

**ALLEN&HEATH**

**RPS14**

**Linear Console Power Supply**

**USER GUIDE**

Publication AP5716

## **Limited One Year Warranty**

This product has been manufactured in the UK by ALLEN & HEATH and is warranted to be free from defects in materials or workmanship for a period of one year from the date of purchase by the original owner.

To ensure a high level of performance and reliability for which this equipment has been designed and manufactured, read this User Guide before operating.

In the event of a failure, notify and return the defective unit to ALLEN & HEATH or its authorised agent as soon as possible for repair under warranty subject to the following conditions:

### **Conditions Of Warranty**

1. The equipment has been installed and operated in accordance with the instructions in this User Guide
2. The equipment has not been subject to misuse either intended or accidental, neglect, or alteration other than as described in the User Guide or Service Manual, or approved by ALLEN & HEATH.
3. Any necessary adjustment, alteration or repair has been carried out by ALLEN & HEATH or its authorised agent.
4. The defective unit is to be returned carriage prepaid to ALLEN & HEATH or its authorised agent with proof of purchase.
5. Units returned should be packed to avoid transit damage.

In certain territories the terms may vary. Check with your ALLEN & HEATH agent for any additional warranty, which may apply.

 This product complies with the European Electromagnetic Compatibility directives 89/336/EEC & 92/31/EEC and the European Low Voltage Directives 73/23/EEC & 93/68/EEC.

Any changes or modifications to the power supply unit not approved by Allen & Heath could void the compliance of the product and therefore the users authority to operate it.

## **RPS14 User Guide AP5716 Issue 1.**

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## **ALLEN&HEATH**

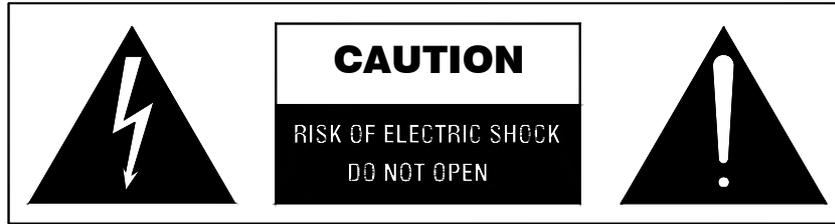
Manufactured in the United Kingdom by Allen & Heath Limited

Kernick Industrial Estate, Penryn, Cornwall, TR10 9LU, UK

<http://www.allen-heath.com>

# Important Safety Instructions

**WARNINGS** - Read the following before proceeding :



**ATTENTION: RISQUE DE CHOC ELECTRIQUE – NE PAS OUVRIR**

- Read instructions:** Retain these safety and operating instructions for future reference. Adhere to all warnings printed here and on the power supply unit. Follow the operating instructions printed in this User Guide.
- Do not remove covers:** Operate the power supply unit with its covers correctly fitted. Refer any service work on the power supply unit to competent technical personnel only.
- Power sources:** Connect the power supply unit to a mains power supply only of the type described in this User Guide and marked on the rear panel. Use only the power cord with sealed mains plug appropriate for your local mains supply as provided with the power supply unit. If the provided plug does not fit into your outlet consult your service agent for assistance.
- Power cord routing:** Route the power cord so that it is not likely to be walked on, stretched or pinched by items placed upon or against it.
- Grounding:** Do not defeat the grounding and polarisation means of the power cord plug. Do not remove or tamper with the ground connection in the power cord.



**WARNING: This equipment must be earthed.**

- Water and moisture:** To reduce the risk of fire or electric shock do not expose the power supply unit to rain or moisture or use it in damp or wet conditions. Do not place containers of liquid on it which might spill into any openings.
- Ventilation:** Do not obstruct the ventilation slots or position the power supply unit where the air flow required for ventilation is impeded. If the power supply unit is to be operated in a flightcase ensure that it is constructed to allow adequate ventilation.
- Heat and vibration:** Do not locate the power supply unit in a place subject to excessive heat or direct sunlight as this could be a fire hazard. Locate the power supply unit away from any equipment which produces heat or causes excessive vibration.
- Servicing:** Switch off the equipment and unplug the power cord immediately if it is exposed to moisture, spilled liquid, objects fallen into the openings, the power cord or plug become damaged, during lightening storms, or if smoke, odour or noise is noticed. Refer servicing to qualified technical personnel only.
- Installation:** Install the power supply unit in accordance with the instructions printed in this User Guide. Do not connect the output of power supply unit to any other equipment other than that specified by Allen & Heath.



