

# Logic 8000s

- Individual 4-channel dimming
- Adjustable minimum and maximum brilliance levels
- 12 built-in programs
- 3 Auto-run programs
- Sound activated or manually adjustable speed
- Manual flash buttons
- 2.3kW power handling per channel
- Terminal block input and output connectors
- Blackout and Flood inputs
- Add-on power-packs available to increase handling capacity

## IMPORTANT

### Installer and Users please note:

**These instructions should be read carefully and left with the user of the product for future reference.**

### INSTALLATION.

The Logic 8000s must be installed by a competent electrician in accordance with the current IEE Wiring Regulations.

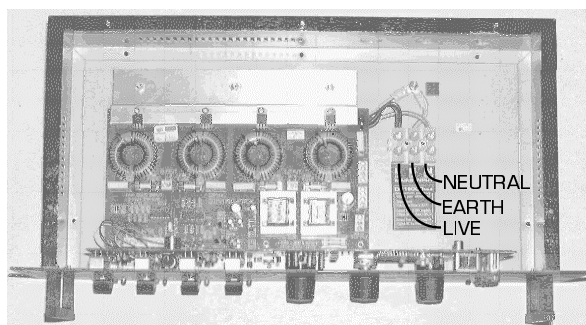
#### Mains input

Remove the top cover, and knock out as many of the 20mm knockouts on the rear panel as are necessary for the wiring. Fit cable glands, or the 20mm grommets supplied into the holes to protect the wires.

If the Logic 8000s is to be used with a Safety Extra Low Voltage supply (12V or 24V) for tubelighting or similar, then refer to the section entitled "*Using the Logic 8000s with a low-voltage supply*".

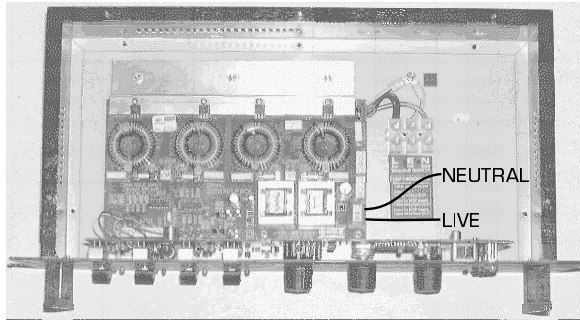
Ensure that the supply to which the Logic 8000s is to be connected is capable of supplying sufficient current for the load connected. If used to its full capacity, a 6mm<sup>2</sup> cable wired to its own 40A circuit breaker will be required. The Logic 8000s must not be wired to a 30A ring main, nor connected via a 13A plug and socket unless the output is de-rated accordingly.

Connect the incoming mains supply (230V) to the large terminal block using 6mm<sup>2</sup> cable:



- Live to the terminal marked L
- Neutral to the terminal marked N
- Earth to the terminal marked E
- The LOGIC 8000s must be earthed.

Also connect LIVE and



NEUTRAL to the terminals labelled "SUPPLY", these connections supply power to the electronics, and requires very little current. 0.5mm<sup>2</sup> wire will suffice.

If connected to a lower capacity supply, the output must be reduced as follows:

- **For a 13A supply**, the maximum total load is 2990W which can be made up of:

- either:** 745W watts on each of the four channels

- or:** different loads on each channel so that the total does not exceed 2990W (but not more than 920W on any one channel)

- or:** 990W load on all channels, in three-channel mode.

- or:** 2300W load may be connected to all four channels provided that the unit is operated so that all four channels are not switched on together at full power.

- **For a 16A supply**, the maximum total load is 3680W which can be made up of:

- either:** 920W watts on each of the four channels

- or:** different loads on each channel so that the total does not exceed 3680W

- or:** 1220W load on all channels, in three-channel mode.

- or:** 2300W load may be connected to all four channels provided that the unit is operated so that all four channels are not switched on together at full power.

- **For a 32A supply**, the maximum total load is 7360W which can be made up of:

- either:** 1840W watts on each of the four channels

- or:** different loads on each channel so that the total does not exceed 7360W

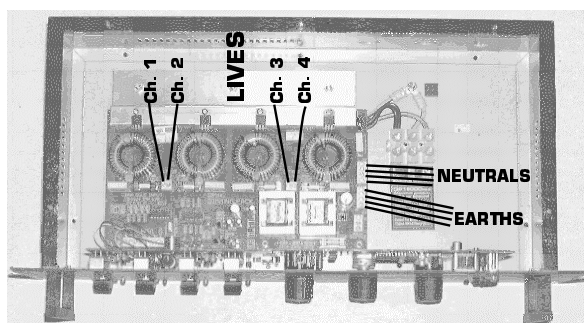
- or:** 2450W load on all channels, in three-channel mode.

