LIGHTRONICS INC

XC-40

COMPACT PORTABLE DIMMER

OWNERS MANUAL

Revision 0.3

02/21/2008

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XC-40 UNIT DESCRIPTION

The XC-40 is a four circuit compact dimmer with a load capacity of 600 Watts per circuit. Each circuit is protected by a 5 Amp fuse. It can be controlled in several ways - the most common being DMX-512. Other control modes are also provided for stand alone operations. These include individual channel control and chaser functions. Individual circuits may be operated as non-dim (relay) circuits. Individual circuits may be set for one of several response curves and may be limited to less than full intensity. In addition to full soft patch capability there is a quick pack address function which enables rapid setup.

The XC-40 can optionally be provided with a wireless DMX receiver.

INSTALLATION

POWER REQUIREMENTS

The XC-40 operates from a 120VAC, 20 Amp service. The feed must include a NEUTRAL and a safety GROUND. The unit is provided with a power cord stub containing Edison plugs for this purpose.

LOCATION AND MOUNTING

Locate the unit in a well ventilated area away from moisture and heat. The unit should be operated in free air to ensure good air flow around all sides. Do not block any of the vent holes.

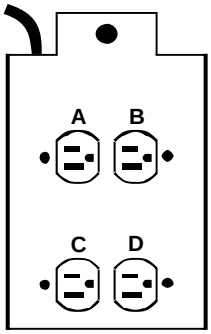
THE XC-40 COMPACT DIMMER PACK IS INTENDED FOR **INDOOR USE ONLY.**

Two 1/2" diam. holes are provided at the top of the unit for a lighting bar pipe clamp and a safety cable.

LOADS AND LOAD CONNECTIONS

Lighting fixtures connect to the 4 edsion outlets on one side of the unit. They are designated as "A" through "D". There is one load connections per circuit. Each circuits is referred to as a "channel". A diagram is provided on the unit which identifies each channel.

LIGHTING LOAD CONNECTIONS

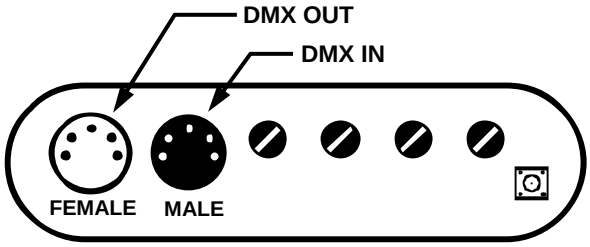


Each XC-40 channel has a 600 Watt MAXIMUM rating and is protected by a 5 Amp fuse. 5 Amps equates to 600 Watts at 120VAC. If you operate a channel at 600 Watts then you are very close to blowing its fuse. This will occur if AC line voltages are high or you have power surges. Other conditions which may cause the fuse to blow include turning a cold lamp quickly on to full intensity.

A practical working load is 500 Watts per channel.

DMX CONTROL SIGNAL CONNECTIONS

DMX control is connected via the male 5 pin XLR connector located in the end of the dimmer. A female 5 pin XLR is also provided so you can chain the connection to other dimmers or other DMX devices. Wiring information for the XLR connectors is shown below.

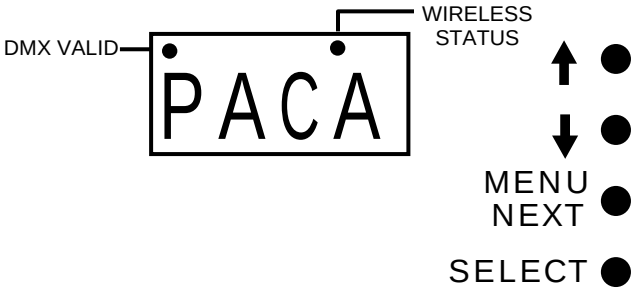


XLR PIN #	SIGNAL DESCRIPTION
1	DMX Common
2	DMX Data -
3	DMX Data +
4	Not Used
5	Not Used

OPERATION

SETUP AND OPERATING CONFIGURATION

All operating functions and settings for the XC-40 are menu controlled using the LED Display and the 4 buttons located near it on the back surface of the unit.



