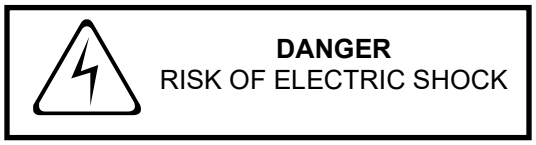
INSTALLATION

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 AB0602D 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. The DIMENSIONS AND LOCATIONS diagram on page 7 has more information about mounting the unit.

POWER REQUIREMENTS

TURN OFF ALL POWER SOURCES BEFORE MAKING CONNECTIONS

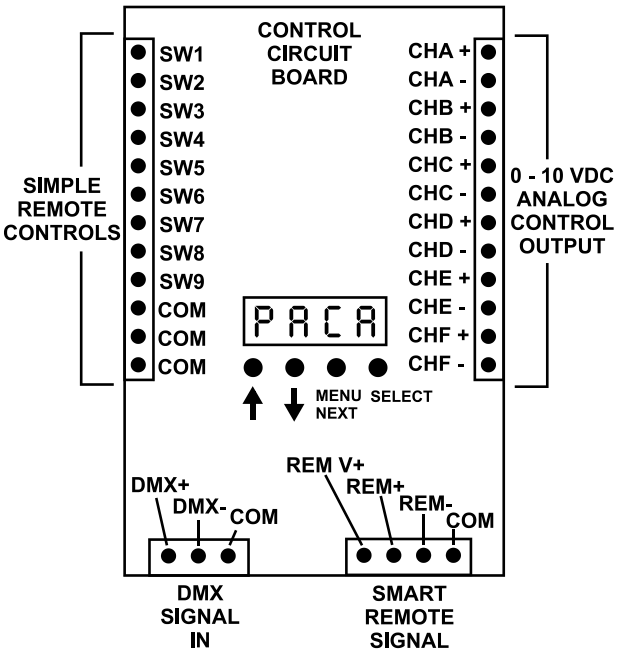


AC POWER CONNECTIONS

The internal AB0602D 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 120 VAC 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 AB0602D. A grounding bar is also provided. The diagram DIMENSIONS AND LOCATIONS on page 7 shows the connection details.

CONTROL AND DIMMING CONNECTIONS



0-10VDC DIMMING CONTROL CONNECTIONS

Connectors with screw down terminals are provided on the control circuit board for the 0-10VDC dimming output signals. Specific wiring connection point information is shown in the diagram CONTROL AND DIMMING CONNECTIONS.

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

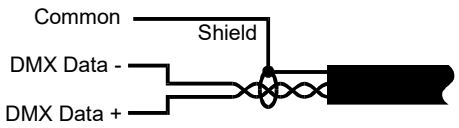
DMX control signals to the AB0602D should be transmitted over a shielded, twisted pair, 22-24 gauge, low capacitance cable.

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 AB0602D 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 AB0602D. There are multiple models of each type. They all connect to a common RS-485 bus (LitNet) which is controlled by the AB0602D. 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 6)

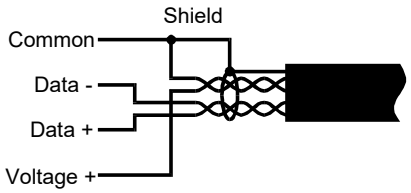
LitNet signals are transmitted over a shielded, two twisted pair, 22-24 gauge, low capacitance cable. One pair carries the LitNet data signal and the other pair provides low voltage power and common to the remotes.

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 AB0602D BEFORE MAKING OR CHANGING SMART REMOTE CONNECTIONS.

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



SIMPLE REMOTE CONNECTIONS

CAUTION
REMOVE ALL POWER FROM THE AB0602D BEFORE MAKING OR CHANGING SIMPLE REMOTE CONNECTIONS.

