



Performance Controls

Mark VII Dimmer Rack



Features

- Modular design
- Quiet, reliable operation
- Dead Front construction
- Individually cooled plug-in dimmer module positions
- Operates simultaneously on analog and digital control signals
- Custom configurations of branch circuit breakers and relays
- Designed for control of incandescent, low voltage, cold-cathode, neon, and fluorescent sources
- Multi-Link digital electronics supports USITT DMX 512, AMX 192, RS422,
- Fiber-Link and simultaneous 0-10 Volt analog control signals
- Pre-wired and assembled for ease of installation
- Optional analog backup system
- Optional 100,000 AIC rating
- 120-120/220-240 volt operation
- U.L. listed

Description

The modular design of the Mark VII dimmer rack incorporates "Dead Front" construction, accomplished by recessing all high-voltage connectors in phenolic blocks for isolation and protection from electrical currents.

Removable tray assemblies inside the Mark VII assure positive alignment of load and control connections, while allowing easy access for installation and maintenance.

The system is phase-balanced engineered, with no more than two consecutively numbered dimmer outputs on the same phase.

Component Information

STANDARD:

Full Front Access:

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

Digital/Analog Input:

Multi-Link digital control inputs plus analog inputs are on a highest-takes- precedence basis. Individual dimmers may be addressed with either digital and/or analog control signals for operation.

Dimmer Modules:

A complete range of fully-enclosed plug-in dimmer modules from 10 Amp to 100 Amp capacities insure compatibility with field requirements.

Convenience Panels:

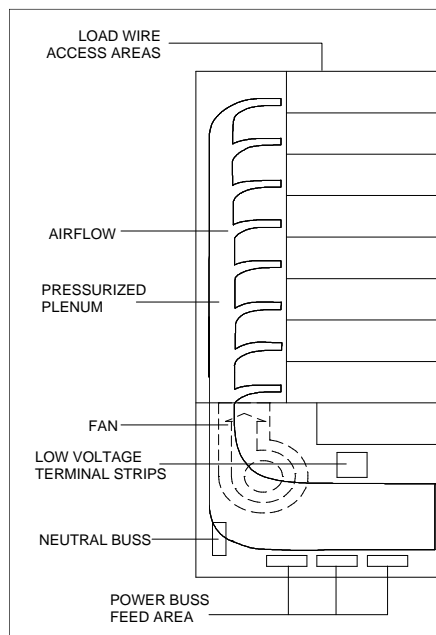
Each rack is supplied with panel mount receptacles for digital and/or analog controls. Three control breakers and one breaker-protected 20 Amp, 120 Volt, 60Hz, AC (220/240 Volt, 50Hz) grounded outlet are included.

Filtered Cooling System:

Each module is individually fed from the pressurized plenum to insure consistent cooling capacity. Air is filtered on the intake.

Front Locking Door:

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



OPTIONAL:

System Protection:

An integrated main circuit breaker can be mounted inside the rack to disconnect all power to the system.

Dual Fans:

Back-up capacity for consistent, reliable cooling.

Custom Load Distribution:

Outputs can be configured to custom branch circuit breaker panels integrated into the system. Special requirements for load applications of 10, 15, 20, 30, 50 & 100 amps, single or 3-phase can be accommodated.

Remote Control Contactors:

Distributed power can be routed to constant, non-dim, or worklight contactors located in the rack. All contactors are circuit breaker protected, and can be controlled individually in the dimmer rack, or remotely by DMX or analog controls.

Analog Backup:

Multi-Link control electronics with unique wire pin matrix patch offers user selectable stand-alone control of dimmers in the system on 10 discrete channels remote from the dimmer bank at any specified location.

SubCommander Backup:

Stand-alone control electronics have the capacity to record and playback cue information. Off-line storage is also provided.

Job Number:

Customer:

Approval Stamp:

Job Name:

P.O.:

Electronics Diversified, Inc.

PRODUCT DATA SHEET

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P100

Electrical Characteristics

Input Power: 120/208 VAC, 3-phase, 4-wire plus ground, or 120/240 VAC, single phase, 3-wire plus ground. 220/415 - 240/440 VAC, 50Hz., three-wire plus earth.

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

Overcurrent: 10,000 AIC, U.L. listed, fully magnetic circuit breakers in modules

Interaction: No interaction between dimmers.

No Load Loss: Less than 1 watt.

Control Response: 50 milliseconds or better.

Mechanical Characteristics

Enclosure: Tubular steel frame with 16-gauge panels, finished in black epoxy paint. Silk-screened nomenclature.

