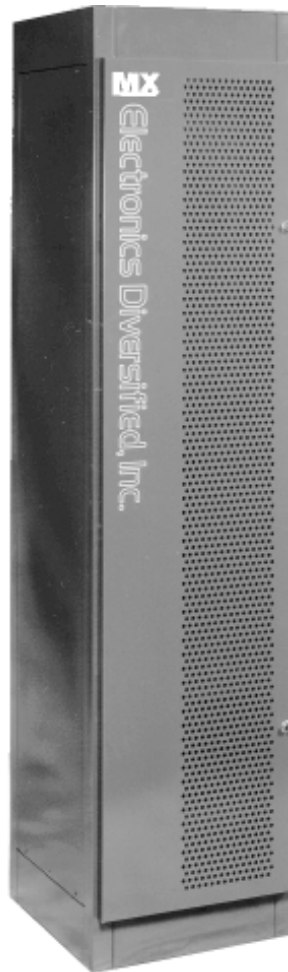# EDI

MX System Dimmer Bank

Users Manual

Introduction

This manual is to accompany the MX series dimmer rack by Electronics Diversified Inc. We believe you will find our equipment reliable and well suited to your purpose.

In the next few pages we will be giving you further information about the operation and maintenance of the MX series dimmer rack. As always, our local representatives will be very pleased to help you. If you need further information or assistance, you may be directed to our factory technical and sales staff. Our Hillsboro factory number is noted below and at the back of this book.

The MX

This rack is designed to accommodate the MX series dimmer modules. There are several different modules. The difference lies primarily in the functional characteristics of the particular module. You may find it useful to inspect the rack to determine which type(s) of modules are being employed.

There are three sizes of two dimmers per module MX series dimmer rack, the quarter size, the half and the standard. Operationally they are identical.

At the top of each rack is a window giving some functional information about the rack. Part of this are two LEDs indicating the status, that is; one which indicates everything is okay, the other means there is some problem within that particular rack.

Just below this is the Multi Link Intelligent Control Module. Stacked down from this unit are the dimmer modules. Note there may be more than one type of module in your rack.

Behind and to either side of the modules are the electrical connections, the busses. These last are likely to be electrically charged at high voltage, please exercise caution.

You will find more detailed information about your rack in the specifications materials and also in the Installation Manual. For the purposes of normal operation and maintenance we provide the information contained in this Users Manual.
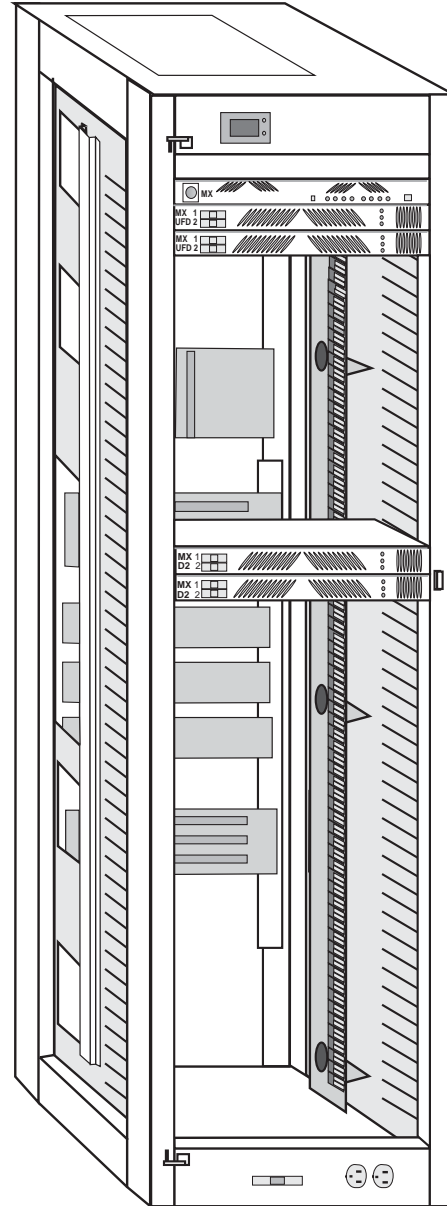
EDI 24 hour Service / Support Network.
For technical questions or operational assistance please call Customer Service at:

