



MIDICON-2™

user manual

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DOCUMENT VERSION



Please check www.elationlighting.com for the latest revision/update of this manual.

Date	Document Version	Notes
01/04/17	1	Initial release.

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GENERAL INFORMATION

INTRODUCTION

This device has been designed to perform reliably for years when the guidelines in this booklet are followed. Please read and understand the instructions in this manual carefully and thoroughly before attempting to operate this device. These instructions contain important information regarding safety during use and maintenance.

UNPACKING

Every device has been thoroughly tested and has been shipped in perfect operating condition. Carefully check the shipping carton for damage that may have occurred during shipping. If the carton appears to be damaged, carefully inspect your unit for damage and be sure all accessories necessary to operate the unit have arrived intact. In the event damage has been found or parts are missing, please contact our customer support team for further instructions. Please do not return this unit to your dealer without first contacting customer support at the number listed below. Please do not discard the shipping carton in the trash. Please recycle whenever possible.

BOX CONTENTS

- USB Cable
- Rack Mount Kit

CUSTOMER SUPPORT

Elation Professional® provides a customer support line, to provide set up help and to answer any question should you encounter problems during your set up or initial operation. You may also visit us on the web at www.elationlighting.com for any comments or suggestions. For service related issue please contact Elation Professional®.

ELATION SERVICE USA - Monday - Friday 8:00am to 5:00pm PST

Voice: 323-582-3322

Fax: 323-832-9142

E-mail: support@elationlighting.com

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WARRANTY REGISTRATION

Please complete and mail in the enclosed warranty card or register online: <http://www.elationlighting.com/Login.aspx> to validate your purchase. All returned service items whether under warranty or not, must be freight pre-paid and accompany a return authorization (R.A.) number. The R.A. number must be clearly written on the outside of the return package. A brief description of the problem as well as the R.A. number must also be written down on a piece of paper and included in the shipping container. If the unit is under warranty, you must provide a copy of your proof of purchase invoice. Items returned without a R.A. number clearly marked on the outside of the package will be refused and returned at customer's expense. You may obtain a R.A. number by contacting customer support.

IMPORTANT NOTICE!

There are no user serviceable parts inside this unit. Do not attempt any repairs yourself; doing so will void your manufactures warranty. Damages resulting from modifications to this fixture and/or the disregard of safety and general user instructions found in this user manual void the manufactures warranty and are not subject to any warranty claims and/or repairs.

LIMITED WARRANTY

A. Elation Professional® hereby warrants, to the original purchaser, Elation Professional® products to be free of manufacturing defects in material and workmanship for a period of two years (730 days), and Elation Professional® product rechargeable batteries to be free of manufacturing defects in material and workmanship for a period of six months (180 days), from the original date of purchase. This warranty excludes discharge lamps and all product accessories. This warranty shall be valid only if the product is purchased within the United States of America, including possessions and territories. It is the owner's responsibility to establish the date and place of purchase by acceptable evidence, at the time service is sought.

B. For warranty service, send the product only to the Elation Professional® factory. All shipping charges must be pre-paid. If the requested repairs or service (including parts replacement) are within the terms of this warranty, Elation Professional® will pay return shipping charges only to a designated point within the United States. If any product is sent, it must be shipped in its original package and packaging material. No accessories should be shipped with the product. If any accessories are shipped with the product, Elation Professional® shall have no liability what so ever for loss and/or or damage to any such accessories, nor for the safe return thereof.

C. This warranty is void if the product serial number and/or labels are altered or removed; if the product is modified in any manner which Elation Professional® concludes, after inspection, affects the reliability of the product; if the product has been repaired or serviced by anyone other than the Elation Professional® factory unless prior written authorization was issued to purchaser by Elation Professional®; if the product is damaged because not properly maintained as set forth in the product instructions, guidelines and/or user manual.

D. This is not a service contract, and this warranty does not include any maintenance, cleaning or periodic check-up. During the periods as specified above, Elation Professional® will replace defective parts at its expense, and will absorb all expenses for warranty service and repair labor by reason of defects in material or workmanship. The sole responsibility of Elation Professional® under this warranty shall be limited to the repair of the product, or replacement thereof, including parts, at the sole discretion of Elation Professional®. All products covered by this warranty were manufactured after January 1, 1990, and bare identifying marks to that effect.