Scenes 1 - 8 (stored in the AB0602D) may also be accessed by simple remotes. A BLACKOUT function may also be accessed. A simple remote is any switch that can provide a momentary contact closure which can be applied to a specific pin on the AB0602D simple remote controls connector.

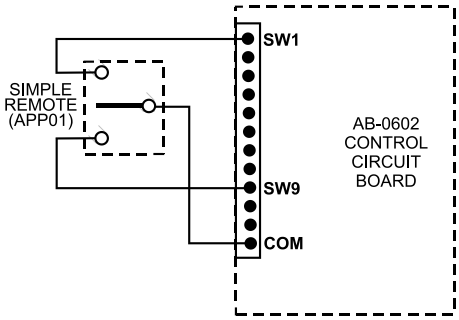
A SIMPLE REMOTE COMMON is routed to a remote switch. When a switch is operated the closure brings the common back to the applicable pin (SW1 - SW8) on the simple remote controls connector in the AB0602D. Contact SW9 is for BLACKOUT. The three COM (common) pins are electrically tied together.

Almost any available low voltage wire may be used since these connections are just contact closures.

Multiple simple remotes may be used. Additionally multiple AB0602D units may be chained to one or more simple remotes.

An example simple remote switch operation using a Lightronics APP01 switch is shown below. It can activate scene 1 and invoke a blackout.

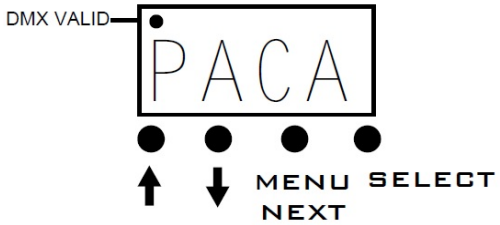
SIMPLE REMOTE
CONNECTION EXAMPLE



OPERATION

SETUP AND OPERATING CONFIGURATION

All operating functions and settings for the AB0602D are menu controlled using the LED display and the 4 buttons located below it on the control circuit board.



FACTORY DEFAULT CONFIGURATION

The AB0602D is supplied with a factory default setup configuration. The unit may be reset to this condition by keeping the SELECT button held down while power is applied. The display briefly shows FACT while the reset is being performed. The AB0602D is set as follows when a reset is performed:

1. The DMX pack address (PACA) will be set to DMX address 1 (P001).
2. Softpatch is set to DMX addresses 1 - 6
3. Dropout DMX trip points are set to 35 (14%).
4. All channels curves are set to LED1.
5. The architectural ID (ARCU) is set to 00.

DISPLAY STATUS INDICATORS

The LED display shows a dot near the upper left corner when a valid DMX signal is being received.

MENU ACCESS AND USE

Hold the MENU/NEXT button down for approximately 5 seconds to gain access to the complete menu system. If there is no button activity for 1 minute while inside the menus, then the unit will revert back to the normal display (PACA).

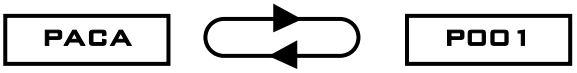
To exit from anywhere in the menus - Hold down MENU/NEXT for approximately 5 seconds. The unit will revert back to the normal display (PACA).

A menu/display operation flow diagram is provided at the back of this manual.

QUICK DMX ADDRESSING

The AB0602D has a quick DMX address setup which enables you to set the starting address of the pack (the address for channel "A") without accessing the rest of the menu system. When used, the remaining 5 channels are set to the next consecutive addresses.

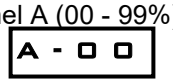
During normal operation, the LED display toggles back and forth between PACA and the current pack address such as P001. Use the ↑↓ buttons to set different pack addresses. Push SELECT to save the setting when done.



If you set the pack address to P000, then the unit will run in soft patch mode. In this mode you can set ANY channel (A-F) of the unit to ANY DMX address (000-512) by using the dimmer setup (DSET) menus. See **CHANNEL ADDRESSING** for details.

