



THYRISTOR DIMMERS

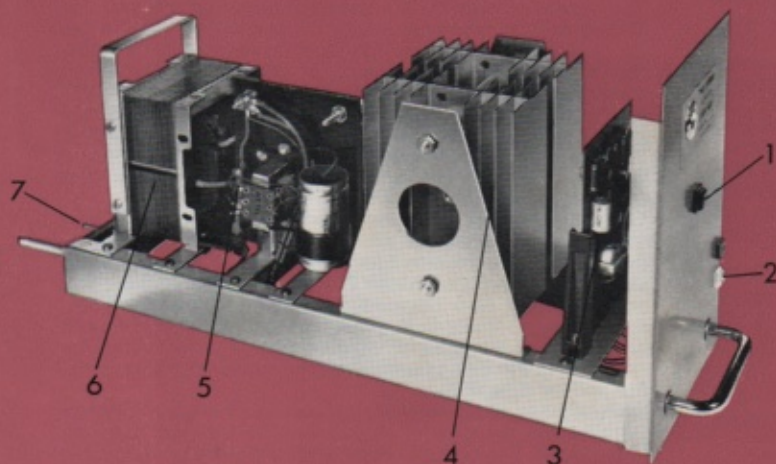
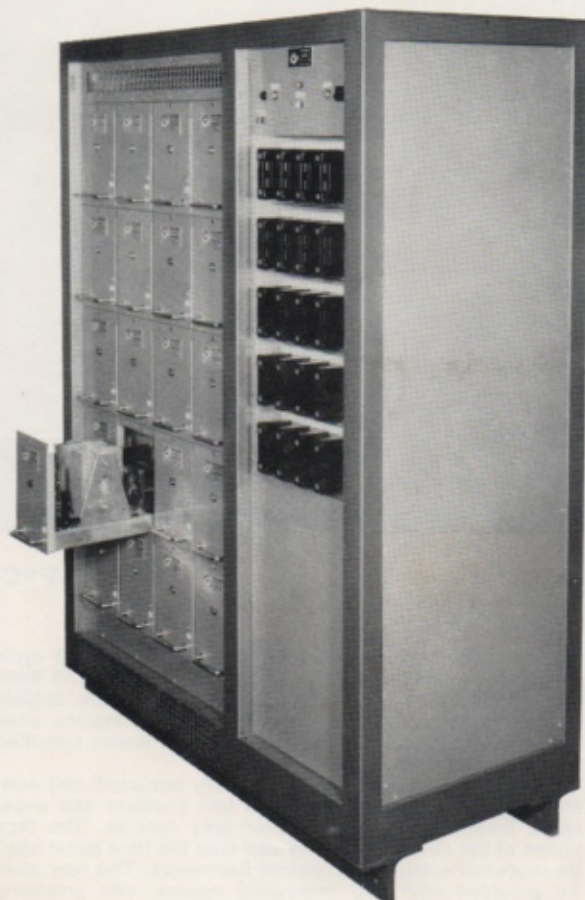
Type TM Dimmers and Racks

60/5000W; 60/2500W 200/240v AC

Twenty of these self-contained plug-in dimmer modules are housed in each rack which is fitted with special high-speed fuses. The 60/5000-watt and 60/2500-watt sizes are interchangeable. Both contain a large filter network to increase the rise time of the output waveform to more than 750 micro-seconds at the 90° point in the power cycle without incurring a consequential load voltage reduction.

The tungsten filament lamp load is regulated by a pair of thyristors which in turn are controlled by a plug-in printed circuit amplifier. Adjustments are provided to allow square law, cube law or linear light dimming curve characteristics.

These dimmers and dimmer racks are recommended for television studios where the high standard of filtering is desirable and also for large theatres and opera houses where large dimmer capacities are required.