E. Elation Professional® reserves the right to make changes in design and/or performance improvements upon its products without any obligation to include these changes in any products theretofore manufactured.

F. No warranty, whether expressed or implied, is given or made with respect to any accessory supplied with the products described above. Except to the extent prohibited by applicable law, all implied warranties made by Elation Professional® in connection with this product, including warranties of merchantability or fitness, are limited in duration to the warranty periods set forth above. And no warranties, whether expressed or implied, including warranties of merchantability or fitness, shall apply to this product after said periods have expired. The consumer's and/or dealer's sole remedy shall be such repair or replacement as is expressly provided above; and under no circumstances shall Elation Professional® be liable for any loss and/or damage, direct and/or consequential, arising out of the use of, and/or the inability to use, this product.

G. This warranty is the only written warranty applicable to Elation Professional® products and supersedes all prior warranties and written descriptions of warranty terms and conditions heretofore published.

SAFETY INSTRUCTIONS



This device is an extremely sophisticated piece of electronic equipment. To guarantee a smooth operation, it is important to follow the guidelines in this manual. The manufacturer of this device will not accept responsibility for damages resulting from the misuse of this fixture due to the disregard of the information printed in this manual.



I N D O O R S U S E O N L Y !
DO NOT EXPOSE DEVICE TO RAIN AND MOISTURE!

O V E R V I E W

The **MIDICON-2™** is a general-purpose MIDI controller designed to work alongside **Elation Lighting** software packages or any lighting software that accepts MIDI. The controller is USB powered and uses the USB class drivers so that no special driver needs to be installed on the host PC or MAC. When you connect the **MIDICON-2™** controller for the first time, your PC will automatically assign the MIDI driver that is included with your operating system. It will work with both Windows™ and Apple™ operating systems. The controller uses standard MIDI messages to communicate with your software. Tables showing the default MIDI messages and continuous control numbers assigned to the buttons and faders are listed at the end of this manual. You can also create your own MIDI map for the **MIDICON-2™** controls using the **Elation MIDICON-2™** mapper software. Some lighting software programs will support **MIDICON-2™** as plug and play device without any need for special setup other than selecting it as the default MIDI controller. Consult your lighting software's manual for more information.

MIDI is an acronym for "musical instrument digital interface". MIDI has been in use since the 1980's and was intended as a means to interconnect musical instruments such as keyboards and electronic sound producing devices. MIDI communicates digitally between devices by sending event messages, for example a button press. Many lighting control software programs allow MIDI messages to be used as event triggers. The **MIDICON-2™** makes use of MIDI messages to communicate with your lighting software using MIDI over USB.

This user manual does not try to explain the technical details of how MIDI works. If your lighting control software allows you to select the **MIDICON-2™** from its setup menu as a plug and play device no special programming of the **MIDICON-2™** will be required. The **MIDICON-2™** can be customized to fit any lighting software if needed. Some knowledge of how MIDI works would be helpful in that case. There are many articles online that explain how MIDI works.

The **MIDICON-2™** has a default MIDI map that assigns specific MIDI messages to each control (button, fader, wheel, etc.) For software programs that support the **MIDICON-2™** as plug and play, the default MIDI map will work with your software as soon as you select the **MIDICON-2™** as your controller. For other programs, the default map should also work. For programs that require a custom MIDI map, you can create your own map using the **Elation MIDICON-2™** mapper software. Refer to the Custom MIDI Maps section for more details.

With the factory default MIDI map, the **MIDICON-2™** sends MIDI note messages to your software whenever buttons are pressed or when the data wheels are turned. When a button is pressed a MIDI "note on" message is sent and when a button is released a MIDI "note off" message is sent. This will allow you to control momentary events. The MIDIcon 2 sends MIDI continuous controller messages when you move the faders.

The **MIDICON-2™** can also receive MIDI messages to control the LEDs and page displays. This will allow your software to take control of the **MIDICON-2™** so that it will be in sync with your lighting software. At the end of this manual is a list of all the default MIDI messages that are used.



PLAYBACKS: 8 playback faders each with 1 rotary push-in style dial, 2 playback buttons with bi-color LEDs, up and down fader page select buttons, and an LED page number display

MASTER FADER and BLACKOUT BUTTON: Located in the center of the controller.

