

# Owner's Information

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## Betapack

### Betapack *Plus*

The Zero 88 Betapack and Betapack *Plus* range of dimmer packs are 4U high 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, transformer driven low voltage (eg. pinspots), and quartz halogen. Some highly inductive loads such as neon will require a ballast load of 100 watts.

### Technical Specifications

#### Electrical:

The Betapack range is designed to operate on 200 to 260v or 100 to 130v ac supplies at frequencies of 50 or 60Hz. The packs will not operate satisfactorily outside these specifications.

The packs may be wired:

**Single Phase:** 60A 1 phase 2 wire 230v or 115v  
(260v or 130v max phase to neutral)

**Three Phase Star:** 20A 3 phase 4 wire 250/440v  
(260v or 130v max phase to neutral)

**Three Phase Delta:** 20A 3 wire 230 or 115v  
(260v or 130v max phase to phase)

Max total load: 14.44kW @ 240v; 7.2kW @ 120v

Load per channel: 0.2A Min; 10A Max

No load consumption: 10w

Interference Suppression to BS800

If used in conjunction with MCB's, to avoid nuisance tripping use high inrush current (Type K) MCB's.

Input Signals: 0 to + 10v or 0 to -10v, autosensing

Low voltage feed is + / - 20v nominal at 100mA  
polarity is set by an internal link.

Input Impedance: Betapack: 70k $\Omega$ ;  
Betapack *Plus*: 50k $\Omega$ .

Earth Leakage: less than 1mA

#### Physical

Max Operating Temperature: 40 °C Ambient

Size: 443mm x 177 x 240 (17.5" x 7" x 9.5"); with

Rack mounting or wall mounting brackets fitted:  
483mm x 177 x 240 (19" x 7" x 9.5")

Net Weight: 9 kg (20lbs)

Zero 88 Lighting Ltd reserves the right to make changes to the equipment described in this manual without prior notice. This equipment is designed for use as a lighting power controller and is unsuitable for any other purpose. E&OE.

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## WARNING

**DO NOT REMOVE ANY COVER WITHOUT FIRST COMPLETELY DISCONNECTING THE BETAPACK FROM THE MAINS SUPPLY**

### Removing the rear cover

- 1 Disconnect the Betapack at the supply.
- 2 Remove from the 19 inch rack (if appropriate).
- 3 Remove the two screws securing the rear plate.
- 4 Push the rear plate down and pull the top towards you. *If there is any difficulty, remove the two screws securing each end of the bottom extrusion.*

*Cut outs are provided on the rear for two 32mm (1.25") and two 20mm (0.75") glands. The packs are supplied set for 240 v, 50Hz, three phase operation. Changing a fuse and the position of two links are all that is required to change the voltage and changing the position of one link changes the frequency.*

Reassemble the Betapack in the reverse order.

### Internal Controls and Links

#### To set the Frequency:

Locate the frequency setting link and reposition for the frequency required.

#### To set the Voltage:

Locate the fuse (Phase 1) and the two links (Phases 2 & 3) shown and reposition for the voltage required.

#### To set the Preheats

Each pair of channels has a preheat adjustment on the circuit board at the rear of the unit.

These may be used to set the preheat level of the channels **provided** that the output of any controller connected is set to minimum level on **both** the channels that are being adjusted.

### Output Wiring

The Betapack and Betapack *Plus* are fitted with six or twelve fixed sockets. The hard wired version is fitted with an output terminal strip at the rear.

### Fusing of Inductive Loads

All inductive loads (eg. pinspots, any transformer driven lamp) **must** be fitted with a separate fuse of the correct value *per lamp or fitting*.

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.

### Supply Wiring

**A separate isolator and secure mains earth are required.**

**Phase to Neutral voltage must not exceed 260v**

Betapacks are supplied wired for three phase star connected operation.

#### Single Phase

Remove the single phase busbar from the spares kit supplied and fit across the three phase input bolts.

#### Three Phase 'Star'

Remove the single phase busbar (if fitted) from across the three phase input bolts.

Ensure that the neutral busbar is in place.

#### Three Phase 'Delta'

Remove the neutral and single phase busbars if fitted.