- or:** 2300W load may be connected to all four channels provided that the

unit is operated so that all four channels are not switched on together at full power.

### Outputs

Connect the Lives from the loads to the terminal blocks numbered 1, 2, 3 and 4 and labelled with the lightning flash LIVE symbol. The numbers correspond to the channel numbers on the front panel.



Connect the Neutrals from the loads to the terminal block labelled N.

Connect the Earths from the loads to the terminal block labelled with the earth symbol.

If channels are to be used to their full capacity use 1mm<sup>2</sup> wire.

### Interference.

The Logic 8000s is fully suppressed against interference to European Standards, but problems may be encountered if running the output cables too close to sensitive audio circuits. Improved performance can be achieved as follows:

- Each output channel should have its own separate neutral wire of the same length and thickness as the live wire
- Each live output wire should be twisted together with its corresponding Neutral.
- The neutrals from all four channels should be commoned only at the terminal block inside the Logic 8000s.

### Sound input

Connect an audio signal from the speaker output of any amplifier up to 450W rms to the phono socket on the rear of the vertical printed circuit board labelled 'sound'. The sound input has an impedance of 15k $\Omega$  so that it does not affect the loudspeaker/amplifier loading.

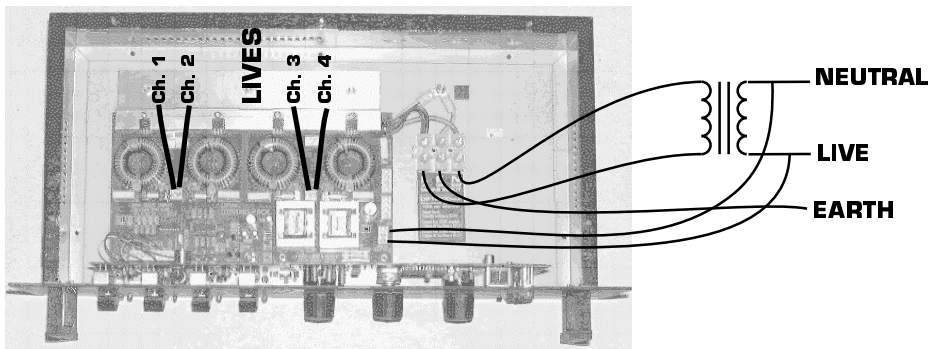
The sound input requires a signal of at least 1.5V rms before it will start to operate (about ½W into 4 $\Omega$ ). This means that the sound-chase may not operate at low levels. (½W is about 96dB(A) on an average pair of PA

speakers)

The Sound input may not be run in the same trunking as the mains wiring. (Regulation 528 of the 16<sup>th</sup> Edition of the IEE Wiring Regulations.)

### Using the Logic 8000s with a low-voltage supply

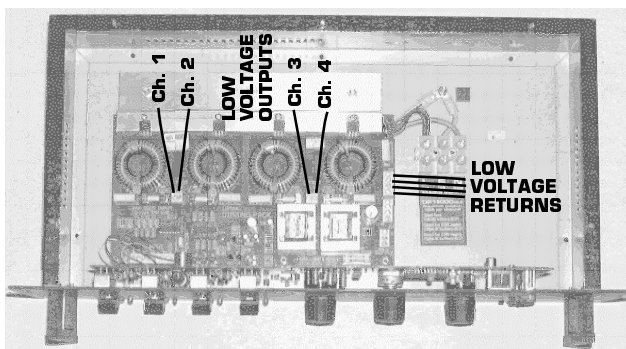
The Logic 8000s has separate supply and electronics connections, to allow it to run multi-channel low-voltage lighting, such as tube-lighting or Starcloth, from a single transformer.



Connect the mains supply Live and Neutral (230VAC) to the terminals on the circuit board to the right of the transformer, labelled 'L' and 'N' (using 0.5mm<sup>2</sup> wire). Connect the mains earth to the terminal on the large terminal block labelled E.

Connect the low-voltage winding from the transformer to the terminals on the large black terminal block labelled 'L' and 'N'.

If the Logic 8000s is to be used to its full capacity (960VA at 24V) 6mm<sup>2</sup> (10 AWG) wire must be used. Do not connect either of the low-voltage connections from the transformer to earth.



