



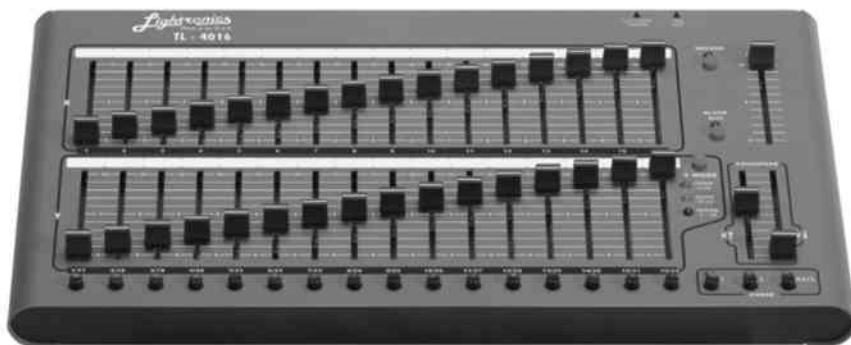
TL – 4016

MEMORY CONTROL CONSOLE

OWNERS MANUAL

Revision 1.4

02/20/2005



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SPECIFICATIONS

Total Channels	32 or 16 depending on mode	Output connector	3 pin XLR connector
Operating modes	16 channels x 2 manual scenes		5 pin XLR for DMX-512
	32 channels x 1 manual scene	Compatibility	Multiplex protocol compatible with other multiplexed systems
	16 channels + 16 recorded scenes	Power input	18VAC or +15VDC
Scene memory	16 scenes total		Optional external power supply
Chase	2 programmable 23 step chases	Dimensions	16.25"W X 9.25"H X 2.5"H
Control protocol	LMX-128 (multiplex)	Weight	6.7 Pounds
	USITT DMX-512 is optional		

Other features of the TL-4016 include: grand master fader, split dipless crossfader, momentary "bump" buttons, and blackout control. Two 23 step chases may be run simultaneously for complex patterns. Chase rate is set by tapping the rate button at the desired rate. Scenes and chases stored in the unit are not lost when the unit is turned off

INSTALLATION

The TL-4016 control console should be kept away from moisture and direct sources of heat.

LMX CONNECTIONS: Connect the unit to a Lightronics (or compatible) dimmer using a multiplex control cable with 3 pin XLR connectors. The TL-4016 is powered by the dimmer which it is connected to. It may also be powered via an optional external power supply. The unit will operate with dimmers in both the NSI/SUNN and Lightronics modes. All dimmers connected to the unit MUST be in the SAME mode.

DMX CONNECTIONS: Connect the unit to a DMX dimmer using a control cable with 5 pin XLR connectors. The DMX-512 connection does NOT provide console power therefore an external power supply (provided with units having DMX option) must be used.

LMX-128 Connector Wiring
(3 PIN FEMALE XLR)