Connect the neutral channel 1 & 2 outputs and the neutral reference 1 (NR1 on the diagrams) to the phase 2 supply input; connect the neutral channel 3 & 4 outputs and the neutral reference 2 to the phase 3 supply input and lastly connect the neutral channel 5 & 6 outputs and the neutral reference 3 to the phase 1 supply input.

Remember, **the voltage between phases must not exceed 260v when delta connected.**

### Front Panel Controls

#### Channel Test Switch (Betapacks only)

Each pack has a test switch. It is normally set to the 'Off' position. Turning it to '1' brings Channel 1 output only to 'Full'. Position 2 turns on Channel 2 and so on.

#### Fuse Blown Neons

Located next to each channel fuse, these will glow if the fuse is blown **provided** a load is connected.

#### Using Betapack *Plus* with remote inputs

When a remote input is connected, ensure that all the faders are at 0. Mixing local and remote control can give unpredictable results.

#### Plus / Minus Supply

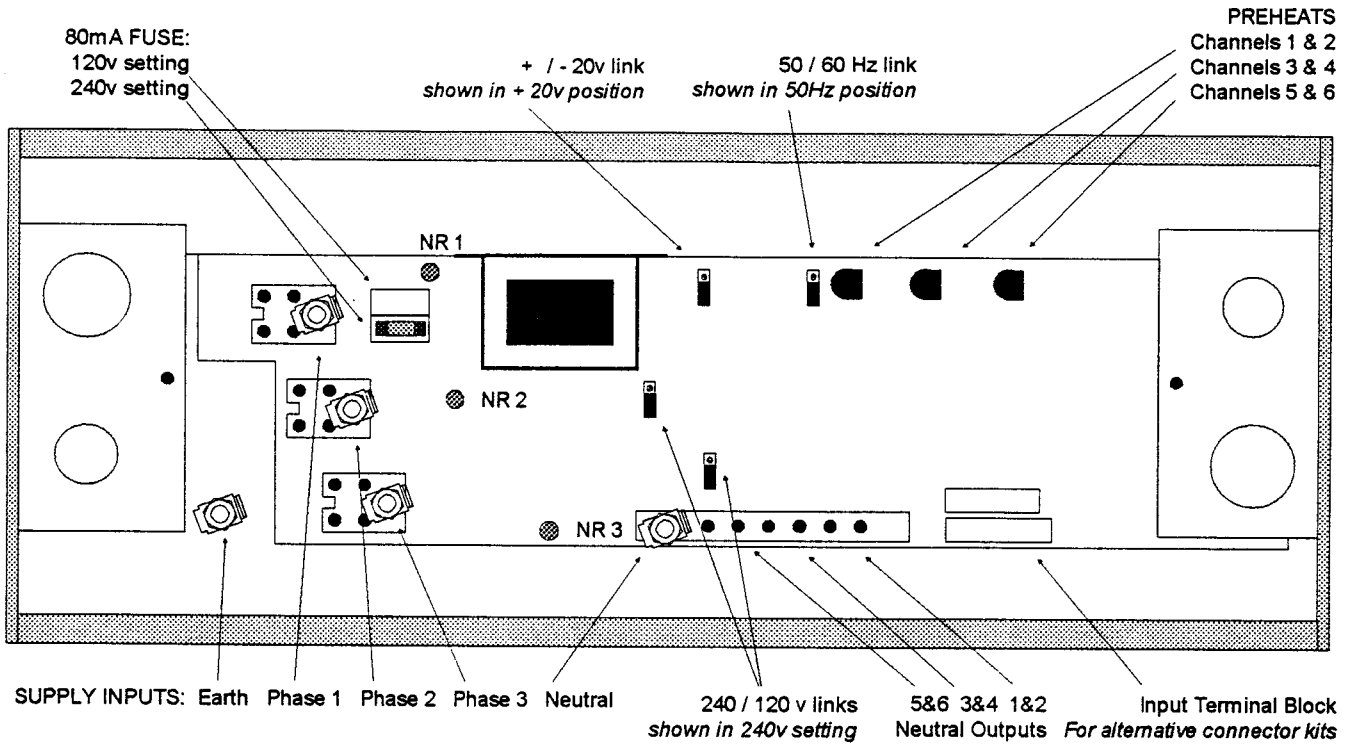
The LED indicator shows the polarity of the supply voltage on pin 7 of the signal connector. Red is + 20v, Green is -20v. Check compatibility with the desk before connecting.