CHANNEL TEST / LOCAL OPERATION

You can test the operation of each dimmer channel by pushing MENU/NEXT. The display will show the intensity of channel A (00 - 99%) shown below.



Use ↑↓ to adjust the intensity to the desired level. Push MENU/NEXT to advance to the next channel (Channel B). The dimmer will return to its normal display when you go past the last channel.

The channel levels will remain when you set them.

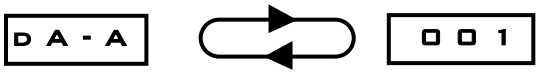
The DMX controller can turn off the circuits by raising the channel to full then back down. A useful feature of the channel test mode is that the display shows the current intensity level of the channel regardless of the control signal source.

CHANNEL ADDRESSING (SOFTPATCHING)

To invoke the softpatching settings, you must first set the pack address (PACA) to P000. You can set channel DMX softpatch addresses at any time but they will be ignored if PACA isn't at P000.

TO SET CHANNEL SOFTPATCH ADDRESSES

Push SELECT at the DSET menu. The display will toggle between the DA-A and the current DMX address assignment number.



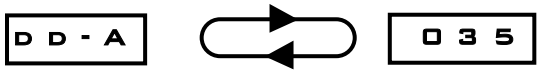
Use ↑↓ to set the desired DMX address (000 - 512) for the channel. Push SELECT to save the change.

Push MENU/NEXT to advance to the next channel or hold down MENU/NEXT for approximately 5 seconds to exit from the menus.

CHANNEL DROPOUT POINT

Many fixtures do not operate reliably at very low levels of intensity. The AB0602D can cut off a circuit when a low level threshold is reached to prevent flickering and other undesired effects. The dropout point can be set for each of the 6 circuits.

Push SELECT at the DSET menu. Then push MENU/NEXT until the display toggles between DD-A and the current dropout value setting. The range is from 5 to 255. 5 is the lowest.



Use ↑↓ to set the desired dropout value for that channel. Push SELECT to save the change.

Push MENU/NEXT to advance to the next channel or hold down MENU/NEXT for approximately 5 seconds to exit from the menus.

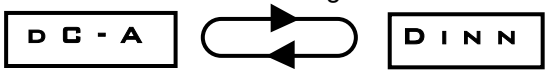
RESPONSE CURVE SELECTION

Each AB0602D channel has a selection of response curves to match a variety of lamp and fixture types:

DIM: (DINN) Used for incandescent/LED lamps.
LINEAR: (LINR) Used for some CFL fixtures.
LED1: (LED1) Used for many LED fixtures.
FLUORESCENT: (FLUO) for dimmable fluorescent ballasts.

The menu that is used to select curves includes four additional options allocated for future expansion. They are LED2, LED3, CUR6, AND CUR7.

Push SELECT at the DSET menu. Then push MENU/NEXT until the display toggles between DC-A and the current curve setting.



Use ↑↓ to set the desired curve for that channel. Push SELECT to save the change.

Push MENU/NEXT to move to another channel.

WALL STATION REMOTE CONTROL (LitNet)

The AB0602D can be controlled using Lightronics smart remote wall stations. This is done using the LitNet wiring bus to connect the units. Multiple AB0602D's and/or multiple smart remote wall stations may be connected together.

The AB0602D can store 99 preset scenes which can be activated by the smart remotes. These scenes are grouped according to which type of smart remote can use them. Scenes 1 - 50 are reserved for push button and IR remotes. Scenes 51 - 99 are used with fader remotes. Both push button and fader remotes may be connected to the LitNet bus. If multiple AB0602D units are connected to a remote then each one will activate its own stored scene.

BUTTON AND IR SMART REMOTES

These remotes activate individual scenes which have been stored in the AB0602D. Scenes will activate on an "exclusive" basis (only one scene may be on at a time). Examples of current button remotes are the AC1009, AK1005, and AI1001.