FACTORY DEFAULT CONFIGURATION

The XC-40 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 XC-40 is set as follows when a reset is performed:

1. The unit is set for DMX (5Pin) operation.
2. The DMX pack address (PACA) will be set to address 1 (P001).
3. Softpatch is set to DMX addresses 1 - 4
4. All channels curves are set for incandescent dimming (Dim).
5. Channel limiting is turned off (255).
6. Chase functions are set as follows:
   Pattern #: 01
   Rate: 004 (1 sec. per step)
   Fade: 050 (%)
   Brightness: 100 (%)
7. The architectural Unit ID is set to 01
8. Power type is set to AUTO

DISPLAY STATUS INDICATORS

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

If equipped with the wireless option, another dot at the top of the display indicates the status of an active wireless link.

MENU ACCESS AND USE

Hold the MENU/NEXT button down for aprox. 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).

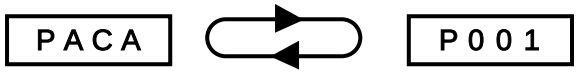
To exit from anywhere in the menus - Hold down MENU/NEXT for aprox. 5 seconds. The unit will revert back to the normal display (PACA).

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

QUICK PACK ADDRESSING

The XC-40 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 this is used, the remaining 3 channels ("B", "C", and "D") are set to the next consecutive addresses.

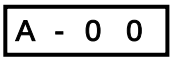
During normal operation the LED display toggles back and forth between PACA and the current pack address such as P001. Use the ↑ and ↓ buttons to set different pack address. Push SELECT to save the setting when done.



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 of the pack (A - D) to ANY DMX address (000-512) by using the dimmer setup (dSEt) menus. See **CHANNEL ADDRESSING** for details.

CHANNEL TEST

You can test the operation of each dimmer channel by pushing MENU/NEXT. The display will show the intensity of channel A (00 - 99%) as 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 control console can turn off the test setting by raising the applicable channel fader to full then back down. The channel test feature operates much like the LOCAL mode. The difference is that local mode LOCKS OUT all other control sources.

A usefull feature of the channel test mode is that the display shows the current intensity level of the channel regardless of the control signal source.

DIMMER SETUP

The dimmer setup menu (dSEt) enables you to set several parameters which control how each individual channel will operate. You can set a DMX address, set a maximum intensity limit, and set a response curve.

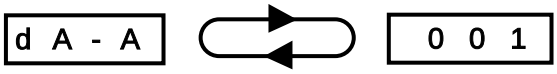
Hold MENU/NEXT for aprox. 5 sec. to access the dimmer setup menu. The display will show dSET.

CHANNEL ADDRESSING (SOFTPATCHING)

In order to invoke the softpatching settings you must first set the pack address (PACA) to P000. You can set the channel DMX softpatch addresses at any time but they will be ignored if PACA is not 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 that channel. Push SELECT to save the change.

Push MENU/NEXT move to the next channel.

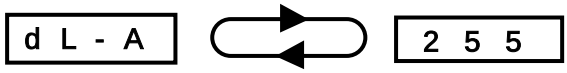
CHANNEL LIMITING

Each channel in the XC-40 can be set to limit the maximum power applied to a channel. This feature can lengthen the life of lamps and prevent premature failures from power surges and high line voltage. The following table gives the approximate XC-40 menu setting for some typical limit percentage settings.

% MAX. Intensity	Dimmer Limit Setting
100	255
90	230
75	190
50	130
25	65
10	25

Note that limiting reduces the voltage applied to the channel. The perceived light from the fixture will not necessarily appear to track the limit setting in a linear fashion.

Push SELECT at the dSEt menu. Then push MENU/NEXT until the display toggles between dL-A and the actual limit value 010 - 255.



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

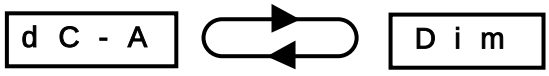
Push MENU/NEXT to advance to the next channel.

RESPONSE CURVE SELECTION

The XC-40 provides a selection of five response curves to select from to accommodate a variety of lamp and fixture types:

DIM: Used for normal incandescent lamps.
RELAY: Used for devices which cannot be dimmed or for ON/OFF only control.
LED1 / LED2: Two curve settings for LED fixtures.
FLUORESCENT: For dimmable fluorescent ballasts which can be used with a conventional dimmer. These are sometimes referred to generically as "two wire" ballasts.

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 advance to the next channel or hold down MENU/NEXT for aprox. 5 seconds to. exit back to the display (P A C A).

CHASE OPERATION

The XC-40 can run one of 16 chase patterns which can be selected from the C H A S menus. The rate, fade time, and brightness of these patterns may be controlled by the user. These settings apply to ALL chase patterns.

The s Y s t , C n F G menu, which selects the dimmer control source, must be set to c h A S in order to run chase patterns.