SHORTCUTS: 6 general purpose shortcut buttons labeled **S1** through **S6** are located above the playback buttons, and 8 general purpose shortcut buttons labeled **A** through **H** are located above the 4 jog wheels.

MATRIX BUTTONS: 32 matrix buttons and matrix page select buttons and a display.

JOG WHEELS: There are 4 wheels that can be used for data entry or direct control of lighting parameters. The wheels are also push buttons that allow you to press in on the wheel to send an additional button press message.

PLAYBACKS



The playback section was designed to take advantage of the playback features in most lighting software programs where a playback fader and some associated buttons are used. There are two buttons, a small rotary encoder and a red/blue bi-color LED above each fader. The function of each of these will vary depending on the software that you are using.

A fader will typically send MIDI continuous controller messages to your software, giving each fader a resolution of 128 steps. The fader will send a MIDI message indicating position when it is moved. The buttons will typically send MIDI note on/off messages when pressed.

The rotary dials above each fader send MIDI messages for increment (turn right one step) and decrement (turn left one step). You can also press down on a rotary for an additional button press and release message. The software you are controlling will determine the function of the rotary dials and will generally match the context of the current programming screen. Refer to your lighting software's instructions. The rotary dials will send separate MIDI note messages for each rotational step left or right with 96 steps per revolution.

Your lighting software can control the LEDs at the top of each playback section, usually by sending MIDI note on or note off messages. The LEDs are red/blue bi-color. Separate note messages can be used to control the red or blue LEDs.

All of these controls can also be re-programmed to send or respond to other MIDI messages using the **Elation MIDICON-2™** mapper software.

PAGE CONTROLS



There are 2 separate sets of page control buttons, one for the Playback Faders and another for the Matrix buttons. Paging essentially gives you additional virtual sets of faders and matrix buttons to work with. Paging can be controlled by your lighting software or by the **MIDICON-2™** controller via MIDI channel paging. If your software can control the paging you can have up to 99 pages to work with.

When the **MIDICON-2™** is set to control the paging (using the **Elation MIDICON-2™** mapper software), it provides you 16 pages to work with by transmitting and receiving MIDI messages on 16 separate MIDI channels. By changing the MIDI channel when the page is changed, your lighting software will essentially treat each page as a separate set of controls on separate MIDI channels. The current page number will be the MIDI channel that is currently in use for the playbacks or the matrix buttons.

NOTE: MIDI channel paging is disabled on the default factory map. When creating your own MIDI map, you can enable paging from **Elation MIDICON-2™** mapper software. Refer to the section on Custom MIDI Maps for more details.

MATRIX BUTTONS



These 32 buttons can be used to call lighting effects, scenes, colors, etc. If your lighting software does not support the **MIDICON-2™** as plug and play, you will have to link each button to a function using the setup menu in your software. Refer to your software manual for instructions, as this will be different for each program.

These buttons will typically send MIDI note on and note off messages but can be customized using the **Elation MIDICON-2™** mapper software. Please refer to the MIDI table at the end of this manual for each button's default MIDI note message.

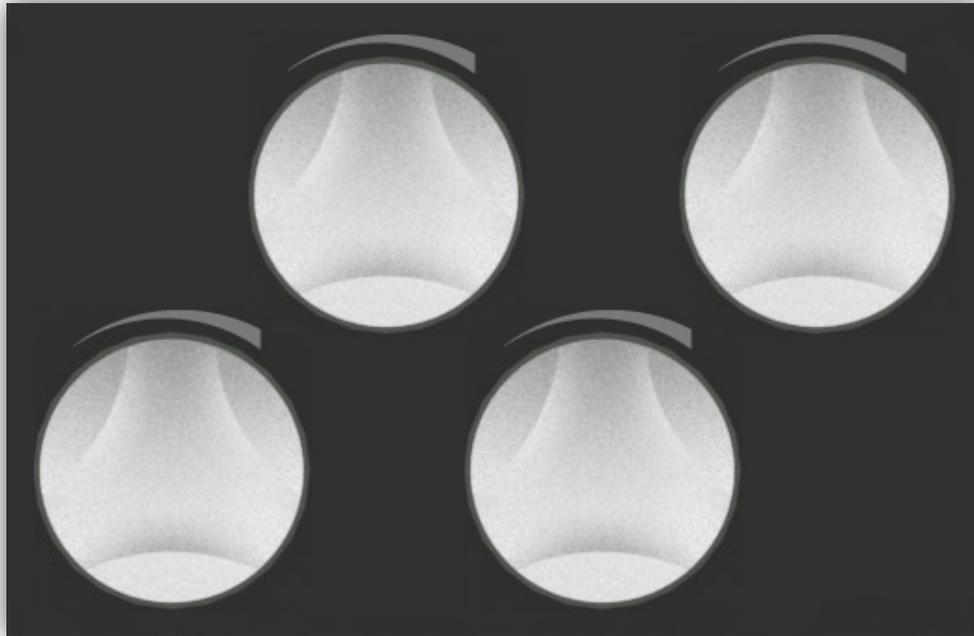
The 32 matrix buttons can be paged using the page controls to their upper left. Paging can be handled by your lighting software or by the **MIDICON-2™** using MIDI channels. Please refer to the previous section on the page controls for more details.