## Important Mains plug wiring instructions.

The power supply unit is supplied with a moulded mains plug fitted to the AC mains power lead. Follow the instructions below if the mains plug has to be replaced.

The wires in the mains lead are coloured in accordance with the following code:

TERMINAL		WIRE COLOUR	
		European	USA/Canada
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN & YELLOW	GREEN

The wire which is coloured Green and Yellow must be connected to the terminal in the plug which is marked with the letter E or with the Earth symbol.

**This appliance must be earthed.**

The wire which is coloured Blue must be connected to the terminal in the plug which is marked with the letter N.

The wire which is coloured Brown must be connected to the terminal in the plug which is marked with the letter L.

Ensure that these colour codes are followed carefully in the event of the plug being changed.

## Precautions

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- Damage :** To prevent damage to the power supply unit cosmetics, avoid placing heavy objects on the unit, scratching the surface with sharp objects, or subjecting the power supply unit to rough handling and vibration.
- Environment :** Protect from excessive dirt, dust, heat and vibration when operating and storing. Avoid tobacco ash, smoke, drinks spillage, and exposure to rain and moisture. If the power supply unit becomes wet, switch off and remove power immediately. Allow to dry out thoroughly before using again.
- Cleaning :** Avoid the use of chemicals, abrasives or solvents. The power supply unit is best cleaned with a soft brush and dry lint-free cloth. The use of electrical lubricants is not recommended.
- Transporting :** The power supply unit should be transported in the original packing or purpose built flightcase to protect it from damage during transit.
- DC power cable:** Plan the location of the mixing console and power supply unit so that the DC power cable is not fully extended. Full extension of the cable can stress the mixing console and power supply unit connectors and may result in undesired performance. Ensure that the power cable is located such that it cannot be stood on or tripped over.

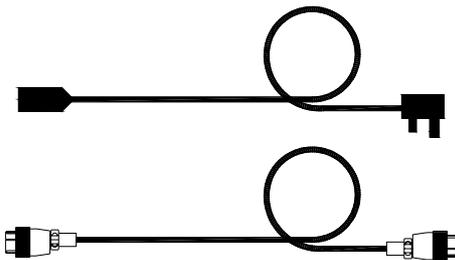
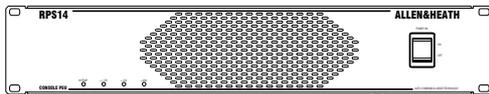
# Introduction

This user guide presents a quick reference to the **RPS14**. We recommend that you read this fully before starting. Included is information on installing, connecting and operating the power supply unit along with panel drawings and technical specification. Whilst we believe the information in this guide to be reliable we do not assume responsibility for inaccuracies. We also reserve the right to make changes in the interest of further product development.

We are able to offer further product support through our worldwide network of approved dealers and service agents. You can also access our Web site ([www.allen-heath.com](http://www.allen-heath.com)) for information on our company and its pedigree, our full product range and our design philosophy. To help us provide the most efficient service please keep a record of your power supply unit serial number, and date and place of purchase to be quoted in any communication regarding this product. The serial number is located on the rear panel.

## Check the Packing Contents

Retain the product packing should you need to ship the product in future. You should find the following components:



1x **RPS14** POWER SUPPLY UNIT. This is packed with its rubber feet fitted. The feet can be removed for rack mounting.

1x IEC MAINS LEAD with moulded plug. Check that the plug is suitable for connection to your local mains supply.

**RPS14/n** Unit shipped as a spare. *n* = mains voltage

1x SHORT (0.75m) male>male DC POWER CABLE.