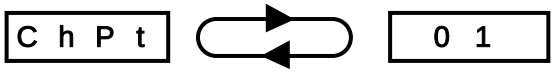
SELECTING CHASE PATTERN 00 TURNS OFF CHASE OPERATIONS.

SETTING CHASE PATTERNS AND PARAMETERS

Hold MENU/NEXT for aprox. 5 seconds to access the menus. The display will show d S E t.

CHASE PATTERN SELECTION

Push MENU/NEXT until the display shows C H A S.
Push SELECT. The display will toggle between C h P t and the currently selected chase pattern number.



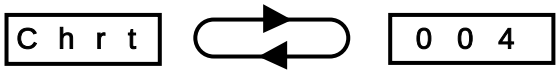
Use ↑↓ to set the desired pattern number. Push SELECT to save the change.

Push MENU/NEXT to move to the next chase parameter (chase rate).

CHASE RATE

The chase rate is actually set by selecting a step duration time. This time is shown on the display in 1/4 sec. increments. Therefore a 1 chase step per second rate will show as setting of 4 on the display.

The display will toggle between C h r t and the current chase rate.

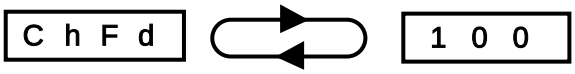


Use ↑ and ↓ to set the desired chase rate. Push SELECT to save the change.

Push MENU/NEXT to advance to the next chase parameter (Chase Fade).

CHASE FADE

The display will toggle between C h F d and the current fade setting (% of the step time). Times of 0, 25,50 and 100% are available.

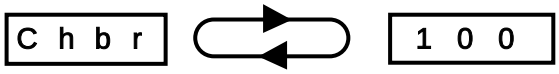


Use ↑↓ to set the desired fade time. Push SELECT to save the change.

Push MENU/NEXT move to the next chase parameter (chase brightness).

CHASE BRIGHTNESS

The display will toggle between C h b r and the current chase brightness level (0 = 100%).



Use ↑↓ to set the desired brightness. Push SELECT to save the change.

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

SYSTEM SETUP

The system setup menu (S Y S t) controls how the overall dimmer pack is configured. The S Y S t menu has 5 submenus: C n F G , L o g - , S c E n , A r c U , a n d P w r .

CONTROL SOURCE SELECTION (CnFG)

The C n F G menu selects what source will control the dimmer pack. The 6 choices are:

1. Normal wired DMX (5 Pin)
2. Stand alone chase (c h A S)
3. Local (L o c L)
4. Architectural Station (A r c h)
5. RS485 (r 4 8 5)
6. Wireless DMX (A n t d)

DMX: When selected, the dimmer pack responds to USITT DMX-512 signals received on the male 5 pin XLR connector in one end of the unit. The female 5 pin XLR connector is used to pass the DMX signal on to another DMX dimmer pack.

STAND ALONE CHASE: This menu enables chaser operation. The dimmer will ignore other signal sources when chaser operation is active.

LOCAL: Local control enables you to operate the XC-40 channels manually without an external controller. You can set a static scene and leave the unit as is. This may be useful for a store display or other situation where a continuous lighting scene is needed. The dimmer will IGNORE OTHER CONTROL SIGNAL SOURCES when local operation is active.

See the section for CHANNEL TEST for more about operating channels locally.

ARCH: Operation from Lightronics architectural smart remote stations.

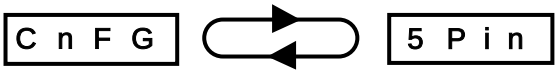
RS-485: Operation from RS-485 devices is not currently available.

WIRELESS DMX: The XC-40 wireless option allows the unit to be run from a console or other controller which transmits DMX over a wireless link.

SELECTING A CONTROL SOURCE

Hold MENU/NEXT for aprox. 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.



Use ↑↓ to select the desired source. Push SELECT to save the change.

Push MENU/NEXT to advance to the next system setup menu display.

OTHER SYSTEM SUB MENUS

The wireless logoff menu (Log-) will function only if the optional wireless hardware is installed in the XC-40. Otherwise it is ignored.

XC-40 WIRELESS OPTION

DESCRIPTION

The XC-40 dimmer can be supplied with additional components which enable it to use a wireless DMX control signal. The option includes an antenna.

When operated as a wireless unit the XC-40 receives the same information it would get using a cable connected to a DMX lighting console. For wireless operation the XC-40 can be used only with a console which has an compatible wireless DMX transmitter.

