

zero 88 lighting ltd

LS6 DIMMER PACK - OWNERS MANUAL

The Zero 88 LS6 Dimmer Rack is a six channel power controller suitable for all types of lights including neon, dimmable fluorescent, transformer driven low voltage lamps (eg pinspots), tungsten and quartz halogen, in addition to projectors and electric motors.

Each channel will control 2.4KW of resistive load at 240 volts (1.2kW at 120v) or 2.0KVA at 240 volts (1.0KVA at 120v) or any combination of different loads.

A unique remote on/off facility is provided which is especially useful for switching off all the lights driven by one LS6 from a separate location or controller. This can be used to provide a simple zoning facility.

MECHANICAL DETAILS

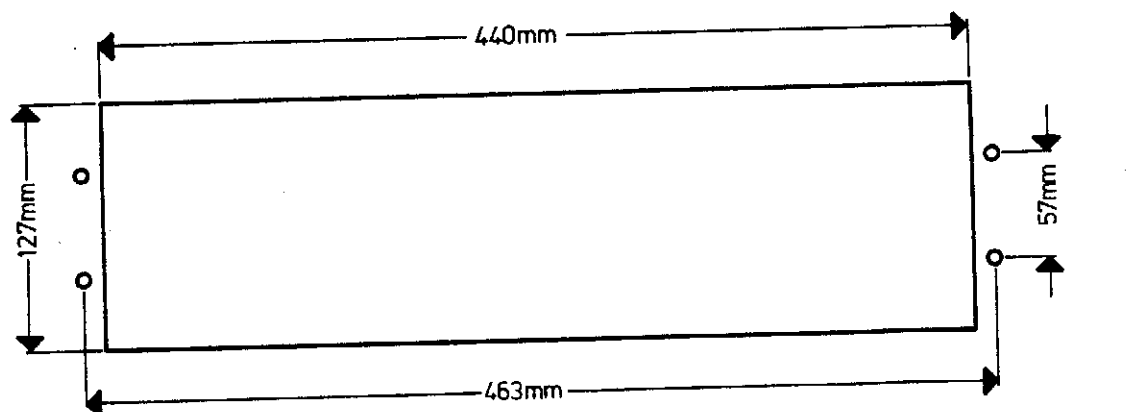
The LS6 is designed for mounting in 19" racks or in consoles. THIS UNIT HAS BEEN DESIGNED FOR STATIC USE. If MOBILE USE is contemplated, secure the rear of the unit firmly to the enclosure using a pair of metal straps or L brackets of the kind available from any hardware store. These may be fixed to the unit using two of the screws securing the rear cover to the chassis. ENSURE THAT ENOUGH SPACE IS LEFT FOR ACCESS TO THE FUSES.

Rack Mounting

The LS6 may be mounted in a standard 19" rack; it is 133mm (5.25in. or 3U) high and requires 270mm (10.5in.) clearance behind the front panel to accommodate the unit and cables. If the rack is enclosed, plenty of room must be allowed for free air circulation. A minimum of 100sq.cm. (16sq.in.) each for intake and exhaust is required. If mounted with other equipment which becomes hot in use, we recommend fitting a fan to the rack. Air intake temperature must not exceed 38 degrees Centigrade. We recommend the use of special vent panels (Zero 88 Product No 747) above every two LS6 units. These are designed to ensure that heat flows out of the rack.

Console Mounting

Fig. 1 shows the cutout and fixing holes required in the consoles. Allow 270mm (10.5 in.) behind the front panel for the unit plus cables. Do not restrict the cooling air flow. Air enters the side of the case, and exhausts from the top. Do not mount in a totally enclosed console - a minimum of 100 sq. cm. (16 sq. in.) each for intake and exhaust is required; air intake temperature must not exceed 38 degrees Centigrade. Servicing may be by rear access or by removing the LS6 from the console.



ELECTRICAL REQUIREMENTS

The LS6 requires a single or three phase supply (star or delta) of 220-240 volts or 110-120 volts at 50 or 60 Hertz. To change from star to delta connection, follow the instructions under 'Mains Supply' below. The total load is 60 amps (14.4KW) at 240v (7.2KW at 120v) if used at its maximum rated capacity.

A GOOD EARTH CONNECTION IS ESSENTIAL

ELECTRICAL CONNECTIONS

The LS6 must be installed and serviced by a qualified technician or engineer. There are no user serviceable parts in the machine.

All power connections are made by means of terminals at the rear of the unit. There is an integral conduit box with 20mm cable entry holes. A suitable isolation switch must be incorporated in the supply circuit, preferably close to the LS6 in an easily accessible position. The control switch on LS6 controls only the electronic supply within the unit. The adjacent neon indicator will glow at all times the supply is connected. **WE STRONGLY ADVISE THE USE OF STRANDED CABLE FOR ALL THE CONNECTIONS.**

