Performance Controls

MX Dimmer Rack

Features

- Plug-in Modular System
- 96 2.4Kw Dimmer Capacity
- User Programmable Control Module
- Integral Main Circuit Breaker Option
- Off-line Programming via PC Interface
- User Configurable Panic Input Assignments
- Real-time Dimmer Feedback Option (DIS)
- SCR Dimmer Modules
- Custom SCR Rise Times and Custom Curves for Incandescent, Low Voltage, and Non-incandescent Loads Available
- U.L. and c-U.L. Listed

Description

The MX System represents a new standard for compact modular dimming. The rack is suitable for medium-to-large theater installations as well as large architectural dimming systems. The rack controls are sophisticated enough to satisfy the theater professional, yet provide easy-to-use programming and troubleshooting for the general facilities manager.

The MX System provides the user with the latest in dimming technology, including: off-line programming via any IBM-compatible PC or the hand-held programmer; assignable, patchable DMX inputs; backup memories with remote access; LCD status indicators. The unique three-phase vertical bus bar allows up to 96 dimmers to be sequentially numbered in the cabinet with no two consecutive dimmer modules on the same phase.

Technical Information

Access:

All load outputs, control signal inputs and main power terminals are accessible from the front of the rack.

Control Input:

All dimmer control electronics are contained in one plug-in control module. There is provision for two optically isolated DMX512 inputs and up to twelve (12) 0 - +10V analog inputs.

Convenience Panels:

Each rack is supplied with a convenience panel containing one 20 Amp, 120 Volt, 60 Hz, AC (220/240 Volt, 50 Hz) grounded duplex power outlet.

Dimmer Modules:

A complete range of plug-in SCR control of incandescent, low voltage, fluorescent, neon, cold-cathode and non-dimmed loads.

Front Locking Door:

The dimmer bank is supplied with a full-height locking door to prevent unauthorized access to the equipment.

Filtered Cooling System:

Each rack is forced-air cooled via a low-noise fan which draws air through an electrostatic air filter. The filter is removable for cleaning.

Optional:

System Protection:

An intregal main circuit breaker is available to disconnect all power to the system.

Inter-rack bussing kit.

Dimmer Information System (DIS):

Real-time feedback of dimmer status, current and output/input voltage is an available added feature.

JOB NUMBER:

JOB NAME:

CUSTOMER:

P. O. #

APPROVAL STAMP

Electronics Diversified, Inc.

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MX Dimmer Rack

Electrical Characteristics

Input Power: 120/208 VAC, 3-phase, 4-wire plus ground, 50/60Hz. Other voltage and phase options available upon request.

Operating Environment: Temperature range: 32° F. (0° C) to 104° F. (40° C). Humidity range: 0% - 90% non-condensing.

Overcurrent: Up to 100,000 AIC available, U.L. & c-U.L. Listed.

Interaction: No interaction between dimmers..

Control Response: 25 milliseconds or better.

Mechanical Characteristics

Enclosure: Tubular steel frame with code gauge panels finished in scuff and impact resistant paint.

Circuit Cards: Plug-in style, U.L. recognized with FR-4 mill grade material..

Dimensions: MX-24:
48" H x 21" W x 21" D (121.9 cm x 53.3 cm x 53.3 cm)
MX-48:
84" H x 21" W x 21" D (213-4 cm x 53.3 cm x 53.3 cm)

Maximum Module Count:

	With Main Breaker	Main Lugs Only
MX-12		12 Modules
MX-24	12 Modules	24 Modules
MX-48	36 Modules	48 Modules

Ship. Weight: MX-24 . . . . . 275-325 lbs. (125-147 kg)
MX-48 . . . . . 400-450 lbs. (181-204 kg)