These remotes are set to control scenes starting at scene number one. It is possible to order a remote to use other 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 system wide BLACKOUT (Turns off all scenes, regardless of their source).

FADER SMART REMOTES

These units use individual scenes which have been stored in the AB0602D on a "pile on" basis. In other words, multiple scenes will merge together in a "greatest of" fashion. This means that the intensity of any given channel will go to the highest level of all the scenes which use it. Current fader remotes are the AF2104, AF3107 and AF5113.

All fader remotes interact with scenes beginning at scene 51. This refers to the lowest numbered fader on the remote. Other faders on that remote use the next consecutively numbered scenes (52, 53, etc.). It is possible to order a fader remote to use other scenes blocks above 51.

UNIT ID ADDRESS ASSIGNMENT

LitNet must have a single controlling (primary) host on it. Assigning the primary unit on the bus is accomplished by setting unit ID addresses.

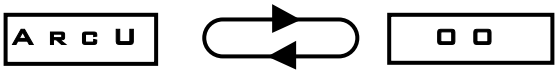
When using only one AB0602D with smart remote control, the unit must be set to UNIT ADDRESS 00. If multiple Litnet hosts are used, then one of them (and ONLY one of them) must be set to UNIT ADDRESS 00. The remaining units may be set to any other unit address. It is recommended that they be set to consecutive numbers starting at 01.

TO SET THE UNIT ID ADDRESS

Hold **MENU/NEXT** for approximately 5 seconds to access the menus. The display will show **dSET**.

Push **MENU/NEXT** until the display shows **SYSt**. Push **SELECT**.

Push **MENU/NEXT** until the display toggles between **ArCU** and the current unit address.



Use ↑↓ to change the unit address number. Then push **SELECT** to save the selection.

Hold **MENU/NEXT** for approximately 5 seconds to exit from the menus.

CREATING AND SAVING SCENES

Scenes to be activated by an AB0602D must first be created and stored (recorded) in the unit. Scene recording stores the current intensity levels of all six channels in the unit regardless of how they were set. Intensity levels for a scene can be set using only the dimmer or by operating the unit with a DMX controller. Each scene created has an associated user settable fade time.

A universal BLACKOUT scene (all channels OFF) is also available. It appears as scene number 00 in the menus. The blackout scene has a user settable fade time.

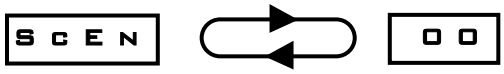
TO RECORD A SCENE

Set the intensity for each channel in the unit to the desired brightness. If a channel is not to be set for a particular scene, manually select a setting of '--' below the 00 intensity value of each channel.

Hold **MENU/NEXT** for approximately 5 seconds to access the menus. The display will show **dSET**.

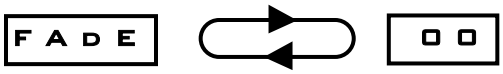
Push **MENU/NEXT** until the display shows **SYSt**. Push **SELECT**. The display will toggle between **CnFG** and the currently selected control source.

Push **MENU/NEXT** until the display toggles between **ScEn** and the **00** (scene 00).



Use ↑↓ to change the scene number. Then push **SELECT** to record the intensity levels.

The menu will advance to allow you to set the fade time for that scene. The display will toggle between **FAdE** and the current fade time (seconds).



Use ↑↓ to change the time. Then push **SELECT** to save the setting.

The display will revert to the scene number selection menu. If you are operating with a DMX controller, you can change the channel levels and record to another scene. If operating in local mode, you must exit the menus to set new channel intensities.

Hold **MENU/NEXT** for approximately 5 seconds to exit from the menus.

MAINTENANCE AND REPAIR

DANGER
RISK OF FIRE

DANGER
RISK OF ELECTRIC SHOCK

FUSE REPLACEMENT

REMOVE ALL POWER TO THE UNIT BEFORE REPLACING THE FUSE

The only user serviceable part is a 1 1/4" X 1/4" fuse. Replace the fuse ONLY with a 1/2 Amp, 250VAC, fast blow fuse. The diagram DIMENSIONS AND LOCATIONS shows the fuse location.