Part number **002-584**. Connects the **RPS14** as a backup to the main console supply. Or:

**+RPS14/n** Unit shipped with console. *n* = mains voltage

1x LONG (2.9m) male>female DC POWER CABLE.

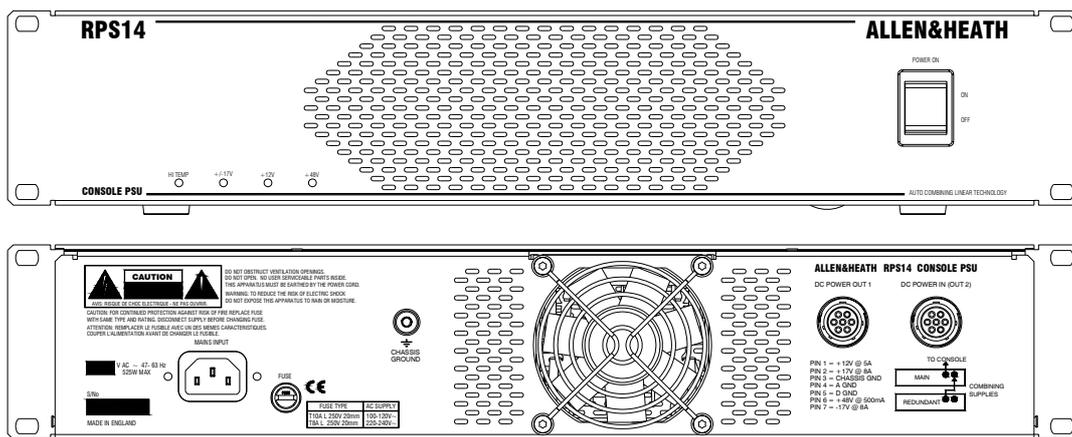
Part number **002-583**. Connects the **RPS14** to the mixing console.

DOCUMENTATION including Safety Sheet **AP3345**, this user guide **AP5716** and the Registration Card **AP3594**.

## The RPS14

The slimline **RPS14** power supply unit is a high performance, low noise linear power supply producing DC voltages by rectifying, smoothing and regulating AC voltages from the secondary windings of a mains transformer.

Allen & Heath mixing consoles employ a number of DC voltage supply levels in their operation and these are provided at the output of the power supply unit. The **RPS14** has a built in combiner for connection to a second supply for backup. Full protection and thermal sensing fan cooling ensures the power supply unit will operate consistently.



# Installation

## Free standing

The **RPS14** can be operated as a freestanding unit for shelf or floor operation. Ensure adequate air flow around the unit. It must not be covered in any way. Always stand the unit on a firm flat surface well away from any soft furnishings or carpet.

## Rack mounting

The **RPS14** is designed as a 19 inch rack mount unit and will occupy 2U (3.5 inches) of rack space. The fast feet may need to be removed before rack mounting. Retain feet for future use.

An important consideration when rack-mounting the unit is the need for natural convection of airflow around the unit. Good ventilation below the unit, in the floor or back of the rack, will ensure a continuous path for airflow.

Rack equipment known to produce a significant amount of heat should not be mounted directly below the power supply unit. Equipment which also relies on good airflow within the rack (i.e. most power amplifiers and other power supply units) should be given due consideration and some space should be provided between such units and between the **RPS14** unit. Forced convection, by means of a fan-tray, may be desirable in some situations.