The wireless system uses the 2.45 GHz band and operates at low power (< 100mW). The operating range is aproximately 1400 ft. indoors and about 4000 ft. for outdoor operation. This range could vary significantly depending on the surrounding conditions.

A link between an XC-40 dimmer and a specific single console is invoked to enable wireless operation. The linking operation is performed at the console. Once linked, the XC-40 can operate as wireless ONLY with that console. The link is retained even when the dimmer and/or console are powered off.

The XC-40 will not link to any other console until the established link it released. The link can be released either at the XC-40 or at the transmitting console.

INSTALLATION AND SETUP

There are only three steps to perform to operate the XC-40 in the wireless mode.

1. Install the supplied antenna. The antenna threads onto a SMA connector located in the end of the unit. Do not overtighten it or wrench it down. It can be rotated into a convenient position when installed.

2. Link the unit to a compatible console. This is done at the console.

3. Set the control source to wireless (Antd). This is done using the SYSt, CnFG menu on the XC-40 dimmer.

LINKING TO A WIRELESS EQUIPPED CONSOLE

A link between an XC-40 dimmer and console is performed by using a button on the console. This causes the console to search out and link all wireless dimmers within its range **which are not already linked to another wireless control source**. The wireless link LED on the console is ON when the wireless transmitter section is getting a DMX signal from the main console circuits.

The XC-40 has two indicators which show wireless status. One is a green LED in the end of the unit near the antenna. The other is a dot in the main display. These indicators function identically as follows:

Not linked to a console - indicators OFF.
Linked but not receiving a signal - indicators FLASH.
Link process in progress - indicators FLASH FAST
Linked and receiving a signal - indicators ON

Before linking to a console you should perform a link release at the XC-40. It may be linked to a different console. If this is the case then the console you are going to use CANNOT release it.

TO LINK AN XC-40 TO A CONSOLE

Push (DO NOT HOLD DOWN) the wireless link button on the console. The green wireless link LED on the console and the dimmer indicators will flash. After aprox. 10 seconds the console LED will revert to ON but the dimmer indicators will continue to flash at a rapid rate for several more seconds until a solid link is established. The XC-40 indicators will be ON when a link is fully established.

The XC-40 can link can even if is not in the wireless mode but since the unit can operate in several other modes it will not respond to the wireless commands unless switched into wireless operation (Antd) from the display SYSt, CnFG menu.

The XC-40 factory reset function does not log the unit off but it does take it out of wireless mode.

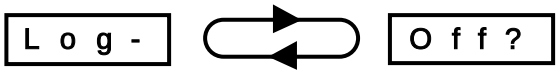
UNLINKING AN XC-40 FROM A CONSOLE

An unlink operation can be done either at the dimmer or at the console. If done from the dimmer then only that specific XC-40 will be released from the link and it can then be linked by another compatible wireless controller or relinked to the same one. If the unlink operation is done at the console then ALL dimmers linked to it and in receiving range will be released.

TO RELEASE THE LINK AT THE XC-40

The XC-40 link can be released regardless of whether or not it is in the wireless operation mode (Antd).

1. Hold down MENU/NEXT for about 5 seconds to access the menus. The display will show dSEt.
2. Push MENU/NEXT until SYSt is displayed.
3. Push SELECT. The display will toggle between CnFG and the currently selected control signal source.
4. Push MENU/NEXT. The display will toggle between LOG - and OFF?.



5. Hold down SELECT for about 5 seconds. The XC-40 wireless status indicators will go OFF and the unit will be released from the console.

TO RELEASE ALL LINKS AT THE CONSOLE

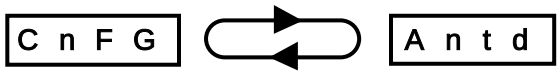
Note that releasing links at the console will release ONLY dimmers which are linked to itself.

Hold down the wireless link button on the console for about 3 seconds. The LED indicator will flash for about 10 seconds then return to ON.

The XC-40 wireless indicators will go OFF.

SETTING THE XC-40 TO WIRELESS MODE

1. Hold MENU/NEXT for aprox. 5 seconds to access the menus. The display will show dSEt.
2. Push MENU/NEXT until SYSt is displayed.
3. Push SELECT. The display will toggle between CnFG and the currently selected control source.



4. Use ↑↓ to select Antd.
5. Push SELECT to save the change.

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

WALL STATION REMOTE CONTROL

The XC-40 can be controlled using Lightronics architectural smart remote wall stations. This is done using a NON-DMX wiring bus to connect the units. Multiple XC-40's and/or multiple smart remote wall stations may be connected together.