SHORTCUT BUTTONS



These 14 buttons are intended for frequently used functions in your software. If your controller does not support the **MIDICON-2™** as plug and play, you will have to link each button to a function using the setup menu in your software. Refer to your software instructions, as this will be different for each program. Please refer to the MIDI table at the end of this manual for each button's default MIDI note message.

JOG WHEELS



The jog wheels send MIDI messages for increment (turn right one step) and decrement (turn left one step). You can also press down on a wheel for an additional button press and release message. For some software programs that support the **MIDICON-2™** as plug and play, the wheels are pre-programmed to match the context of the current programming screen. They can be used to adjust channel values, color mixing, fade times, etc. Shortcut buttons can be used as shift buttons to shift the wheels to additional sets of functions. Refer to your lighting software instructions. The factory default settings will send separate MIDI note messages for each rotational step left or right. The wheels send 96 steps per revolution.

With the **Elation MIDICON-2™** mapper software, these can be programmed to send other types of MIDI messages besides MIDI notes.

MASTER FADER AND BLACKOUT BUTTON



The master fader is generally used to control the overall level of the stage lights but can also be used to control other things like speed or be used as another playback fader. This fader is not tied to the page controls.

Above the master fader is the blackout button. If your software supports the **MIDICON-2™** as plug and play, its function will be handled for you otherwise you will need to link its MIDI message to your software's blackout function.

REAR PANEL

On the back of the **MIDICON-2™** you will find the power ON/OFF switch, a Kensington slot for attaching a security cable, and a USB type B connector.



USB LIGHT

USB Type A connector on the upper right area above the matrix buttons can be used to plug in a USB LED gooseneck light (not included).

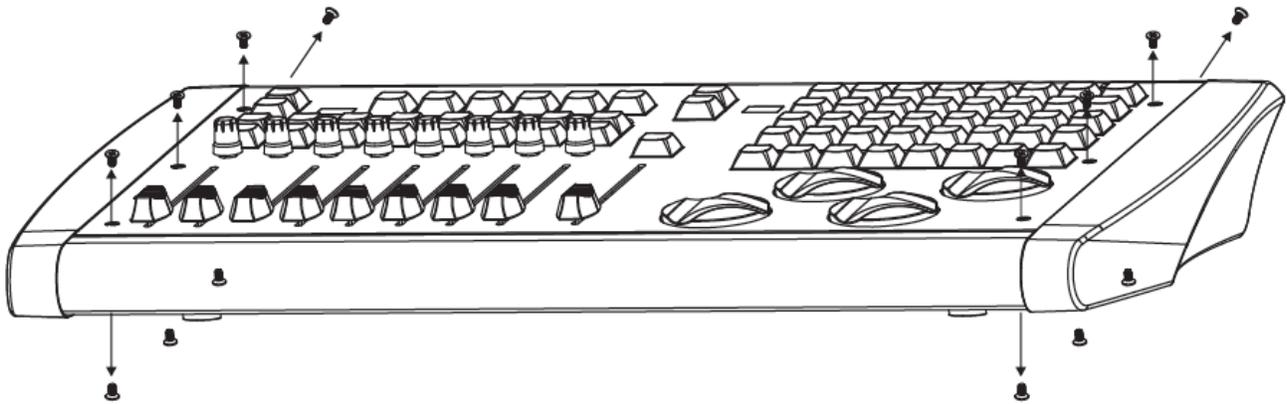
 Only use a small low USB powered LED light (maximum current = 100ma)