Circuit Cards: Plug-in style, double-sided, through-hole plated, U.L. recognized w/G-10 fiberglass rated FR-4.

Dimensions: 61" H x 28" W x 24" D (short bay) = 96 x 20A (154.94cm x 70cm x 60.96cm)
87" H x 28" W x 24" D (single bay) = 192 x 20A (220.98cm x 70cm x 60.96cm)

Ship. Weight: 450-550 lbs. (short bay) (204-250 kg)
650-700 lbs. (single bay) (295-318 kg)

Specifications
MARK VII DIMMER RACK ASSEMBLY

1. The dimmer bank enclosure shall be constructed of code-gauge materials finished with black enamel. Auxiliary equipment mounting rails shall be constructed of code-gauge cold rolled steel finished with epoxy. The rack frame shall have brackets inside the bottom corners for 1/2" floor bolts. The dimmer bank shall not exceed 87" H x 24" D x 28" W for each dimmer rack required. Side panels shall be removable.
2. The dimmer rack shall be of dead-front construction, even with dimmer modules removed. All power connections for the dimmer shall be oversized and recessed in phenolic blocks. Dimmer racks with exposed power connections will not be considered equal.
3. All power load wires shall terminate at the receptacle pin where the module plugs in the rack. All neutral wires shall terminate at the neutral bus in the base of the rack. All terminations, both load and control, shall be accessible from the front of the assembly.
4. All load circuit wiring throughout the dimmer rack shall be constructed of stranded tinned copper wire with silicon rubber insulation covered with coated glass braid, rated at 200° C, sized in accordance with the National Electrical Code.
5. All bus bars shall be of solid copper construction, predrilled for feeder lugs (provided by others). Aluminum or aluminum alloy bus bars and feed connections are not acceptable.
6. Dimmer module control connectors shall be designed so that modules of a greater capacity cannot be operated within the rated capacity of the wired position. No more than two consecutive numbered dimmers will be on the same phase.
7. All internal wiring shall be complete and ready for connection by the electrical contractor to power, loads, and other major system components.
8. Dimmer bays shall incorporate appropriate ducting to provide forced air cooling for each dimmer module, with no two dimmer modules sharing the same air vent. Cooling air shall be drawn through a filter and into a pressurized plenum, exhausted out of the front of the dimmer module. Dimmer racks without individual cooling vents are not acceptable.
9. Each dimmer rack shall have wired spaces for stage dimmers and house dimmers contained in the same dimmer rack. Controls for stage and house dimmers may operate independently, simultaneously, or on a highest-takes-precedence basis.
10. The complete dimmer rack shall be U.L. Listed, labeled, and shall be capable of a U.L. rating of up to 100,000 AIC (inclusive of feed, bus bars, and distribution).
11. The dimmer rack shall have the capacity to house a system main breaker in the base of the rack. The main breaker shall serve as a disconnect for the system. (Optional...specify size if required).
12. Front accessory panels shall be mounted flush with, and finished to match the dimmer front panels.
13. The dimmer rack may have all components secured behind a hinged locking door which does not restrict air flow.
14. The dimmer rack shall be the MARK VII Series, as manufactured by Electronics Diversified, Inc., Hillsboro, OR USA.

CONTROL MODULE

1. The plug-in control module shall be a self-contained unit which will slide into the front of the dimmer bank.
2. The control module shall properly receive USITT DMX-512 digital multiplex, AMX-192 analog multiplex, or RS 422 digital multiplex, fiber optic or 0-10 Volt analog signals. Digital signals shall terminate in 5-pin XLR-type connectors. Fiber optic transmissions shall terminate in an optical coupler. Analog controls shall terminate in a 25-pin D-style connector. The multiplex format may be changed by a single front panel-mounted switch.
3. A control module option shall allow multiplexed digital dimmer information to be properly received over a single fiber optic cable. The unit shall allow 200 ft. runs with one receiver and one transmitter.
4. A yellow indicator shall illuminate upon receipt of a valid digital signal. A momentary interruption of a digital signal shall not affect dimmer output.
5. The dimming system shall be able to operate simultaneously on a digital multiplex signal and analog 0-10 volt signal.
6. The module shall illuminate a pilot light for each power phase during operation. Input power to the control module shall be breakered and fused.
7. All dimmer control electronics shall be contained on a double-sided, through-hole plated fiberglass circuit board.
8. The control module shall be a recognized component of Underwriters Laboratories and so labeled.
9. The unit shall be the Multi-Link series as manufactured by Electronics Diversified, Inc., Hillsboro, OR 97124 USA.