The XC-40 can store 64 preset scenes which can be activated by the smart remotes. These scenes are grouped according to which type of smart remote can access them. Scenes 1 - 32 are reserved for push button and IR remotes. Scenes 51 - 63 are used with fader remotes. Both push button and fader remotes may be connected to the same smart remote bus.

If multiple XC-40 units are connected to a smart remote then each XC-40 will activate its own corresponding scene.

The XC-40 cannot be operated as a DMX controlled dimmers when connected for smart remote operation since the 5 pin XLR connectors are used to connect to the remotes.

BUTTON AND IR SMART REMOTES

These remotes activate individual scenes within a block of scenes which have been stored in the XC-40. Scenes will activate on an "exclusive" basis. In other words only one scene may be on at a time. Currently available button remotes are the AC-1009, AC-2016 and AI-1001.

You can select which block of scenes will be activated by the remote. This is done by DIP switches on the back of the remote. For instance, an AC-1009 can be set to control scenes 1 - 8 , scenes 9-16, or other blocks of 8 consecutive scenes. There are a total of 4 scene blocks available covering scenes 1 thru 32.

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. (all scenes will beturned off regardless of their source).

Refer to the smart remote owner manual for specific info on setting scene addressing. Multiple remotes of this type may be but are not required to be set to the same block of scenes.

FADER SMART REMOTES

These units use specific individual scenes which have been stored in the XC-40 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. Currently available fader remotes are the AF-2004, AF-3007 and AF-5013.

All fader remotes will interact with scenes beginning 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.).

SMART REMOTE CONNECTIONS

All remotes connect to a RS-485 bus which is controlled by a XC-40 dimmer pack. Additional XC-40 dimmers may also be connected on the same bus. One of them will be set as the master controller by making UNIT ADDRESS ASSIGNMENTS. A smart remote bus should be daisy chained to all its receiving units. It should NOT be connected in a star arrangement with multiple "home runs".

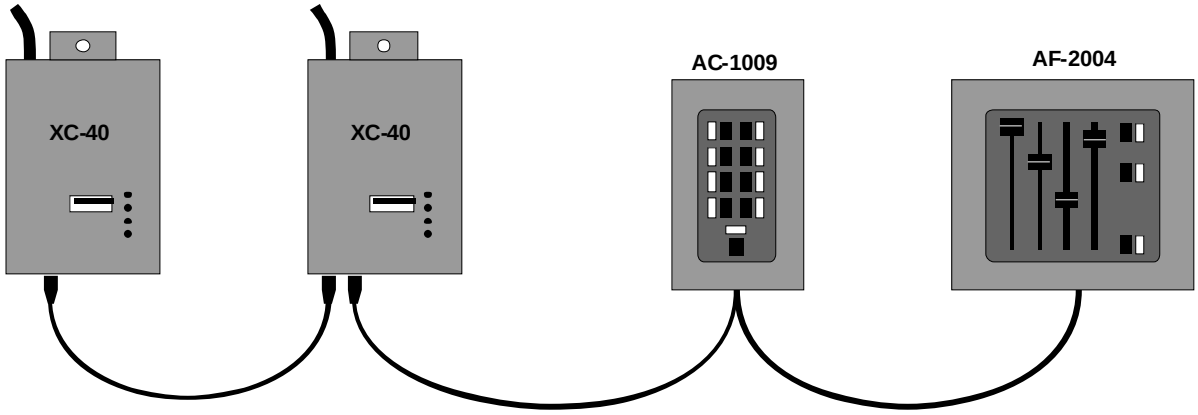
Smart remote signals to the XC-40 are carried over a two twisted pair, shielded, low capacitance cable. One pair carries the RS-485 signal. The wires in the other pair are provide low voltage power to the remotes. The shield is used as common for both the data and power.

Each smart remote has a 4 pin connector with screw down terminals to connect to the RS-485 bus.