Connect the outputs to the lamps to the terminal blocks numbered 1, 2, 3 and 4 and labelled with the lightning flash LIVE

Connect the outputs to the lamps to the terminal blocks numbered 1, 2, 3 and 4 and labelled with the lightning flash LIVE

symbol. The numbers correspond to the channel numbers on the front panel.

Use 1.5mm<sup>2</sup> wire, or 2.5mm<sup>2</sup> wire for long cable runs, to avoid excessive loss due to voltage drop in the cable.

Connect the returns from the lamps to the terminal block labelled N. Neither side of the lamp should be connected to earth.

Wires to the low voltage lamps must not be run in the same conduit as mains wiring.

### **3/4 Channel Selection.**

Your Logic 8000SB is supplied operating as a four-channel controller; if you require it to operate in the three-channel mode, proceed as follows:

Disconnect from the mains and remove the lid. The 3-4 channel switch is located between the printed circuit and the front panel, between the beat switch and the program switch. Using a small screwdriver, move the switch towards the program switch for 3-channel or towards the beat switch for 4-channel.

In 3-channel mode, the fourth slider can be used as a manual dimmer control.

### **Replacing Fuses.**

The Logic 8000sb is fitted with a 10A fuse on each channel, to protect the unit from overload. If the fuse fails, check that the output is not being overloaded (no more than 2300W is connected to each output, or 240W of 24V lighting), before replacing the fuse. In the case of lighting which takes a high surge current (halogen lamps) it may be necessary to reduce the output loading.

To replace the fuse, proceed as follows: DISCONNECT from the mains, remove the five lid-fixing screws located at the top of the case, and remove the lid. The fuses are located on the horizontal printed circuit board. The fuse for channel 1 is at the left of the board, the fuse for channel 4 is towards the right.

Replace the fuse with a F10A HBC fuse (10A fast blow, high breaking capacity). A HBC fuse has a ceramic case. Do not use any other type or value of fuse (this will invalidate the warranty).

Replace the lid, and the lid-fixing screws.

If the channel remains permanently on after replacing the fuse, then the

triac has been damaged (This may happen in the case of an extreme overload or short circuit on the output). If this happens the product should be taken to a dealer for repair. Triacs are not covered by the warranty, because they only fail if the product has been misused or overloaded.

## **OPERATION**

### **4-channel Dimming.**

With the program switch turned to the 0 position, the 4 slider controls can be used as individual channel dimmers. The centre (0) position of the slider is fully off, move the slider towards the on position to increase brightness.

The MODE control should be set to chase or sound chase.

### **Chase facilities.**

With the mode switch in the chase position, normal chasing facilities are provided, the program switch sets the chase pattern (1 - 12), and the speed control sets the chase speed.

Two auto-run selections are provided, "A" runs through all twelve chase patterns, "B" just runs through singles, pairs and triples.

"C" is a random pattern.

### **Hold Reverse**

The hold rev. switch prevents the chaser from reversing, forcing it to run through the patterns in the forward direction only. The green LED lights in hold reverse mode.

### **Soft sound and soft chase**

With the mode switch in the soft chase position, the chaser runs through the chase pattern, increasing each channel from zero to full brightness, and then dimming back to zero. The speed control sets the chase speed, the fade rate is automatically adjusted to match the chase speed. The speed range available on the speed control is extended to provide a very slow 'blend' mode, where the channels are gently crossfaded. This is very effective in three-channel mode using flood lamps of the three primary colours (red, green and blue) when it will produce a constantly changing colour flood.

With the mode switch in the sound chase position, the chase pattern will progress to the bass beat of the music; in soft sound the channels are increased to full brightness and then dimmed to zero to the bass beat of the music. A sound connection is required to the LOGIC 8000s, see 'installation'.

### **Background and foreground levels.**

In all chase modes, the four slider controls can be used to set the

background and foreground levels.

The foreground level is the maximum level reached when the channel is on. This is set by moving the slider control downwards towards off. 0 corresponds to full brightness, off to fully off.

The background level is the minimum level reached when the channel is off. This is set by moving the slider control upwards towards on. 0 corresponds to fully off, on to fully on.

#### **Beat.**

The beat switch flashes all channels together to the beat of the music. In chase and sound chase modes, the channels are brought to the foreground level instantly, and then reduced to zero.

In soft chase the attack and decay times are set by the speed control; in soft sound the channel will be flashed with a fast attack and a slow decay.