To change the setting, remove the rear cover as described above, locate the + / - 20v link (next to the transformer), change the setting and replace the cover.

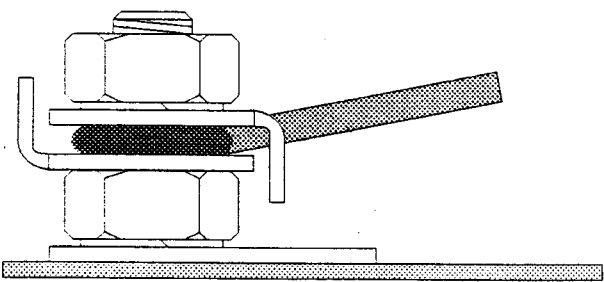
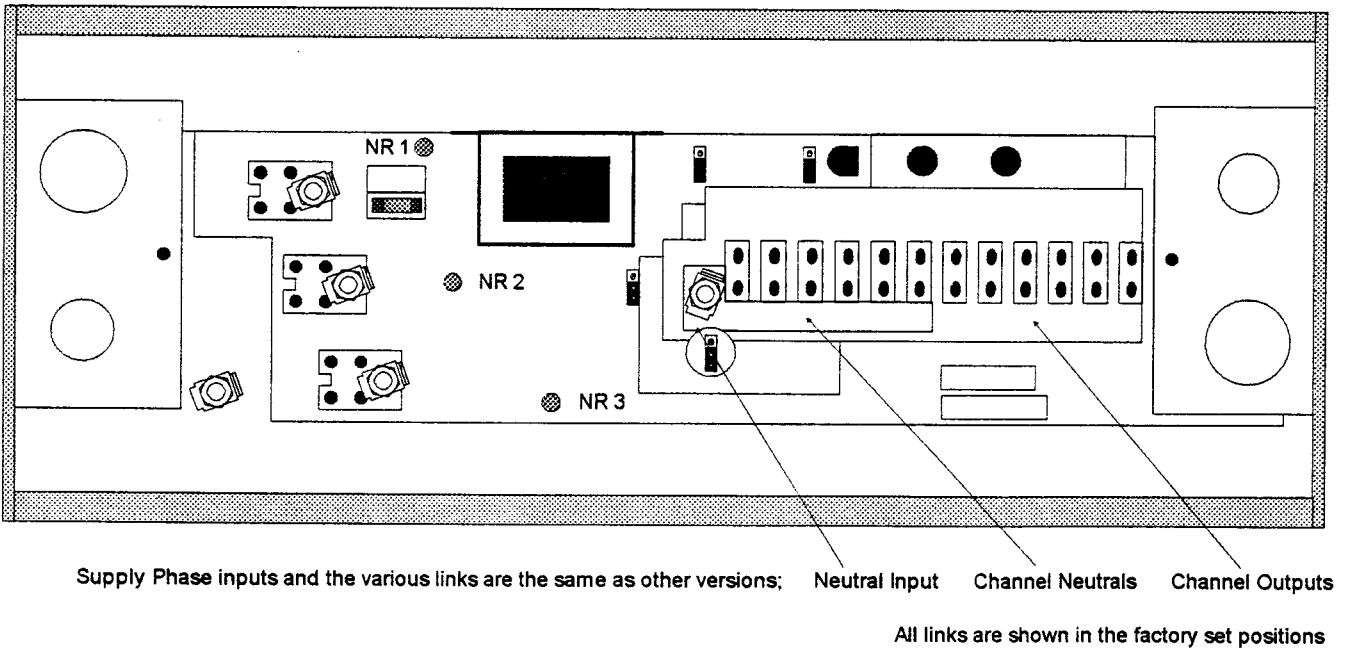
Note: If pin 7 of the signal connector of several packs are joined together, all power leds will come on when power is supplied to any of the packs.