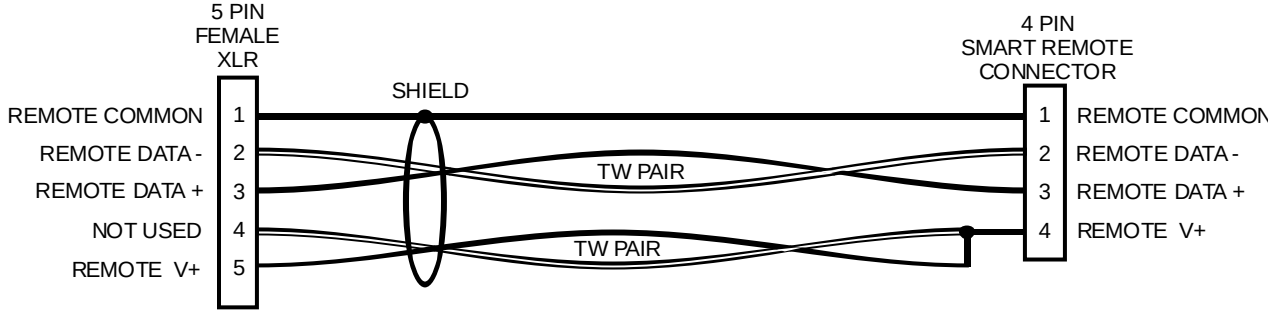
YOU MUST GET THE EXACT WIRING PINOUT INFORMATION FOR THE REMOTE UNIT FROM ITS OWNERS MANUAL.

A general system connection example and cable wiring arrangements are shown on the next page.

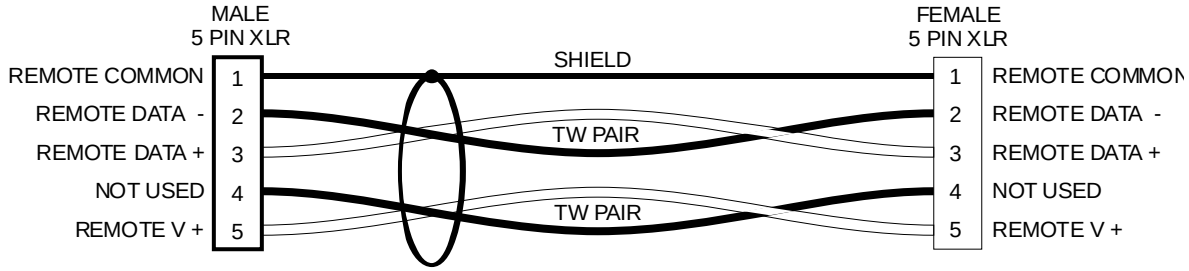
EXAMPLE SYSTEM USING XC-40s AND SMART REMOTES



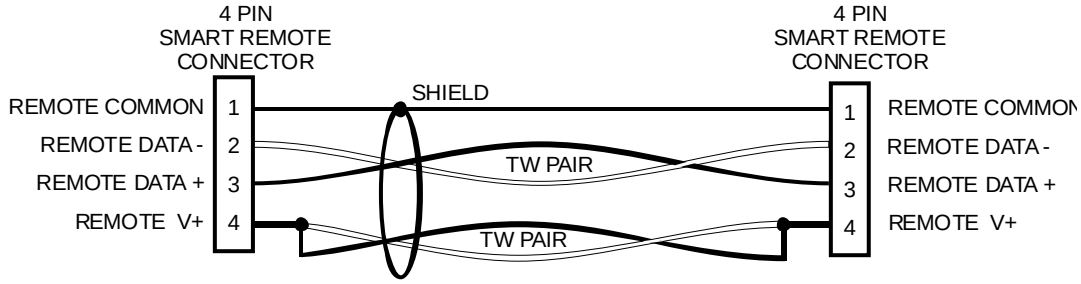
XC-40 TO SMART REMOTE CABLE ARRANGEMENT



XC-40 INTERCONNECT CABLE FOR SMART REMOTE APPLICATION



REMOTES INTERCONNECT CABLE FOR XC-40 SMART REMOTE APPLICATION

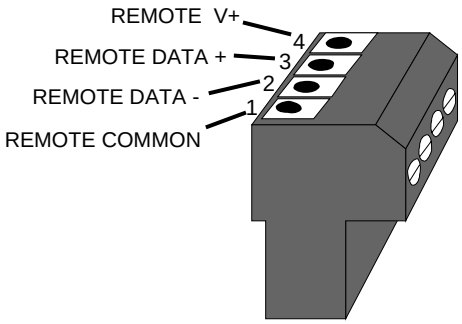


XC-40 AND SMART REMOTES CONNECTORS

CAUTION
REMOVE ALL POWER FROM THE XC-40 BEFORE MAKING OR CHANGING SMART REMOTE CONNECTIONS.