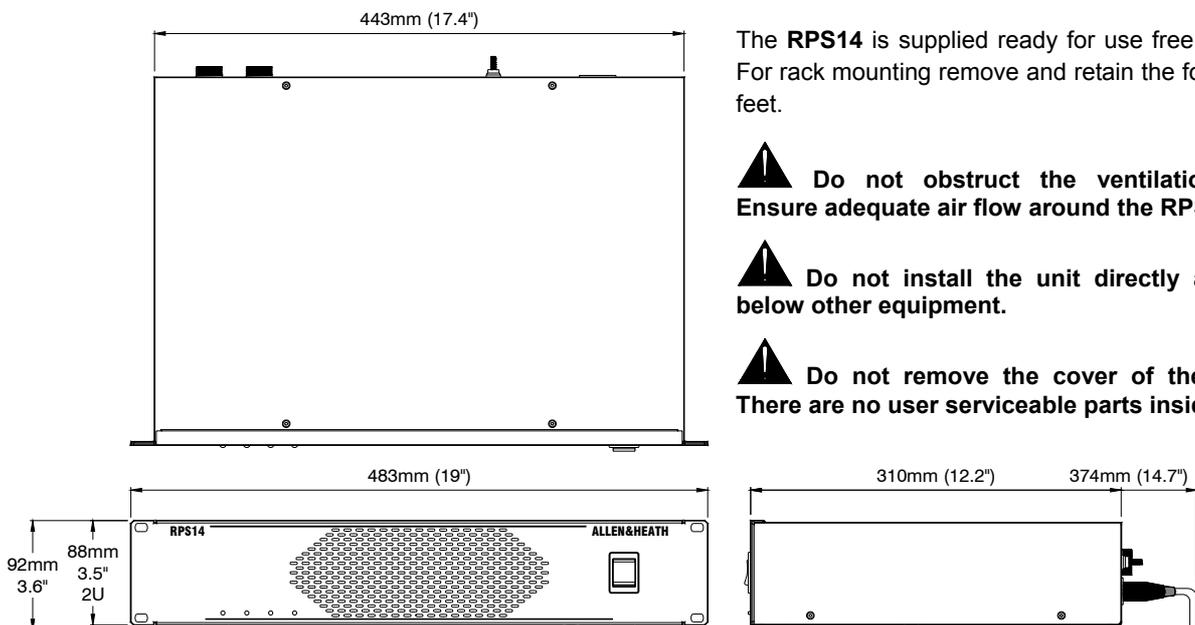
## Location

As with any power supply unit that contains a mains voltage transformer, it is preferable to provide a degree of physical isolation of the unit from other equipment, particularly that which carries low level audio signals, to avoid any possible interference pick-up. For this reason power supply units supplied with Allen & Heath **ML** series mixing consoles are provided with a long (2.9m) output cable to enable them to be positioned away from the mixing console. Backup power supply units, bought separately, are provided with a shorter (0.75m) output cable to combine power supply units. For the same reason, when rack-mounting it is preferable to avoid locating the unit next to signal processing equipment.

## Earthing

Finally, some consideration should be given to the earthing arrangement of the system, at the centre of which is the console and the **RPS14**. The console chassis is earthed to the mains earth via the power supply unit. When rack-mounting the **RPS14** care should be taken to avoid any possible "ground loops" in the system which may introduce audible hum or buzz to otherwise clean audio signals. Ground loops occur where signal processing equipment patched to the console, has its signal earth connected to the equipment chassis. A ground loop is formed if the chassis of the signal processing equipment and the **RPS14** chassis are in electrical contact through the fixing rails they share in the rack. The **RPS14** has audio 0V and mains earth connected internally.

## Fitting in a rack



# Operating the RPS14

The **RPS14** is internally wired to operate from one of the following standard settings: 100V, 120V, 220V, or 240V. The unit is shipped pre-wired for the country in which it is to be used.

**⚠ Check that the rear panel is marked to indicate the voltage that is correct for your territory. The power supply unit is provided with an IEC type mains connector and moulded mains plug. Check that this is correct for connection to your wall socket outlet.**

Switch the unit on by setting the front panel POWER ON switch to its ON position. The three front panel voltage rail indicators (+/-17V, +12V, +48V) should light. The 'HI TEMP' indicator should be off during normal operation. It lights to warn when the power supply unit is becoming too hot. Should that be the case, improve the ventilation or lower the air temperatures around the unit.

**⚠ To avoid audible thumps and bangs through the speakers, always turn the console on before switching on the amplifier system, and turn the amplifiers off before switching off the console power supply unit.**

Always switch the power supply unit off before connecting or disconnecting the console power cables, removing or installing console modules and any servicing work. In the event of an electrical storm, or large mains voltage fluctuations, immediately switch off the power supply unit and disconnect from the mains supply.