1-800-547-2690

Table of Contents

MX Dimmer Bank Isometric Diagram

FANS
KEEP CLEAR

POSSIBLE
FEEDER CABLE
LOCATIONS

STATUS INDICATORS
(BEACON)

DOOR HINGE

TEST DMX2 INPUT
(CONTROL DESK)

HANDHELD
PROGRAMMER
CONNECTION

CONTROL MODULE

DIMMER MODULE

MODULAR SHELVES

CONTROL
INTERFACE
BOARD

AIR FILTERS

NEUTRAL
BUSS

BACK MAINS BUSS

CONVENIENCE
OUTLETS

GROUND BUSS

CIRCUIT BREAKER

MAINS BUSS

DOOR HINGE

SIDE PANEL
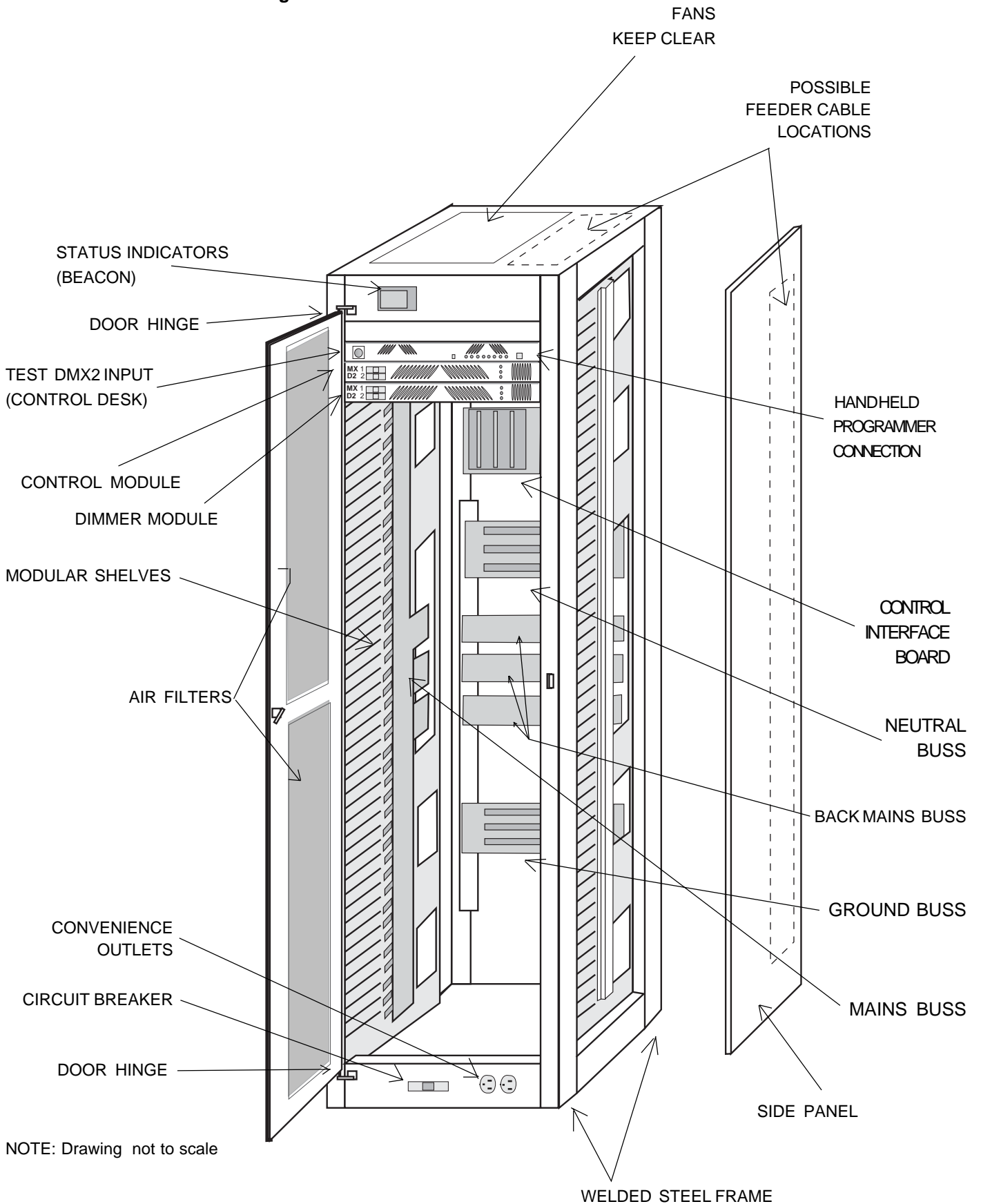
NOTE: Drawing not to scale

WELDED STEEL FRAME

Fig.1

Installation

For proper operation, the racks must be level, plumb and square. If the rack is not level it will be difficult to install and remove the dimmer modules.

Racks should be securely mounted to the floor and to the wall if necessary. Holes are provided in the floor of the rack for this purpose.

Removing / hanging the Door

The door is easily removed and re-hung. It may be useful to remove the door for maintenance or service.
A key is required to operate the cam-style locks.
To remove the door, lift the entire door up so the lower hinge pin is disengaged.
Angle the door out at the bottom and allow it to drop down off the top hinge pin.
To replace the door, follow the reverse of the above procedure.
Notice the top hinge pin is longer than the bottom, the sequence noted above is the only easy way to hang or remove the door.

Note: The door latches operate only with a key supplied by EDI. If You need replacement keys, please contact our Customer Service Dept.
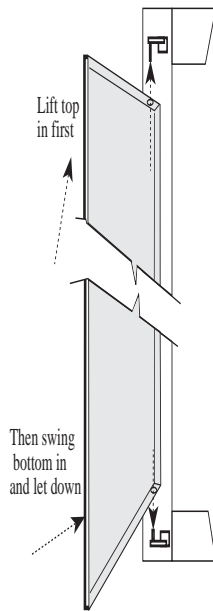
Lift top
in first

Then swing
bottom in
and let down

⚠️

WARNING:

Maximum ambient operation and storage environment for this equipment is 104°F (40°C), with 90% humidity, non-condensing.

Extreme caution is advised when liquids, food and cigarettes are near any equipment.

During severe electrical storms, equipment should be disconnected.

Failure to adhere to these requirements may result in malfunction or serious damage.

Operational Notes:

The modules are easily installed and removed without tools. Since it is possible you have different types or rated modules, we suggest the rack be closed and locked at all times.