Specifications

1. The rack shall be a freestanding, dead front switchboard, substantially framed and enclosed with code gauge steel panels. All rack components shall be properly treated, primed and finished. Exterior surfaces shall be finely textured with scratch resistant, two-part polyurethane or equal. Removable top, side, back and bottom panels shall facilitate conduit termination. Racks shall be designed for front access to allow back-to-back or side-by-side installation.
2. Racks shall be designed to allow easy insertion and removal of all modules without the use of tools. Internal supports shall be provided for precise alignment of dimmer modules into power and signal connector blocks. With modules removed, racks shall provide clear front access to all load, neutral and control terminations. Racks that require removable panels to access load, neutral or control terminations shall not be acceptable. An optional buss kit shall be available from the factory to allow adjacent racks to be powered by a single line feed. The rack shall be configured to accept mixed dimmer types and ratings throughout the rack.
3. Each rack shall provide a lockable full-height door containing an electrostatic air filter that shall be removable for easy cleaning. Forced air cooling of the rack shall be provided via a low noise fan. The fan shall turn on whenever any dimmer in the system is activated. In the event of an over-temperature condition, only the affected dimmer module(s) shall shut down and an LED indicator shall appear on the affected dimmer module(s) and the control module. The fans shall remain on during thermal shutdown of individual dimmer modules.
4. Each rack shall be supplied with a convenience panel containing a 20 Amp, 120 Volt, 60 Hz, AC (220/240 Volt, 50 Hz) grounded duplex power outlet.
5. The dimmer rack shall be equipped with an illuminated LCD status beacon. The LCD status beacon shall display rack status and messages.
6. The standard rack shall have a vertical phase buss rated for 100% continuous duty and a system fault current rating of up to 100,000 AIC. The dimmer rack shall have the capacity to house an optional system main breaker. The main breaker shall serve as a disconnect for the system. The system shall have an AIC rating limited by the main breaker. (Specify if required.)
7. The dimmer modules will be sequentially numbered, labeled and addressed from top to bottom. No two consecutive dimmer modules shall be on the same phase.
8. All control wiring shall conform to the recommended practices for DMX512 as published by USITT and ESTA.
9. Dimmer control electronics shall be contained in one plug-in control module. The control module shall contain rack status indicators. The control module shall include a single function service switch that shall allow the end user to bypass the control electronics configuration. When activated the service switch shall drive all circuits to full output.
10. A hand-held remote control keypad with LCD display shall be provided for system configuration, testing and diagnostics. The LCD remote keypad shall also display rack status and messages. All control module system functions may be activated by a hand-held remote control keypad. Systems that do not offer this feature shall not be acceptable.
11. A minimum of two (2) optically isolated DMX512 inputs shall be provided, allowing overlapping or separation of any control level. Twenty-five hundred volts (2,500 V) of optical isolation shall be provided between the DMX512 inputs and the control module. Optical isolation shall protect the DMX512 inputs from a failed control module and shall protect the control module from failed DMX512 inputs. Systems that do not have optical isolation shall not be acceptable.
12. There shall be provision for a minimum of twelve (12) 0 - +10V analog inputs to allow for analog control of the rack. Each dimmer may be assigned to any one of the twelve analog inputs. When so supplied, the analog input option shall not reduce the number of incoming DMX512 signals.
13. With the exception of the optional analog inputs, the control module shall be completely digital without employing any digital-to-analog demultiplexing schemes or analog ramping circuits. Each rack shall, in the event of signal loss, maintain the last level for a user-programmable time. Systems that do not offer this feature shall not be acceptable.
14. Two separate and distinct patches shall be available. Selection between the patches shall be possible by a remote control. Each dimmer may be individually assigned a specific address for each DMX512 input.
15. The control module shall contain diagnostic routines that allow the user to test and troubleshoot the system. A system-wide panic circuit shall be provided. Any dimmer or group of dimmers in any rack may be assigned proportionally to the panic circuit.
16. The control module shall be able to record backup looks. Backup looks may be programmed by any of the following methods: recording current dimmer levels (as set by the console or other remote programming device); entering dimmer levels on the control module directly. Multiple backup looks may be active simultaneously with inputs operating on a highest take precedence basis.
17. The unit shall be the MX Dimmer Rack System as manufactured by Electronics Diversified, Inc., Hillsboro, Oregon 97124.

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