## Combining Power supply units

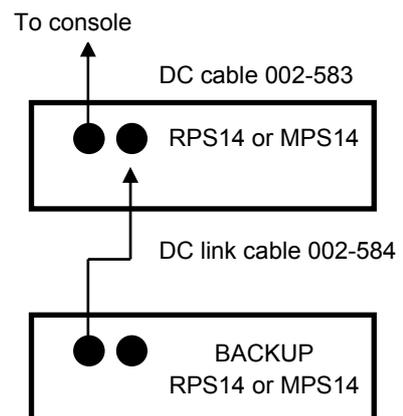
The **RPS14** has a built-in combiner allowing direct connection to another power supply unit for backup. It can be combined with either another **RPS14** or the alternative **MPS14** power supply unit. Either can be used as the main or backup supply.

Connect the two power supply units together using the DC link cable provided by plugging into the DC sockets of each unit as shown below. Note that the DC link cable can be connected to either of the two DC output connectors on both units.

**⚠ Avoid fully extending the DC cables when plugging in as this may stress the cable and connectors resulting in failure.**

Ensure that walkways, aisles and gangways are not obstructed by cables.

To ensure correct performance we recommend that you do not extend or modify the DC power cable in any way.



## Cleaning the Unit

The **RPS14** does not use any internal filters. Air is drawn through the fan grille on the rear, blown through a heatsink tunnel and out through ventilation slots in the front panel. It is not necessary to open the unit for cleaning. Simply keep the fan and ventilation slots free of dust and dirt using a vacuum cleaner and dry, lint free cloth. Do not use liquid cleaners or compressed air to clean the unit.

**⚠ Always switch the unit off when inspecting or cleaning it.**

## Replacing the mains fuse

The AC mains fuse is located on the rear of the **RPS14** unit next to the AC mains connector. In the event of a mains surge or under-rated fuse value, the fuse will rupture. Switch off the power supply and remove the mains lead plug from the “MAINS INPUT” socket on the rear of the unit. Check the fuse and replace if necessary. In the event of repeated failure of the mains fuse, consult your Allen & Heath service agent.

In the unlikely event of an internal DC rail fuse failure, consult your Allen & Heath service agent or Allen & Heath technical support.



**TO AVOID THE RISK OF FIRE REPLACE FUSE WITH THE CORRECT TYPE ONLY, AS INDICATED ON THE UNIT.**

AC~ mains input voltage	Fuse type	A&H Part No.
100V – 120V ± 10%	T 10A 250V 20mm	AL3455
220V – 240V ± 10%	T 8A 250V 20mm	AL0487

## Technical specification

Mains Input Voltage Range: Internally wired for region:

100V +/- 10% 50/60Hz

120V +/- 10% 50/60Hz

220V +/- 10% 50/60Hz

240V +/- 10% 50/60Hz

Note: Contact Allen & Heath if your local mains voltage is not shown above.

Power consumption (max.) 650W

Mains Fuse: 100/120V T10A 250V 20mm A&H Part no: AL3455  
 220/240V T8A 250V 20mm A&H Part no: AL0487

Internal Fuses:

PCB Ident	Fuse type	A&H Part no:	
F1 (+17.5V)	T 16A 250V 20mm	AL8154	
F2 (-17.5V)	T 16A 250V 20mm	AL8154	
F3 (+48V)	T 1.6A 250V 20mm	AL0466	
F4 (+12V)	T 6.3A 250V 20mm	AL0395	

DC Outputs:

DC Voltage Rail	Output Current
+17 VOLTS	8A Max.
-17 VOLTS	8A Max.
+12 VOLTS	4A Max.
+48 VOLTS	500mA Max.

Overall Dimensions:

Front Panel:	483mm x 88mm	19 inch 2U
Chassis	443mm x 88mm	17.4 inches
Height including feet:	92mm	3.6 inches
Depth:	328mm	12.9 inches
Weight:	12kg	26.4 lbs

Cable Assemblies:

Assembly	Description	A&H Part no:
DC cable	2.9m power supply to console cable assembly	002-583
DC LINK cable	0.75m backup supply to main supply cable assembly	002-584