It is likely the modules are installed in a specific order to correspond to the wiring of the rack. Keeping the door closed and locked may prevent the modules being moved without reference to this order.
The cooling efficiency of the rack may be seriously compromised by the door being left open or removed, or by unfilled dimmer slots. If this results in a dimmer(s) overheating, the affected dimmer(s) will shut down and not operate until the temperature has dropped to the operational temperature range.

MX Multi-Link Hand-held Programmer

The hand-held, sometimes called "Remote" programmer ships with each MX system. This unit plugs into the control module and provides user access to the programmable features.

Using The Programmer

There are five Screens accessible through the Remote:
> Patch A
> Patch B
> Backup
> Profile
> Setup

1. Patch A

```
Patch A* Dim.01
IN1:001 IN2.001
```

The function of this screen is to assign the DMX address for each input. This can be done on a dimmer by dimmer basis.
IN1 refers to the DMX1 board output.
IN2 refers to the DMX2 board output.
Dim. is followed by the dimmer number in the rack.
The "*" indicates the patch is active.

To Patch:
> To activate Patch A: press Patch A <u>twice</u>.
> To change Dimmer: press Dimmer up/ down.
> To change values:

Look for the ":", this is the Active Input.
Type in the value using the Number Keys.
> To switch editing to IN2: press IN2.

Note the ":" has moved to IN2.
> To Clear Patch: press Clear <u>twice</u>.
> To Set a one to one Patch: press Unity <u>twice</u>.
> To assign patch by one number steps:

For IN1, and the dimmer number: press S1.
For IN2, and the dimmer number: press S2.

Example:
To assign a one to one patch, using the S- keys:
 Clear patch by pressing Clear twice.
Note that the ":" is on IN1, and that the Dimmer is on 01.
        (See the illustration above)
If starting the rack at dimmer 97:
            type 097, press S1.
The screen should now show the dimmer as 02 and IN1
should show 98. The value of 97 @ 1 has been recorded.
Continuing to press S1 will step through the rack in order,
assigning the input on a one to one basis.