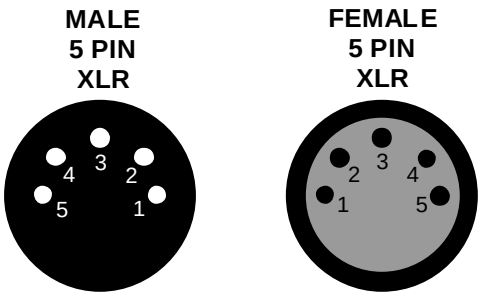
SMART REMOTES CONNECTOR DETAILS

The diagram below shows the signals for the 4 Pin, smart remotes connector.



XC-40 CONNECTOR DETAILS FOR REMOTE USE

The diagram below shows the signals for both of the 5 Pin XLR connectors when used with smart remotes.



PIN #	SIGNAL
1	REMOTE COMMON
2	REMOTE DATA -
3	REMOTE DATA +
4	NOT USED
5	REMOTE V +

UNIT ADDRESS ASSIGNMENT

The smart remote connection bus used with XC-40s must have a single controlling (master) unit on it. Assigning the master unit on the bus is accomplished by setting unit addressess for the dimmers.

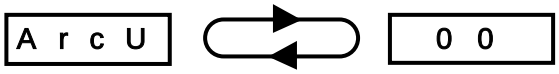
When using only one XC-40 with smart remotes control, the unit must be set to UNIT ADDRESS 00. If multiple XC-40s are used then one of them (and ONLY one of them) must be set to UNIT ADDRESS 00. The remaining units may be set to any other unit address. It is recommended that they be set to consecutive numbers starting at 01 for future use.

TO SET THE UNIT ADDRESS

Hold MENU/NEXT for aprox. 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 **ArcU** and the current unit address number.



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

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

CREATING AND SAVING SCENES

Scenes to be activated by an XC-40 dimmer must first be created and stored (recorded) in the dimmer pack. Scene recording stores the current intensity levels of all four channels in the unit regardless of how they were set.

Intensity levels can be set using only the dimmer, in the local mode, or by operating the unit with a DMX console. 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.

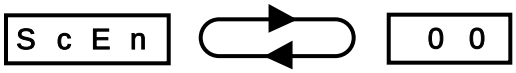
TO RECORD A SCENE

Set the intensity for each channel in the unit to the desired brightness.

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

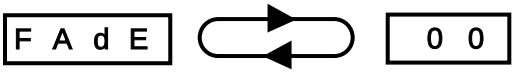
Push MENU/NEXT until the display shows SYSt.
Push SELECT. The display will toggle between CnFG and the currently selected control source.

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



Use ↑ and ↓ 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).