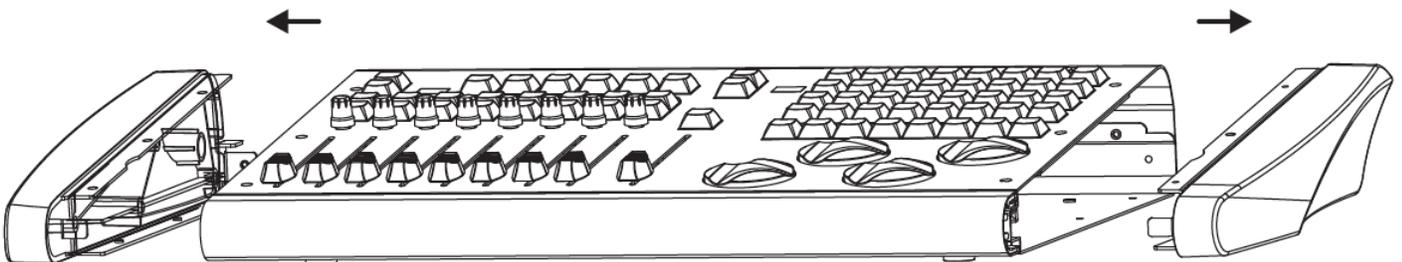
RACK MOUNTING HARDWARE

The **MIDICON-2™** comes with replacement sides so that you can rack mount it in a standard 19" rack enclosure or case. To install the rack mount hardware you must remove the plastic end caps then reuse the mounting screws to attach the metal rack-mountable sides. Each side requires that you remove a total of (7) screws, (3) on the top, (3) on the bottom, and (1) on the back. Pull the plastic end caps away from the unit and then insert the metal rack mount sides so that the screw holes are aligned properly. The height is 7.5 rack spaces starting from the bottom. This leaves a gap at the top to allow room for the USB cable to fit. (See diagrams below)