2. Patch B   :

```
Patch B* Dim.01
IN1:001 IN2.001
```

This patch screen operates in the same way as Patch A.

3. Backup
        Analog Inputs
        (0-10vdc)

```
BACKUP Analog 01
        Dim01:000
```

        Digital Inputs
        Closed contact(s)

```
BACKUP  Digital01
        Dim01:000
```

        Constants

```
BACKUP  Constant
        Dim01:000
```

This screen allows editing and recording the available 12
analog inputs, and the 4 digital inputs. Also accessible
here are the constant values.
        To switch from Analog, to Digital, to Constant:
                press S2.
        To step from one dimmer to the next:
                press Dimmer up/down.
        To change the level value:
                press Level up/down.
The changes are recorded automatically.

It is possible to copy the current dimmer levels present in
the system. To copy these active incoming values:
                press S1 twice.
The word "save" will appear in the bottom left of the
screen.

4. Profile

```
PROFILE 1
    Lev.000:000
```

This screen gives access to the output profiles of the
dimmers. There are seven slots in this screen, three are
open in the standard MX rack.
The four standard slots are assigned as follows:
        Linear
        Square Law
        Advance MX
        User defined

The bottom line of the screen indicates the:
        incoming value (left side) of 0-255 and:
        dimmer level (right side) at 0-255.

To move from profile to profile: press S2.
To change the incoming value: press Level up/down.
To change the dimmer level out: press Dimmer up/down.

5. Setup
In this set of screens, the Preheat, Profile, Proportional
Patch and Non-dim and Hold Time information may be
accessed and modified.
With the exception of Hold Time, each of these items
may be changed on a dimmer by dimmer basis.

Preheat sets the minimum
level of the dimmer.
The value range is
from 0 to 255.

```
SETUP   Dim.01
        Preheat: 000
```

Profile sets which profile
the dimmer uses.
The range is 1 to 7.

```
SETUP   Dim.01
        Profile: 000
```

Proportion sets the
output level of the dimmer
as a value which is some
proportion of the 0 to 100% value of the input level.
        Example: If the value is set to 204 (80%), the
dimmer actual out put will be 80% of the possible total,
the input value will show 100%.

```
SETUP   Dim.01
    Proportion: 000
```

Nondim will set the dimmer
to turn on or off at the
50% input value.
A value of 001 sets the dimmer to nondim.

```
SETUP   Dim.01
        Nondim: 000
```

        To switch from each screen to the next:
                press S2.
        To step through the dimmers:
                press Dimmer up / down.
        To change the value:
                press Level up / down,
                or type in a number.
        To copy a value to the next dimmer:
                press S1.

The Hold Time screen
access the DMX signal
processing. This screen sets
the time the dimmer will hold a DMX value after the input
stops. The time is expressed in multiples of 3 seconds.
        Example: An entered value of 100 equals 300
seconds, or 5 minutes.

```
SETUP   * 3 sec
Hold Time : 100
```

The dimmer check screen
makes it possible to step
through the dimmers,
bringing each to full output.
The value of up full is 255.
To step through the dimmers:
        press Dimmer up / down.

```
SETUP   Dim. 01
    Dimmer Check
```

Control Module

The control module is the user interface with the electronic brain and monitoring features of the MX series dimmer rack. The illustration shows the location of the DMX input connection, (a control cable from a lighting control board may be plugged here). Also, to the right is the connection for the hand-held programmer. Between these are LED indicators of internal rack functions.

These function indicators are limited to displaying the most basic presence or absence of the electrical or electronic signal named on the face of the rack immediately below each LED.

The only LED that when lighted is an indication of a problem with the rack, or, more specifically with the dimmer(s) in the rack, is labeled **Fault.** All other LEDs are lighted when the function named is activated under normal operation.

Also in the area of the LEDs is a service switch. This switch is recessed and requires the aid of a small pointed tool to activate. This switch allows for all the dimmers to be turned to full-up. The switch essentially bypasses all other control signals to the control module.