**Rear views with the rear panel removed:**

**All except hard wired versions:**



**Hardwired versions:**



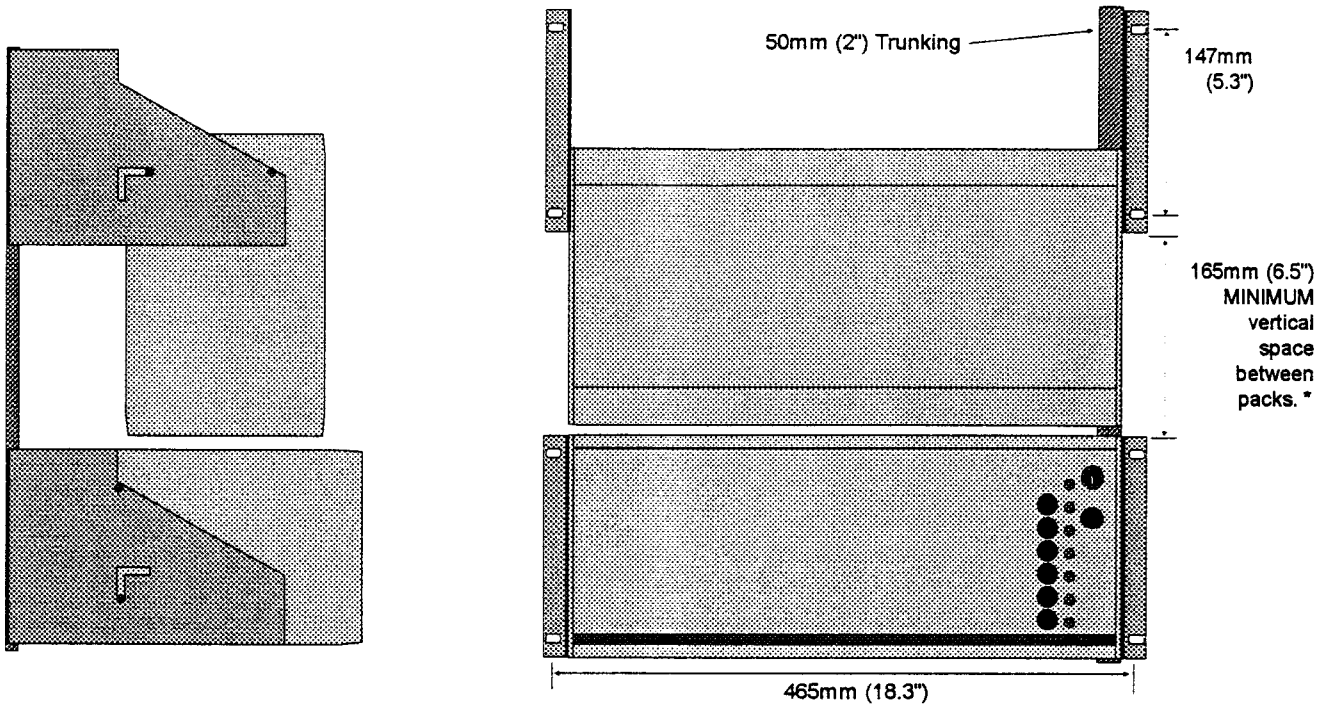
**Ensure that the incoming supply wires are connected to the input bolts as shown and that the NUTS ARE SECURELY TIGHTENED.**

**Check that the lockwashers supplied are used.**

# Installation Details

## Wall Mounting

A specially designed wall mounting bracket (Part No 0054100) is available which allows a Betapack or Betapack Plus to be tilted forward for access to the rear wiring during installation.



\*: Allow an extra 50mm (2") if the top pack has CEE17 sockets.

## Wiring Wall Mounted Packs

The wall mounting bracket has been designed so that 50mm (2") trunking will fit on the wall behind the pack as shown above.

**Note:** If the packs are wired and hinged into position before the trunking covers are fitted, wiring is very quick and easy.

## Signal Connections

### 8 pin Locking DIN

Pin	Channel	1
1	2	
2	3	
3	4	
4	5	
5	6	
6	Supply Voltage	
7	0 volts Reference	
8		

### XLR 7

Pin	Channel	1
1	2	
2	3	
3	4	
4	5	
5	6	
6	Supply Voltage	
7	0 volts Reference	
Shell		

## Ventilation

### Rack Mounted

When one or more Betapacks and/or Betapack *Pluses* are mounted in an enclosed rack, a fan **MUST** be fitted to ensure that adequate cool air is circulated.

### Free Standing

Up to three Betapacks / Betapack *Pluses* may be stacked in free air.

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