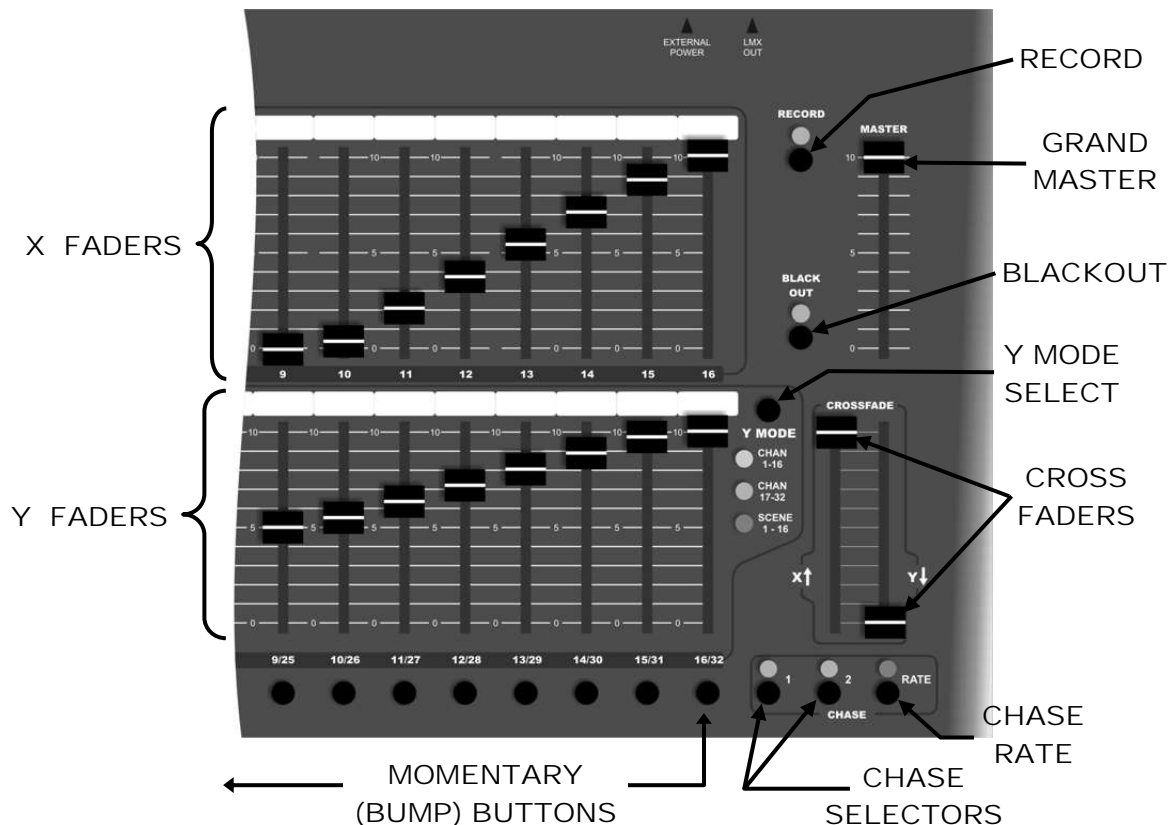
PIN #	SIGNAL NAME
1	Common
2	Phantom power from dimmers Normally +15VDC
3	LMX-128 multiplex signal

DMX-512 Connector Wiring
(5 PIN FEMALE XLR)

PIN #	SIGNAL NAME
1	Common
2	DMX data -
3	DMX data +
4	Not Used
5	Not Used

CONTROLS AND INDICATORS

X Faders:	Control individual channel levels for channels 1 – 16.
Y Faders:	Control level of scenes or individual channels depending on current operating mode.
Cross Fader:	Fades between X and Y row faders.
Bump Buttons:	Activates associated channels at full intensity while pressed.
Chase Select:	Turns chase on and off.
Chase Rate:	Press three or more times at desired rate to set chase speed.
Y Mode Indicators:	Indicate current operating mode of Y faders.
Y Mode Button:	Selects operating mode of Y faders.
Blackout Button:	Turns on and off console output from all scenes, channels and chases.
Blackout Indicator:	Lighted when blackout is active.
Grand Master:	Adjusts output level of all console functions.
Record Button:	Records scenes and chase patterns.
Record Indicator:	Flashes when chase or scene recording is active.



INITIAL SETUP

CHASE RESET (Resets chases to the factory programmed defaults): Remove power from the unit. Hold down the CHASE 1 and CHASE 2 buttons. Apply power to the unit while holding these buttons down. Continue to hold down the buttons for approximately 5 seconds then release.

SCENE ERASE (Clears all scenes): Remove power from the unit. Hold down the RECORD button. Apply power to the unit while holding this button down. Continue to hold down the button for approximately 5 seconds then release.

You should check the address settings of the dimmers before proceeding with TL-4016 operation.

OPERATING MODES

The TL-4016 is capable of operating in three different modes concerning the Y faders. Pressing the "Y MODE" button changes the function of the Y (lower sixteen) faders. The selected mode is indicated by the Y mode LEDs. The X (upper sixteen faders) ALWAYS control the level of channels 1 through 16.

- "CH 1-16" In this mode both the X and Y rows of faders control channels 1 through 16. The cross fader is used to transfer control between X and Y.
- "CH 17-32" In this mode the Y faders control channels 17 through 32.
- "SCENE 1-16" In this mode the Y faders control the intensity of 16 recorded scenes.

GENERAL OPERATION OF CONTROLS

CROSS FADERS: The cross fader enables you to fade between the upper (X) faders and the lower (Y) faders. The cross fade function is split into two parts giving you the ability to control the level of the upper and lower groups of faders individually. In all modes, the X cross fader must be UP to activate the upper faders and the Y cross fader must be DOWN to activate the lower faders.

MASTER: The master level fader controls the output level of all functions of the console.