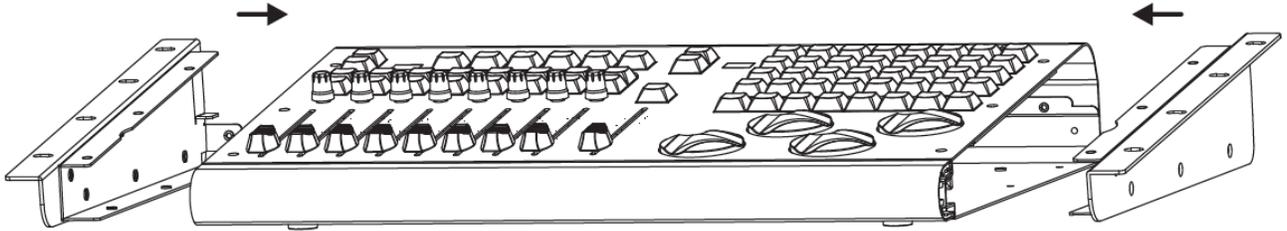
1



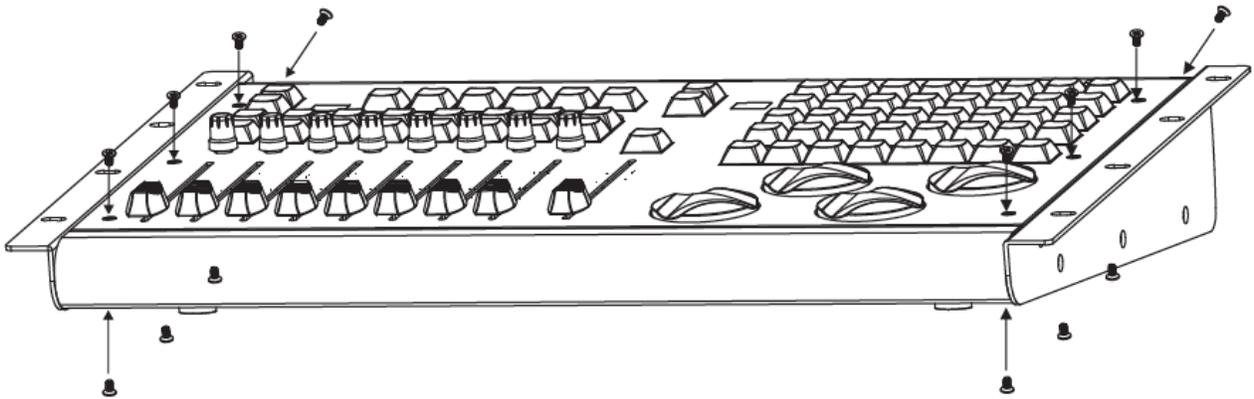
2



3



4



MIDI MESSAGES

The following is a list of MIDI messages sent by controls using the default MIDI map. These are sent to your software from the **MIDICON-2™** for each button press, wheel or fader movement. A **“NOTE ON”** message is sent for a button press and a **“NOTE OFF”** message for a button release. All messages are sent on MIDI channel 1.

Playback Faders

Playback fader 1 – continuous controller 1
Playback fader 2 – continuous controller 2
Playback fader 3 – continuous controller 3
Playback fader 4 – continuous controller 4
Playback fader 5 – continuous controller 5
Playback fader 6 – continuous controller 6
Playback fader 7 – continuous controller 7
Playback fader 8 – continuous controller 8

Master Fader – continuous controller 9

Blackout Button – Note 67

Playback Buttons

Playback 1 Button Top Row – Note 41
Playback 2 Button Top Row – Note 42
Playback 3 Button Top Row – Note 43
Playback 4 Button Top Row – Note 44
Playback 5 Button Top Row – Note 45
Playback 6 Button Top Row – Note 46
Playback 7 Button Top Row – Note 47
Playback 8 Button Top Row – Note 48

Playback 1 Button Bottom Row – Note 49
Playback 2 Button Bottom Row – Note 50
Playback 3 Button Bottom Row – Note 51
Playback 4 Button Bottom Row – Note 52
Playback 5 Button Bottom Row – Note 53
Playback 6 Button Bottom Row – Note 54
Playback 7 Button Bottom Row – Note 55
Playback 8 Button Bottom Row – Note 56

Playback Page Buttons

Page up – Note 57
Page down – Note 58

Playback Rotaries

Rotary 1 turn right 1 click – Note 86
Rotary 1 turn left 1 click – Note 87
Rotary 1 push in – Note 68
Rotary 2 turn right 1 click – Note 88
Rotary 2 turn left 1 click – Note 89
Rotary 2 push in – Note 69
Rotary 3 turn right 1 click – Note 90
Rotary 3 turn left 1 click – Note 91
Rotary 3 push in – Note 70
Rotary 4 turn right 1 click – Note 92
Rotary 4 turn left 1 click – Note 93
Rotary 4 push in – Note 71
Rotary 5 turn right 1 click – Note 94
Rotary 5 turn left 1 click – Note 95
Rotary 5 push in – Note 72
Rotary 6 turn right 1 click – Note 96
Rotary 6 turn left 1 click – Note 97
Rotary 6 push in – Note 73
Rotary 7 turn right 1 click – Note 98
Rotary 7 turn left 1 click – Note 99
Rotary 7 push in – Note 74
Rotary 8 turn right 1 click – Note 100
Rotary 8 turn left 1 click – Note 101
Rotary 8 push in – Note 75

Shortcut Buttons

S1 – Note 59
S2 – Note 60
S3 – Note 61
S4 – Note 62
S5 – Note 63
S6 – Note 64

A – Note 33
B – Note 34
C – Note 35
D – Note 36
E – Note 37
F – Note 38
G – Note 39
H – Note 40

Wheels

Wheel 1 turn right 1 click – Note 78
Wheel 1 turn left 1 click – Note 79
Wheel 1 Press in – Note 102
Wheel 2 turn right 1 click – Note 80
Wheel 2 turn left 1 click – Note 81
Wheel 2 Press in – Note 103
Wheel 3 turn right 1 click – Note 82
Wheel 3 turn left 1 click – Note 83
Wheel 3 Press in – Note 104
Wheel 4 turn right 1 click – Note 84
Wheel 4 turn left 1 click – Note 85
Wheel 4 Press in – Note 105