A sound to light effect may be produced by selecting program "C" and sound-chase together with Beat

#### **Flash switches.**

The flash switches can be used to force any channel instantly to full brightness, regardless of the settings of foreground and background levels.

#### **Stand-by.**

The stand-by switch disables all chasing facilities, allowing manual operation on the sliders and flash switches only. The stand-by LED shows green during normal operation and red in stand-by mode.

If the LOGIC 8000s needs to be completely disabled, this can be done by either using the 'enable' input on the slave-pack, (see 'Additional Technical Information') or by disconnecting the mains power to the slave pack 240V AC terminals.

#### **Mimic**

The four red LEDs allow the user an instant visual indication of the unit's performing mode.

## Additional Technical Information

**All items in this section must be carried out by a competent electrician.**

### Preheat

Preheat allows a small current to be passed through the filaments of lamps which are 'off'. This current is not sufficient to illuminate the lamp, but keeps the filament warm enough to prevent a large surge when the lamp is brought up to full brightness. This increases lamp life.

The Logic 8000s is supplied with preheat disabled; the preheat adjustment trimmer is on the printed circuit board between the 'enable' terminal block and the transformer. Rotate clockwise using a small insulated screwdriver to increase brightness. The correct setting for the preheat controls is when the lamp filament glows orange (looks like the element of an electric fire)

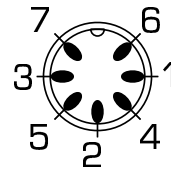
**Exercise extreme care whilst making this adjustment with the power switched on as live mains voltages are present on the printed circuit.**

### Analogue Outputs

0 - 10Volt analogue outputs are provided on the 7-pin DIN socket on the rear of the vertical printed circuit board for connection to further slave packs. This will require a hole to be punched in the case, and a grommet inserted for the cable, or alternatively, a duplicate 5- or 7-pin DIN socket fitted to the rear panel of the case. Connect using a 5-pin DIN plug (pins 6 and 7 must not be connected). Up to 10 NJD DP10000 slave packs (or any other slave packs requiring a 0-10 Volt input) can be connected.

Connections are shown below: Alternatively, connect to the terminal block on the slave pack labelled "Analogue inputs"

Pin 1	channel 1
Pin 2	0 volts (common)
Pin 3	channel 4
Pin 4	channel 2
Pin 5	channel 3
Pins 6,7	do not connect.



**Flood and Blackout.**

If a 4-channel flood override, or blackout override switch is required, then a single pole switch may be connected between the solder pads labelled "Flood" and "0V" (for 4-channel flood) or between "Blackout" and "0V" for blackout. The "flood" and "blackout" pads are located on the rear of the vertical printed circuit board, approximately behind the "Standby" switch, and the "0V" pad is adjacent to the low voltage wires connecting the two pcbs together.

The blackout function only disables the chaser, leaving the sliders active: if a complete blackout is required, overriding the slider controls on the fascia, this may be achieved by removing the link between the "+10V" and "enable" terminals on the horizontal printed circuit board, and connecting a switch between these two terminals.

The switches operate at a maximum of 10V DC, and require negligible current.

## Technical Specification

Size:	483×133×280mm 19"×5¼" (1U)×11"
Weight:	3.6kg
Audio impedance:	15kΩ
Audio input range:	1.5V rms - 60V rms
Power Supply:	230V AC 50Hz 6VA
Maximum load per channel: 10 Amps	2300VA @ 230V AC <i>(2300VA corresponds to 2300Watts resistive load, approximately 1500 Watts inductive load)</i>
	240W @ 24V AC
	120W @ 12V AC
Maximum total load:	40 Amps 9.2kVA @ 230V AC 960W @ 24V AC 480W @ 12V AC

**Reduce to 13 Amps (2.99kVA @ 230V AC) if connecting via a standard 13 Amp (BS1363) mains plug/socket.**

Fuses:	F10A HBC (to IEC127) <i>HBC means "high breaking capacity" - a HBC fuse has a ceramic case.</i>
Connections:	
Audio:	RCA Phono socket.
Mains input:	Terminal block
Mains output:	Terminal block
Analogue outputs:	7-pin DIN socket / terminal block
Triacs:	16 Amp 600V isolated tab
Type:	BTA16-600BW or equivalent

### Standards

The Logic 8000s complies with the following European standards:

**EN60065** (Electrical Safety)

**EN55015** (Electromagnetic Compatibility)

**EN60297** (Fascia panel and mounting dimensions)



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