Mains Supply

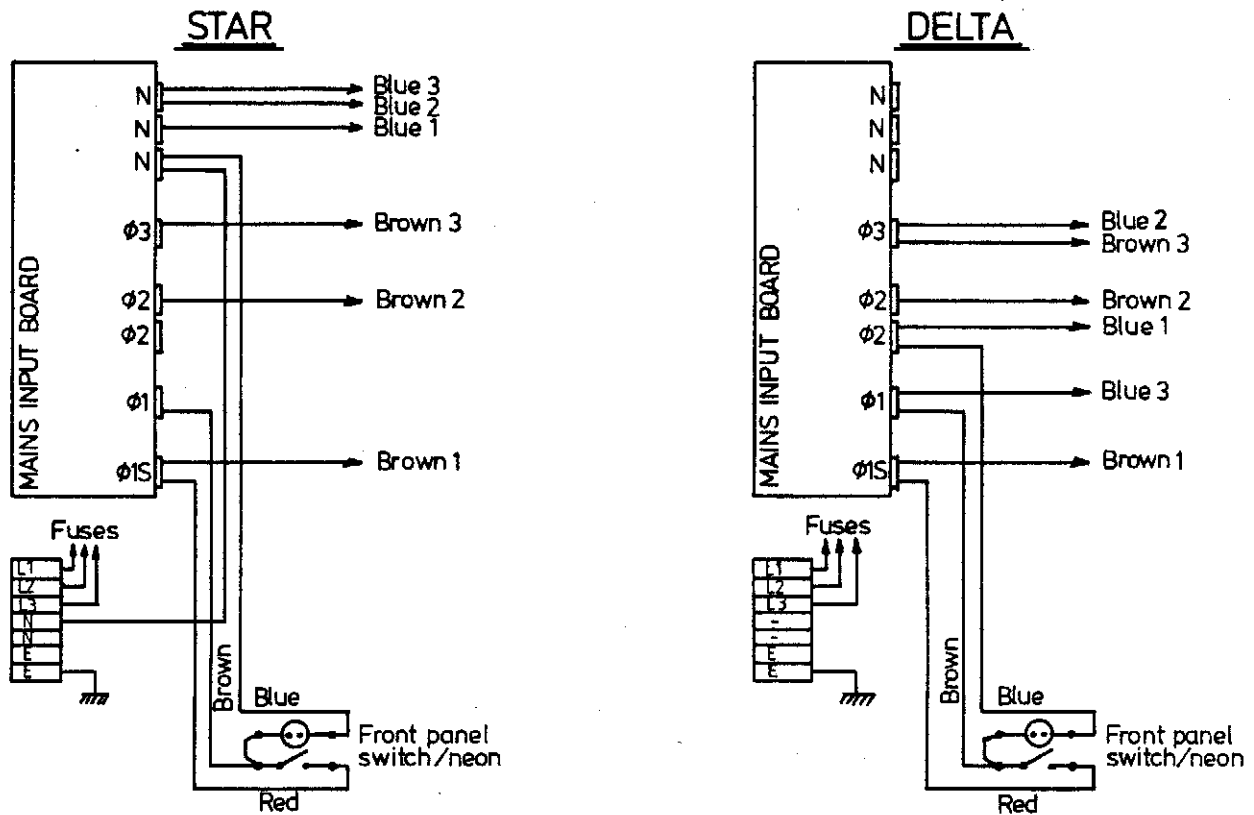
Units are usually supplied connected for 240v operation. Check the label on the carton. To change voltage setting, undo the five screws securing the back plate, and fold down. The voltage changeover switch is inside the machine, to the left of the power printed circuit board and just behind it. The switch is marked 220/110.

There is a shorting plug which sets the frequency of operation. It is supplied set to 50Hz; to change, simply unplug and turn around so that the pin enters the hole next to the '60Hz' marking.

To connect the supply, remove the conduit box cover; on the left is the mains input terminal block. This has large common neutral and earth connections and a three phase live input connection. The unit may be connected for single, two or three phase supplies; it is supplied connected for single phase with a shorting bar across the three live input terminals. To change to three phase (star) remove this single phase shorting bar.

Connection for Delta Mains Supplies

To change from Star to Delta three phase supply, reconnect the internal mains supply wiring as shown in the diagram below.



1. Remove and discard blue wire from 'N' input terminal to mains input board.
2. Move blue wire (from transformer board) marked '1' from 'N' to Phase 2 on mains input board.
3. Move blue wire (from mains neon) from 'N' to Phase 2 on mains input board.
4. Move blue wire (from transformer board) marked '2' from 'N' to Phase 3 on mains input board.
5. Move blue wire (from transformer board) marked '3' from 'N' to Phase 1 on mains input board.
6. Check CAREFULLY before applying power.

THIS SHOULD BE DONE BY QUALIFIED PERSONNEL ONLY

Output Fuses and Triacs

Output fuses are situated to the left of the conduit box cover. Always use approved 10 amp HRC (High Rupturing Capacity) ceramic fuses. Access to the triac is gained by removing the five screws holding the back plate in place and hingeing it downwards. The six triacs will be seen immediately in front of you and may be replaced simply by unplugging their control wires and unscrewing.

Control Input

The LS6 is available in two different versions:

Product	Description	Control
110	3ph Dimmer Rack (Voltage)	0 to +10 volts
115	3ph Dimmer Rack (Current)	1 to 4.3 milliamps

In each controller, the pin connections are:

Pin	Function
1	Channel 1
2	Channel 2
3	Channel 3
4	Channel 4
5	Channel 5
6	Channel 6
7	0 volts (internally connected to earth/chassis)

Control Output

The LS6 has a variety of control outputs available to enable it to drive another LS6, Lightmaster 690 or other dimmer racks. All fit behind the blanking plate to the right of the conduit box. Please contact Zero 88 for full details.

Remote Disable

The LS6 has been designed so that the power outputs can be remotely turned off without affecting the incoming or outgoing control signals. In this way, several LS6 units can be turned off (for blackouts) and/or zoned easily. To use this feature, plug a standard 1/4" jack into the socket on the rear panel marked "Disable".

Jack Connections:

Body	0 volts (internally connected to earth/chassis)
Tip	Control

To Disable, connect Control to 0 volts using a switch or standard TTL logic '0'

Zero 88 Lighting Limited reserves the right to change specifications without prior notice. Information given in this manual is believed to be correct at the time of going to press, but no responsibility can be accepted for any errors.

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