BUMP BUTTONS: The momentary buttons activate channels 1 through 16 while pressed. The master fader setting affects the level of channels activated by the bump buttons. Bump buttons do NOT activate scenes.

CHASE 1 & 2 BUTTONS: Press to select chase patterns. Chase LEDs will light when a chase is active.

CHASE RATE BUTTON: Press 3 or more times at the desired rate to set chase speed. Chase rate LED will flash at the selected rate.

BLACKOUT BUTTON: Pressing the blackout button causes all channels, scenes and chases to go to zero intensity. The blackout LED will light whenever the console is in blackout mode.

RECORD BUTTON: Press to record scenes and chase patterns. Record LED will light when in record mode.

RECORDING CHASES

- 1 Press the "RECORD" button, the record LED will flash.
- 2 Press the "CHASE 1" or "CHASE 2" button to select a chase to record to.
- 3 Use the channel faders to set the channel(s) you want to be on in this step to full intensity.
- 4 Press the "RECORD" button to save the step and move to the next step.
- 5 Repeat steps 3 and 4 until all desired steps are recorded (up to 23 steps).
- 6 Press the "CHASE 1" or "CHASE 2" button to exit from the chase record mode.

CHASE PLAYBACK

- 1 Press the "RATE" button 3 or more times at the desired rate to set the chase speed.
- 2 Press "CHASE 1" or "CHASE 2" to turn chases on and off.

Note: Both chases may be on at the same time. If chases have a different number of steps, complex changing patterns can be created.

RECORDING SCENES

- 1 Activate either the "CHAN 1– 16" or "CHAN 17-32" Y mode and create the scene to be recorded by setting the faders to the desired levels.
- 2 Press "RECORD".
- 3 Press the bump button below the Y fader you wish to record the scene to.

Note: Scenes may also be recorded in the "SCENE 1-16" Y mode. This enables you to copy a scene to another or quickly create modified versions of scenes. Recording occurs even if BLACKOUT is on or the master fader is down.

SCENE PLAYBACK

- 1 Select the "SCENE 1-16" Y mode.
- 2 Bring up a fader on the lower row (Y fader) that has had a scene recorded to it.
Note that the Y cross fader must be DOWN to use the lower (Y) faders.

DMX OPERATION

If the DMX option is installed in the TL-4016 then it will transmit both DMX and LMX signals simultaneously. The DMX-512 connection does NOT provide console power therefore an external power supply (provided with units having DMX option) must be used.

QUICK START INSTRUCTIONS

The bottom cover of the TL-4016 contains brief instructions for using scenes and chases. The instructions are not intended as a substitute for this manual and should be viewed as "reminders" for operators who are already familiar with TL-4016 operation.

MAINTENANCE AND REPAIR

TROUBLESHOOTING

Check that the multiplex cable is not defective.
To simplify troubleshooting - reset the unit to provide a known set of conditions.
Make sure that the dimmer address switches are set to the desired channels.

OWNER MAINTENANCE

The best way to prolong the life of your TL-4016 is to keep it dry, cool, clean and covered when not in use.

The unit exterior may be cleaned using a soft cloth dampened with a mild detergent/water mixture or a mild spray-on type cleaner. DO NOT SPRAY ANY LIQUID directly on the unit. DO NOT IMMERSE the unit in any liquid or allow liquid to get into the controls. DO NOT USE any solvent based or abrasive cleaners on the unit.

The faders are not cleanable. If you use a cleaner in them – it will remove the lubrication from the sliding surfaces. Once this happens it is not possible to re-lubricate them.

The white strips above the faders are not covered by the TL-4016 warranty. If you mark on them with any permanent ink, paint etc. it is likely that you will be unable to remove the markings without damaging the strips.

There are no user serviceable parts in the unit. Service by other than Lightronics authorized agents will void your warranty.

EXTERNAL POWER SUPPLY INFORMATION

The TL-4016 may be powered by an external supply with the following specifications:

Output Voltage:	13 to 25 Volts AC or DC
Output Current:	400 Milliamps
Connector:	2.1mm female connector

NOTE: If a DC Supply is used – the center pin must be the NEGATIVE voltage.

OPERATING AND MAINTENANCE ASSISTANCE

Dealer and Lightronics Factory personnel can help you with operation or maintenance problems. Please read the applicable parts of this manual before calling for assistance.

If service is required - contact the dealer from whom you purchased the unit or contact Lightronics, Service Dept., 509 Central Drive, Virginia Beach, VA 23454 TEL: (757) 486-3588.



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.