INTERNAL SERVICE

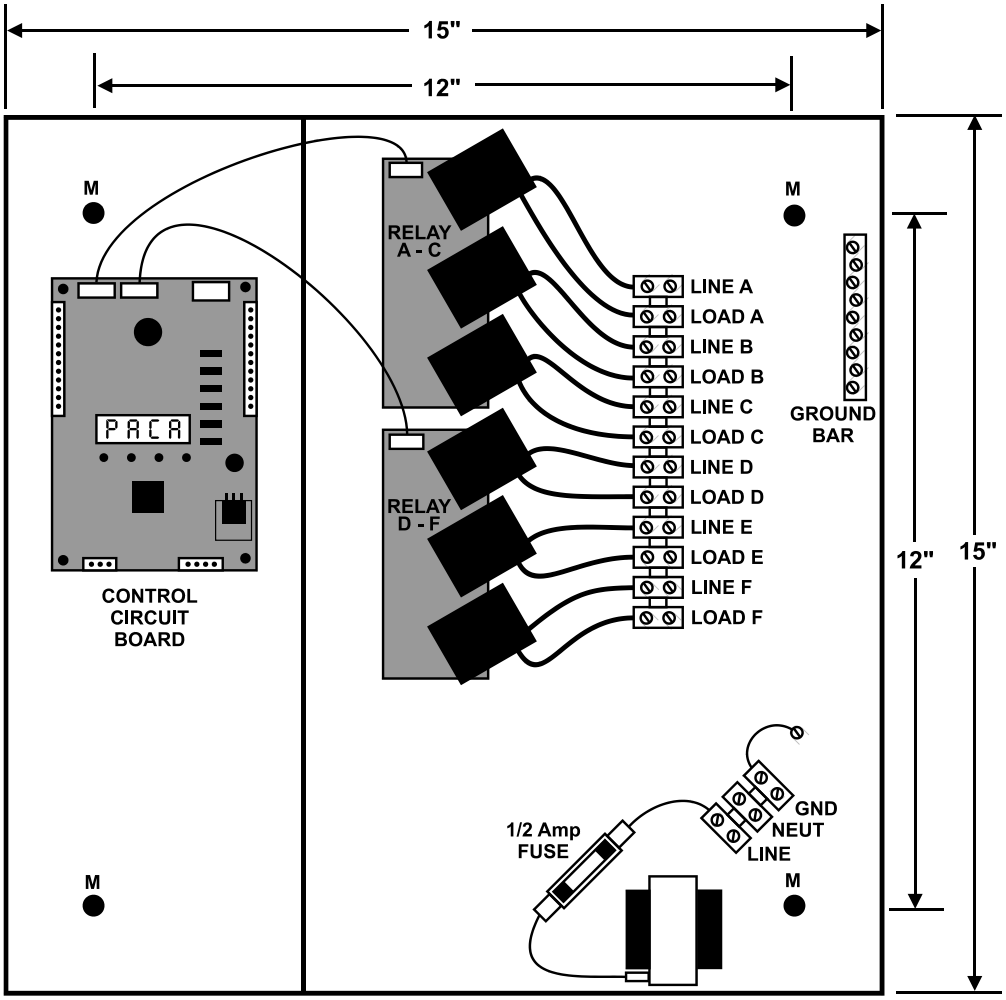
Internal service on the unit by other than Lightronics authorized agents will void the warranty.

If service is required, contact the dealer from whom you purchased the AB0602D, or Lightronics Service Department, 509 Central Drive, Virginia Beach, VA 23454. Tel: 757 486 3588.

WARRANTY INFORMATION AND REGISTRATION – CLICK LINK BELOW

www.lightronics.com/warranty.html

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.

MENU / DISPLAY OPERATION