DMX input   Programmer port

Control module's circuit board
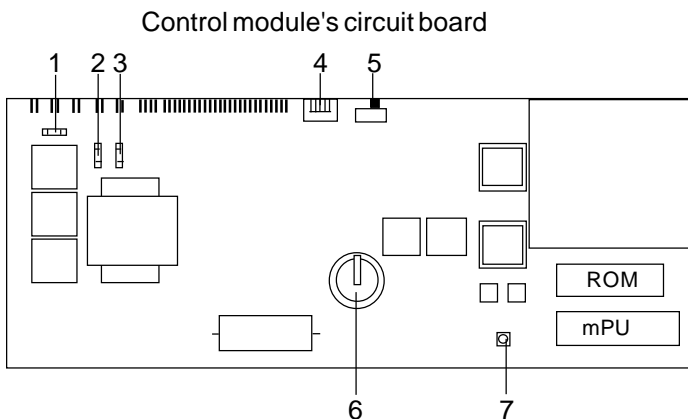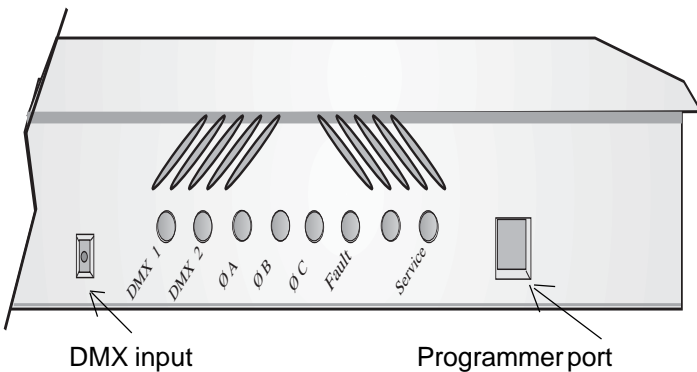
1. Phase A fuse
2. Phase B fuse
3. Phase C fuse
4. Factory Setting switches (Normally all on)
5. Memory clear (Normally in the left position, as shown)
6. Battery for memory
7. Processor reset

To set module back to Default Setting:

Power down the rack, if powered, and remove te control module. Locate the Memory clear switch on the back of the module. Move the switch to the left hand side (towards the Factory Setting switches) and leave for five seconds. Afterwords, move the switch back to the right, and palce the moduel back inside the rack. Power up the rack and verify settings.

Dimmer Module

The standard dimmer modules provide one LED indicator per dimmer circuit which gives a visual indication of the dimmer activity. Also provided is another LED indicator which warns of a fault in that module.

Dimmer and Rack Maintenance

The MX system, like all electrical / electronic equipment is affected by the presence of dirt and dust. We recommend the rack be opened, the modules removed and all items cleaned to remove this dust.
Pleases follow this procedure:
- •Shutdown and Disconnect Power.
- •Remove the door.
- •Remove each dimmer module and individually clean either by vacuum or low pressure com pressed air.
- •Clean the other interior areas of the rack in the same manner as the individual modules.
- •Inspect the internal connections of the main feeders and of the branches to the module plugs.
- •Inspect the connector ends for discoloration indicating a poor connection.
- •After cleaning and inspection, replace the modules and the door.

Note: Annual cleaning is recommended, more frequently if the environment is particularly dirty.

To help prevent the build up of dirt, the Electrostatic Air Filters may be cleaned or replaced frequently.
To clean the Air filters:
- •Remove air filters from door.
- • Wash with a light to medium pressure water spray. Use cold to luke-warm water.
- • Allow to dry and replace.

Note: The filter(s) must be replaced with the correct side facing the interior of the cabinet.