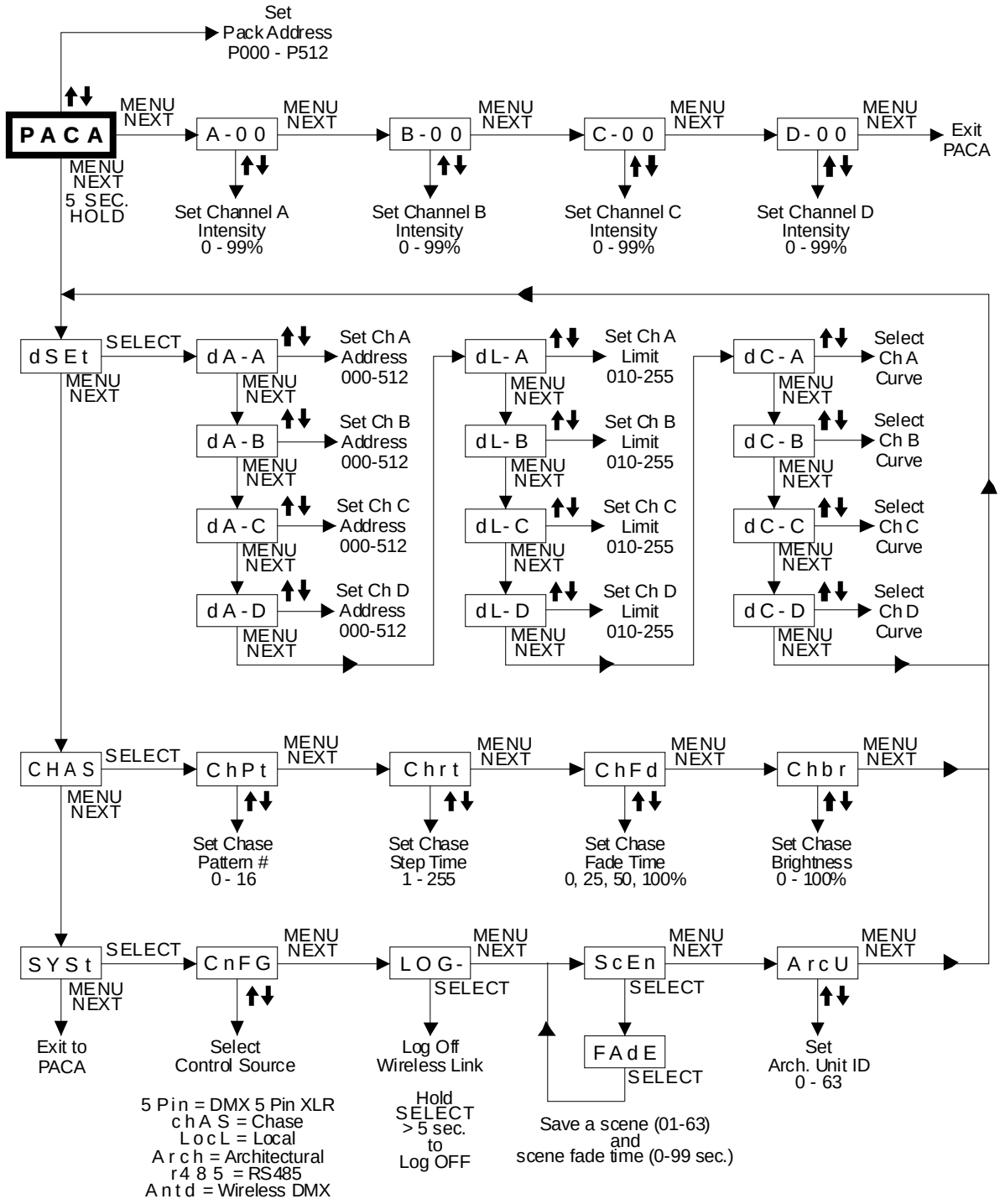


Use ↑ and ↓ to change the the time. Then push SELECT to save the setting.

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

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

MENU AND DISPLAY OPERATION



MAINTENANCE AND REPAIR

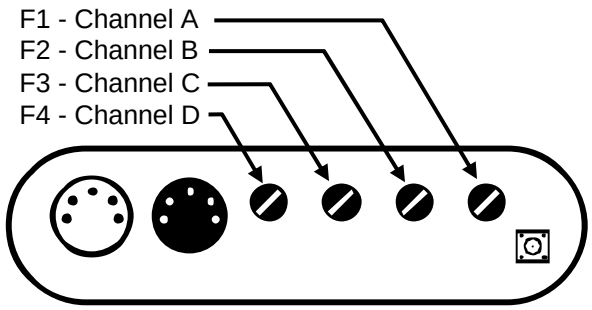
TROUBLESHOOTING

- Check that you have power applied to the dimmer.
- Check that all light fixtures are functional.
- Check the fuses.
- Check the DMX cable.
- Check the console setup for correct patching.

REPAIR

FUSE REPLACEMENT

The only user serviceable parts are externally accessible fuses. Replace fuses ONLY with 5 Amp, 250VAC, fast blow fuses. The diagram below identifies the fuse for each channel



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 dimmer, or Lightronics Service Department, 509 Central Drive, Virginia Beach, VA 23454. Tel: 757 486 3588.

SPECIFICATIONS AND FEATURES

Channels	4
Channel Capacity	600 Watts
Total Power	2400 Watts
Power Requirements	120VAC, 20 Amps
Power Connections	2 Edison Plugs
Control Protocol	DMX-512, RS-485, Architectural, Optional Wireless DMX
Control Connections	Dual 5 pin XLR
Frequency	50/60 Hz
Fusing	5 Amps each channel
Preheat Control	Soft Start
Response Curves	Incandescent, LED, Fluorescent, Relay Mode
Filter Rise Time	350 Microseconds
Efficiency	97%
Size	8.5"L X 6.75"W X 2.5"D
Weight	3.25 Pounds

WARRANTY

All Lightronics products are warranted for a period of TWO/FIVE 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) The FIVE YEAR WARRANTY is only valid if the warranty card is returned to Lightronics accompanied with a copy of the original receipt of purchase within 30 DAYS of the purchase date, if not then the TWO YEAR WARRANTY applies. 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.

I) Lightronics Inc. reserves the right to make changes as deemed necessary to this warranty without prior notification.