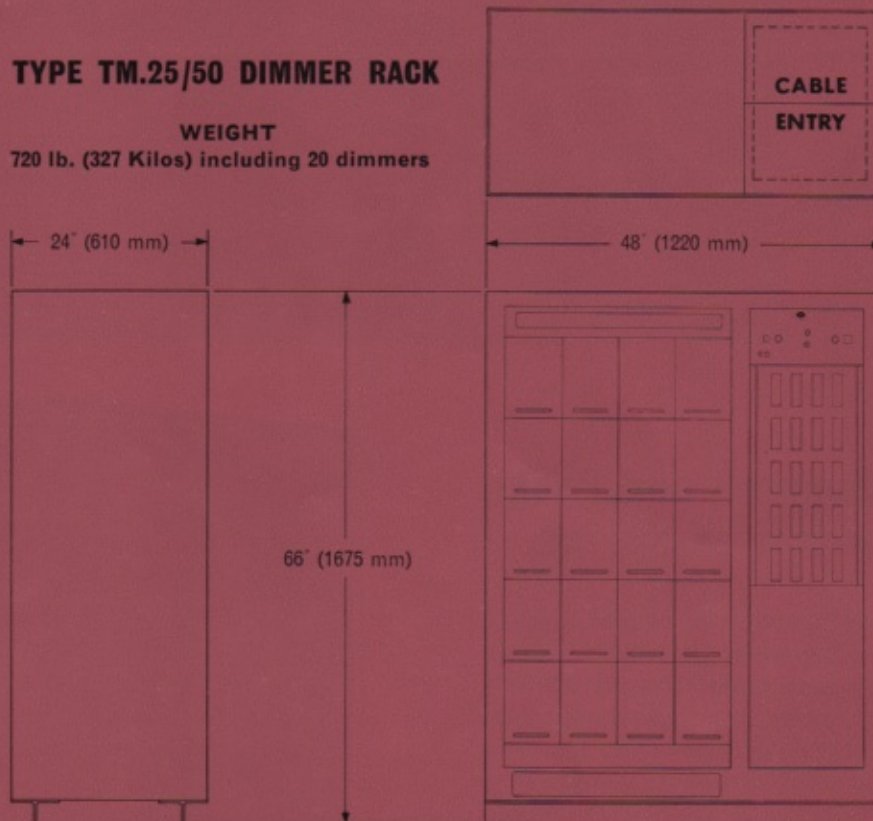


1. Pilot lamp for fused-supply indication
2. Test points for rapid monitoring of control signal and AC output voltage
3. Plug-in printed circuit amplifier
4. Generous heat sinks for the pair of thyristors
5. Fuse for the self-contained control circuit power supplies
6. Inductive filter to provide 750 micro-seconds rise time at the 90° point in the power cycle
7. Multi-contact pins for all control and power connections

TYPE TM.25/50 DIMMER RACK

WEIGHT

720 lb. (327 Kilos) including 20 dimmers



SPECIFICATION

DIMMER RACKS

Each dimmer rack shall be for a 3-phase 4-wire 50 cycle supply and shall house a total of twenty type TM.50 5000-watt maximum or type TM.25 2500-watt maximum, 200/240 volt, dimmer modules as specified. The dimmers shall be connected in phase sequence unless otherwise specified at the time of order.

The free-standing rack shall be totally enclosed and constructed of preformed aluminium box sections and pressings finished two-tone hammer grey outside. The face plates of the dimmer modules and also the fuse panel shall be recessed within the principal framework. The rear shall be provided with two removable covers, one providing access to the separate compartment for all external connections. Two removable plates shall be provided over this compartment to facilitate cable entry.

The rack shall be factory-wired to take 5000-watt dimmers with all external connections brought to suitable terminals in a separate compartment behind the fuse panel. To suit certain wiring systems an earth/ground terminal for each dimmer shall always be included. A recessed shrouded-contact fuse shall be provided for each dimmer channel and the fuse bridge shall be fitted with a specially designed high-speed cartridge fuse to give full load fault protection.

Each rack shall include internal ventilation equipment to limit the operating temperature to less than 95°F (35°C) providing the ambient temperature does not rise above 85°F (30°C). Red and green pilot lamps shall indicate whether the safe internal temperature is being maintained and provision shall be made to duplicate this indication, if required, at the control desk.

The total heat dissipation by the dimmers and their associated filters shall not exceed 5% of either the maximum supply capacity or the maximum load capacity, whichever is the smaller.

VARIATIONS

Similar equipment is available for 110/120v 60 cycle supplies.

DIMMER MODULES

Each dimmer shall be a self-contained plug-in unit on a rack mounting sliding chassis fitted with a face plate and a handle. The dimmer module shall be removable from the

front by withdrawing a single retaining screw. The chassis shall be fitted with rigid guide pins and self-aligning contacts for all control and power connections to the mounting racks. The control connections shall make after, but open before, the power connections. The face plate shall contain a colour-coded voltage and maximum load rating label, a pilot light to indicate the operative status of the dimmer and test points to permit the control signal and output voltage to be monitored.

The regulation of the tungsten filament lamp load shall be wholly by a pair of thyristors (controlled rectifiers) and these shall be of a type which will allow the full tungsten surge current to flow. The output shall be AC with a waveform which is completely symmetrical with respect to the zero voltage and current. An inductive filter shall be included which, with the maximum load, shall increase the rise time to not less than 750 micro-seconds at the 90° point in the power cycle. The maximum output shall not be less than 98% of the supply voltage.

The output voltage to any load between the minimum of 60-watt and the maximum rating of the dimmer shall follow the control signal in less than one second without oscillation or any other form of transient disturbance. A 60-watt lamp load shall have the same dimming curve characteristics as the maximum load rating and the addition of load to a partially loaded dimmer shall not alter these characteristics. There shall be no restriction whatsoever on the addition of load to a partially loaded dimmer provided the total load does not exceed the maximum rating.

The plug-in printed circuit amplifier shall have 'full' and 'zero' trimming adjustments to allow the dimming curve characteristics of dimmers with equal loads and with equal control signals to be matched within 2% of the supply voltage. The amplifier shall also have adjustments to allow cube law, square law, or linear light dimming curve characteristics to be preset at the time of manufacture. Unless otherwise specified at the time of manufacture square law characteristics will be provided.

Each dimmer shall generate its own control circuit power supplies but the control circuit shall be isolated from the load circuit. The control signal shall not need to be related to the phase of the load circuit nor shall any other electrical relationship have to be maintained. The control signal shall not exceed 24v 2mA and there shall be no limitation on the length of the control cable.