Dimmer Removal / Installation

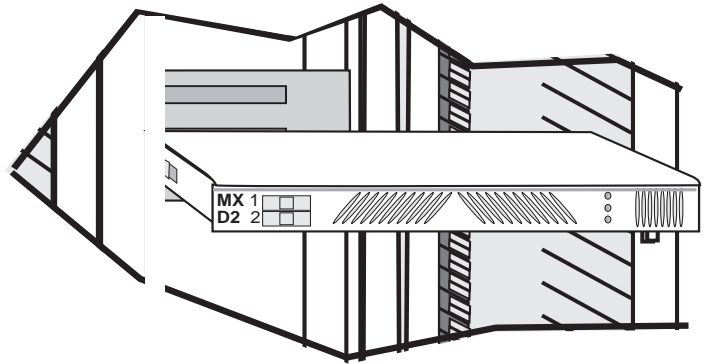To remove a dimmer from an MX rack please follow this procedure:

- Be certain of the position of the Dimmer Module to be removed. Locate this Module by using the Circuit numbering label located to the left of the dimmers (Ck #_).
- Locate the Circuit Breakers - Switches to the left on the face of the Module to be removed.
- Move the switch toggles to the OFF position.
- Firmly grasp the top lip of the Module and pull the Module directly out of the module bay.

To replace a dimmer module:

- Locate the correct circuit numbers, note there may be a pair of circuits per each dimmer module.
- After carefully lining up the sides of the modules

with the appropriate shelf slots, slide the module in very firmly to assure solid connections are made.

DO NOT SLAM MODULES INTO THE RACK!

Troubleshooting Guide

Symptom	Possible Cause	Remedy
Nothing works, green indicators 1, 2, and 3 are dark.	Blown fuse in rack Input power source is off.	Check input power source.
A dimmer circuit is always OFF.	The dimmer module is not plugged in. Defective solid-state relay. Circuit Breaker is off.	Make sure dimmer is firmly plugged in all the way. Check control wiring connector to solid state relays. Replace the solid-state relay. Turn on circuit breaker.
All of the lamps "ghost" (glow).	Dimmer preheat set too high. Control out of calibration.	Reduce preheat level. Contact the factory.
The dmx signal indicator flashes, lamps flicker, or dimmers refuse to respond to dmx signal.	Bad DMX source. Bad DMX cable.	Check source. Check the dimmer pack with a known good cable.
The dimmer pack overheats.	The cooling vents are blocked. The dimmer module is full of dust. The dimmer is in a very warm location.	Clear any obstructions to the cooling vents. Carefully remove dust and dirt with compressed air or a vacuum cleaner. Relocate the dimmer to a cooler location.

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Extreme caution is advised when liquids, food and cigarettes are near any equipment.

During severe electrical storms, equipment should be disconnected.

Failure to adhere to these requirements may result in malfunction or serious damage.

Please Note:

Maintenance of your Dimmer Rack and the Modules is very Important. Such maintenance will help to prevent failure and prolong component life.

It is very important all the slots in the rack be filled for proper cooling airflow. If a module must be removed, replace the module with a module blank.

Replacement Parts

Replacement parts are available from Electronics Diversified, Inc.

To obtain replacement parts, call (800) 547-2690 and ask for Customer Service.

Since these systems are customized for individual applications, it is important that you have the following information available when you call.

     The equipment type or number

     Serial number

     Original EDI system drawing number

     (As-Built Drawing Number)

     Please SPECIFY LINE VOLTAGE.

When calling, the customer service representative will help to determine the proper part you need, and any additional parts, if necessary, depending upon your requirement.

Service

EDI 24 hour Service / Support Network.
For technical questions about this product or
operational assistance contact Customer Service at: . . . . .1-800-547-2690 or 1-503-645-5533

You may communicate by FAX: 1-503-629-9877
Internet: . . . . www.EDIonline.com
Internet E-Mail: . . . . Support@EDIonline.com

If your Mark X Dimmer Bank needs repair, call 503-645-5533 for a Return Materials Authorization number. At that time you will be given a ***shipping address*** .

This is a product of: **Electronics Diversified, Inc.**

1675 N.W. Cornelius Pass Road, Hillsboro, Oregon 97124 USA

Attention MX System Owners!

Please return this Registration Card As soon as possible!

Your prompt attention to this matter will ensure your receiving updated technical information for this product as it becomes available. Please complete all information.

Name: _____

Title: _____

Facility and/or Company: _____

_____

Street Address: _____

_____

City: _____ State: _____ Zip: _____

Phone: _____

Fax: _____

E-mail: _____

Web site: _____

Mail to:
EDI User Manual Registration
1675 NW Cornelius Pass Road
Hillsboro, Oregon 97124

or FAX to: (503) 629-9877

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