zero 88 lighting ltd **RACKMASTER 660 - OWNERS MANUAL**

The Zero 88 Rackmaster 660 Series Dimmer Packs are professional six channel power controllers capable of driving up to 10 Amps of lighting loads per channel. These loads may be resistive or inductive and include tungsten, neon, transformer driven low voltage (eg pinspots), and quartz halogen.
The Rackmaster 660 is available in several versions each with six outlets conforming to various national requirements.

FRONT PANEL CONTROLS

LAMP PREHEAT

In common with other professional Dimmer Packs, each Rackmaster control input has a defined 'OFF' state in addition to its normal control range.

Input:	Voltage	(Disconnected)	-1	0	+10	Volts
	Current	(Disconnected)	0	1	4.3	mA
Output:		OFF		PREHEAT	MAXIMUM	

Each pair of channels has a preheat adjustment on the front panel. These may be used to set the preheat level of the channels PROVIDED that a controller is connected and set to minimum level on both the channels that are being adjusted.

DIAGNOSTIC LIGHTS

The green lights on each control board have the following functions:

Ref OK : When lit the reference circuit is OK

Channel: Will be on slightly WHENEVER a controller is connected Shows that the electronics driving the opto isolator is OK. If any light is completely out, check that the signal cable is OK.

FUSE BLOWN NEONS

Next to each channel fuse is a red neon which will glow if the fuse is blown PROVIDED a load is connected.

INDUCTIVE LOADS

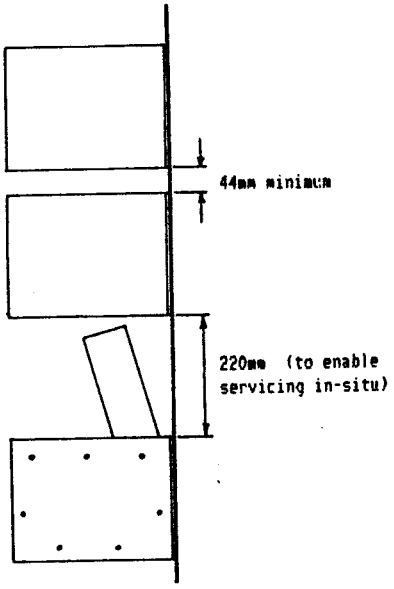
All inductive loads (eg pinspots, neon; any transformer driven lamp) MUST be fitted with the correct value fuse. This is the lowest value that will not blow in normal use. Failure to fit the correct fuse may mean that any supply disturbances could destroy the lamp transformer. For a single pinspot, a 500mA Quick Blow or 250mA AntiSurge fuse should be used.

ALTERNATIVE SOCKET ARRANGEMENTS

The socket panel which forms the bottom of the Rackmaster may be removed and turned round so that the sockets face the rear of the rack. When this is done, the socket that was Channel 1 becomes Channel 6 , Channel 2 becomes 5 and so on.
To convert a Rackmaster, the wiring to each control board must first be carefully marked, then unplugged, keeping the group of wires to each control board together. Remove the socket panel, turn round and reconnect, noting that the wires from the socket panel for control board channels 1 & 2 should now be plugged into the control board for channels 6 & 5. The wires from 5 & 6 now go to 2 & 1; wires from 3 & 4 go to 4 & 3. A wiring diagram is available from your dealer or direct from Zero 88.

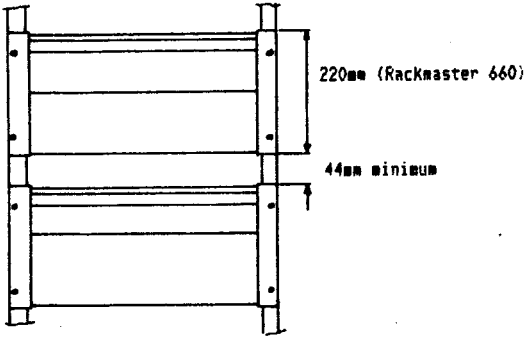
*** AMBIENT TEMPERATURE MUST NOT EXCEED 45°C ***

INSTALLATION
WALL MOUNTING

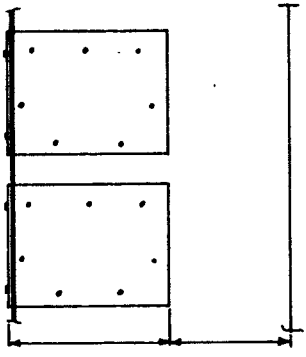


The sides of the Rackmaster may be removed, changed over (left for right and right for left) and replaced so that the mounting flanges are at the rear.