Matrix Buttons

Button 1 – Note 1
Button 2 – Note 2
Button 3 – Note 3
Button 4 – Note 4
Button 5 – Note 5
Button 6 – Note 6
Button 7 – Note 7
Button 8 – Note 8
Button 9 – Note 9
Button 10 – Note 10
Button 11 – Note 11
Button 12 – Note 12
Button 13 – Note 13
Button 14 – Note 14
Button 15 – Note 15
Button 16 – Note 16
Button 17 – Note 17
Button 18 – Note 18
Button 19 – Note 19
Button 20 – Note 20
Button 21 – Note 21
Button 22 – Note 22
Button 23 – Note 23
Button 24 – Note 24
Button 25 – Note 25
Button 26 – Note 26
Button 27 – Note 27
Button 28 – Note 28
Button 29 – Note 29
Button 30 – Note 30
Button 31 – Note 31
Button 32 – Note 32

Matrix Page Buttons

Page up – Note 65

Page down – Note 66

Playback Page Display – continuous controller 10

This MIDI message is sent when the playback page is changed. The controller value will be the page number (1-99).

Matrix Page Display – continuous controller 11

This MIDI message is sent when the matrix page is changed. The controller value will be the page number (1-99).

MIDI MESSAGES RECEIVED

LED Control – There are 9 bi-color LEDs, one above each playback and an additional LED above the blackout button. Software programs can control the LEDs by sending MIDI note messages when using the default MIDI map. **“NOTE ON”** will turn the LED on and **“NOTE OFF”** will turn it off.

Default LED Messages

Red LED 1 – Note 106
Red LED 2 – Note 107
Red LED 3 – Note 108
Red LED 4 – Note 109
Red LED 5 – Note 110
Red LED 6 – Note 111
Red LED 7 – Note 112
Red LED 8 – Note 113
Red LED Blackout – Note 114
Blue LED 1 – Note 115
Blue LED 2 – Note 116
Blue LED 3 – Note 117
Blue LED 4 – Note 118
Blue LED 5 – Note 119
Blue LED 6 – Note 120
Blue LED 7 – Note 121
Blue LED 8 – Note 122
Blue LED Blackout – Note 123

Playback Page Display – Your lighting software can use MIDI continuous controller 10 to control this page display when using the default MIDI map. The value byte can set the page number to 0-99. Values above 99 will turn the display off.

Matrix Page Display – Your lighting software can use MIDI continuous controller 11 to control this page display when using the default MIDI map. The value byte can set the page number to 0-99. Values above 99 will turn the display off.

CUSTOM MIDI MAPS

The **MIDICON-2™** comes ready to use with a default MIDI map as described in the previous section. This will work for most applications. If you need to make your own custom MIDI map, you can use the **Elation MIDICON-2™** mapper software. After you install the software consult the help file on how to create and upload your custom MIDI map. There is enough memory in the MIDIcon 2 to store two maps, one custom user MIDI map and the default map. After you load a custom map, it will become the active map. You can also use the **Elation MIDICON-2™** mapper software to switch between the default map and the user map. The **Elation MIDICON-2™** mapper software uses MIDI sysex messages to send and receive maps and to switch between the two maps. The following is a summary of the MIDI sysex messages used. Messages are shown as hexadecimal numbers.

The following message requests the current MIDI map from the **MIDICON-2™**:

f0 00 00 19 0b 00 f7

The following message contains the MIDI map data:

f0 00 00 19 0b 01 xx xx xx f7 where xx is the map data (approx. 2k bytes). This is the response to the previous message and also what is sent to the MIDIcon 2 to install a new user MIDI map.

The following message switches the **MIDICON-2™** to the default factory MIDI map:

f0 00 00 19 0b 02 f7

The following message switches the **MIDICON-2™** to the user MIDI map:

f0 00 00 19 0b 03 f7

FIRMWARE UPDATES

The firmware that runs the **MIDICON-2™** may need to be updated from time to time as more features are added. You can download the latest firmware updates as well as the **MIDICON-2™** boot loader software that's used to perform the update from www.elationlighting.com. The **MIDICON-2™** firmware revision is displayed for 2 seconds in the fader page display on power up.

To perform a firmware update you will have to first install the boot loader program on your Windows PC. Firmware updates are done over the USB connection. Power the **MIDICON-2™** while pressing in and holding down wheel 1, this will put it in Update Mode. The Blackout LED will flash to indicate update mode. Run the boot loader utility. If it finds the **MIDICON-2™**, the word "Connected" will appear at the bottom of the boot loader dialog. Click on "Load" to select the new firmware file (.cyacd file) then click "Program". A progress bar will appear to show when the file is finished loading. The **MIDICON-2™** will automatically reboot with the new firmware.

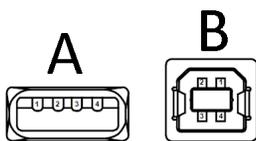
TECHNICAL SPECIFICATIONS

CONNECTIONS

USB Bus Powered (150ma 5V Max)

USB 2.0 A-Type Connector for LED Low Power Work Light (Work Light not included)

USB 2.0 B-Type Connector for Host Computer (MIDI over USB)



SIZE / WEIGHT

Length: 20.2" (514mm) | Length w/Rack Mount Sides: 19.0" (482.6mm)

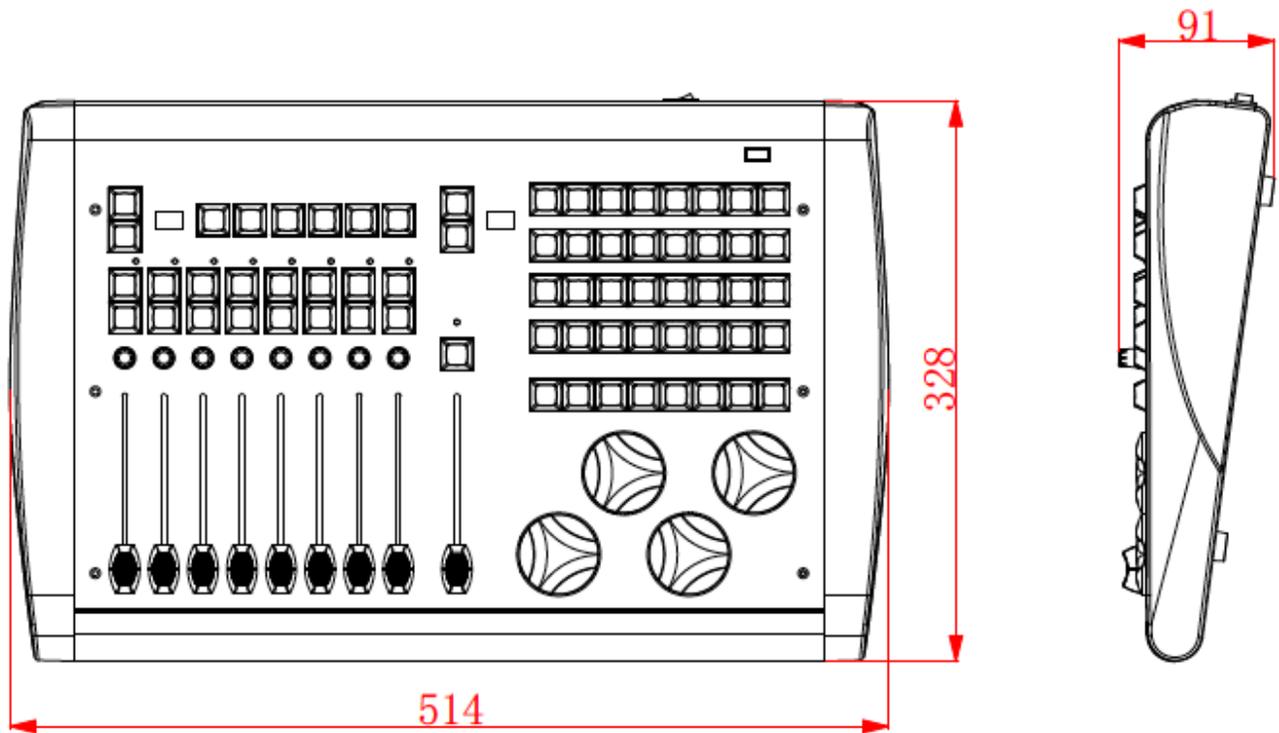
Width: 12.9" (328mm)

Vertical Height: 3.6" (91mm)

Weight: 15.0 lbs. (6.8 kg)

Please Note: Specifications and improvements in the design of this unit and this manual are subject to change without any prior written notice.

DIMENSIONAL DRAWINGS - Plastic Sides



DIMENSIONAL DRAWINGS - Rack Mount Sides