The Cable Supply clamp should be fitted at the front. If it is essential that the supply enters from one side, a 25mm (1") hole should be cut in the bottom half of one side panel in a position where it does not foul the mains input terminals.



MOUNTING IN STANDARD 19" RACKS



For easier servicing, mount each **Rackmaster** on a standard telescopic rack slide.

*** THIS EQUIPMENT MUST BE SECURELY EARTHED AT ALL TIMES ***

ELECTRICAL REQUIREMENTS: SUPPLY

Voltage:	220-240 volts 110-120 volts	Set on EACH control board.
Frequency:	50 or 60 Hz	Set on EACH control board.
Current:	SINGLE PHASE: 60 Amps total load. STAR: 20 Amps per each of three phases. 35 Amps neutral. DELTA: 35 Amps per each of three wires.	
Phase:	One, Two or Three Phase. Star or Delta (220 volts phase to phase)	

The Supply Cable clamp may be mounted on either the front or the rear of the **Rackmaster** using the holes provided.

AN ISOLATION SWITCH MUST BE PROVIDED IN THE SUPPLY CIRCUIT

ELECTRICAL REQUIREMENTS: CONTROL

The **Rackmaster 660** Series will accept 0 to +10 volt or 1 to 4.3 mA control signals; the current input version is identified by an aluminium plate under the XLR input connector. To change over, open the unit as described below, and unscrew the XLR connector remove or replace the aluminium plate as required. (Cutting a small slot in the right hand side of the plate for the cable will save time). Reconnect the four pin plugs to 'Voltage I/P' to 'Current I/P' as required.

CHECK THAT EACH BOARD IS SET THE SAME

WARNING
Zero 88 7 pin XLR signal cables part no 860, 861, and 862, MUST NOT BE USED WITH VOLTAGE INPUT unless they are rewired with the SCREEN connected to the SHELL at BOTH ENDS.
Zero 88 8 way XLR signal cables part no 240, 241, 242 are suitable for both current and voltage use.

SERVICING

FULL SERVICE INFORMATION IS INSIDE EACH RACKMASTER

1. DISCONNECT FROM SUPPLY
2. Unscrew two of the top screws on each side as ringed.
3. Open the top and SECURE OPEN.
4. To change a Main Triac, remove the three wires, unscrew and replace with a new one, reconnect the wires and compare with the other triacs or circuit diagram for correct wiring.
5. To change an opto isolator, simply unplug from its socket and replace with a new one.
6. To change a control board, remove the front control panel (four screws), unplug the wires and signal connector, remove the six securing screws. When the replacement board has been fitted, check the wiring with the other boards.

FAULT FINDING

SYMPTOM	ACTION	RESULT	FAULT
One Channel Dead	1:Check Bulb & Cable	An open circuit check is to unscrew the fuse, the red neon should come FULLY on. If it only comes slightly on, the cable or bulb is open circuit.	
	2:Press Channel Button	1:Red Neon On	10 Amp Fuse Blown
		2:Ref OK on, Channel off	Channel drive circuit dead; Change board.
		3:Ref OK on, Channel on	Main Triac or Opto Isolator dead; replace each in turn to find faulty item.
One Pair of Channels Dead (Common Ref)	Press Both Channel buttons	1:Ref OK off, Both Channels Off	A:Phase dead; CHECK B:Reference circuit dead, change board.
		2:Ref OK on, Both Channels Off	Both channel drive circuits dead, change board.
		3:Ref OK on, Both Channels On	Both channels have one Main Triac and/or one opto isolator dead. See 3 above.

IF NOT CURED, check that all Connectors are pushed on fully

All Channels Dead	Check all Ref OK Lights	1:All off	Mains supply faulty or disconnected.
		2:All on	Press all channel buttons; if lights come on, signal lead or connectors are dead.
One or more Channels work on Test buttons but not with controller	Ensure Test buttons OFF and controller full ON	1:Channel Light(s) completely out	A:Test Signal Cable B:Inspect cable inside Rackmaster between XLR input and each control board