



HANDBOOK **Redbox RB-MSP6**  
6 Way Phantom Power Supply



Manufacturers of audio & video products for radio & TV broadcasters

**SONIFEX**

This handbook is for use with the following product:

RB-MSP6 6 Way Phantom Power Supply

Stock Code: 30-318

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# SONIFEX

## Register Online for an Extended 2 Year Warranty

As standard, Sonifex products are supplied with a 1 year back to base warranty.

If you register the product online, you can increase your product warranty to 2 years and we can also keep you informed of any product design improvements or modifications.

To register your product, please go online to [www.sonifex.co.uk/register](http://www.sonifex.co.uk/register)

## Product Warranty - 2 Year

As standard, Sonifex products are supplied with a 1 year back to base warranty. In order to register the date of purchase and so that we can keep you informed of any product design improvements or modifications, it is important to complete the warranty registration online. Additionally, if you register the product on the Sonifex website within 30 days of purchase, you can increase your product warranty to 2 years. Go to the Sonifex website at: <http://www.sonifex.co.uk/technical/register/index.asp> to apply for your 2 year warranty.

Note: For your own records the product serial number is recorded on the CE certification page of this handbook.

## Sonifex Warranty & Liability Terms & Conditions

### 1. Definitions

‘the Company’ means Sonifex Ltd and where relevant includes companies within the same group of companies as Sonifex Limited.

‘the Goods’ means the goods or any part thereof supplied by the Company and where relevant includes: work carried out by the Company on items supplied by the Purchaser; services supplied by the Company; and software supplied by the Company.

‘the Purchaser’ means the person or organisation who buys or has agreed to buy the Goods.

‘the Price’ means the Price of the Goods and any other charges incurred by the Company in the supply of the Goods.

‘the Warranty Term’ is the length of the product warranty which is usually 12 months from the date of despatch; except when the product has been registered at the Sonifex website when the Warranty Term is 24 months from the date of despatch.

‘the Contract’ means the quotation, these Conditions of Sale and any other document incorporated in a contract between the Company and the Purchaser.

This is the entire Contract between the parties relating to the subject matter hereof and may not be changed or terminated except in writing in accordance with the provisions of this Contract. A reference to the consent, acknowledgement, authority or agreement of the Company means in writing and only by a director of the Company.

### 2. Warranty

- (a) The Company agrees to repair or (at its discretion) replace Goods which are found to be defective (fair wear and tear excepted) and which are returned to the Company within the Warranty Term provided that each of the following are satisfied:
- (i) notification of any defect is given to the Company immediately upon its becoming apparent to the Purchaser;
  - (ii) the Goods have only been operated under normal operating conditions and have only been subject to normal use (and in particular the Goods must have been correctly connected and must not have been subject to high voltage or to ionising radiation and must not have been used contrary to the Company’s technical recommendations);
  - (iii) the Goods are returned to the Company’s premises at the Purchaser’s expense;
  - (iv) any Goods or parts of Goods replaced shall become the property of the Company;
  - (v) no work whatsoever (other than normal and proper maintenance) has been carried out to the Goods or any part of the Goods without the Company’s prior written consent;

- (vi) the defect has not arisen from a design made, furnished or specified by the Purchaser;
  - (vii) the Goods have been assembled or incorporated into other goods only in accordance with any instructions issued by the Company;
  - (viii) the defect has not arisen from a design modified by the Purchaser;
  - (ix) the defect has not arisen from an item manufactured by a person other than the Company. In respect of any item manufactured by a person other than the Company, the Purchaser shall only be entitled to the benefit of any warranty or guarantee provided by such manufacturer to the Company.
- (b) In respect of computer software supplied by the Company the Company does not warrant that the use of the software will be uninterrupted or error free.
- (c) The Company accepts liability:
- (i) for death or personal injury to the extent that it results from the negligence of the Company, its employees (whilst in the course of their employment) or its agents (in the course of the agency);
  - (ii) for any breach by the Company of any statutory undertaking as to title, quiet possession and freedom from encumbrance.
- (d) Subject to conditions (a) and (c) from the time of despatch of the Goods from the Company's premises the Purchaser shall be responsible for any defect in the Goods or loss, damage, nuisance or interference whatsoever consequential economic or otherwise or wastage of material resulting from or caused by or to the Goods. In particular the Company shall not be liable for any loss of profits or other economic losses. The Company accordingly excludes all liability for the same.
- (e) At the request and expense of the Purchaser the Company will test the Goods to ascertain performance levels and provide a report of the results of that test. The report will be accurate at the time of the test, to the best of the belief and knowledge of the Company, and the Company accepts no liability in respect of its accuracy beyond that set out in Condition (a).
- (f) Subject to Condition (e) no representation, condition, warranty or other term, express or implied (by statute or otherwise) is given by the Company that the Goods are of any particular quality or standard or will enable the Purchaser to attain any particular performance or result, or will be suitable for any particular purpose or use under specific conditions or will provide any particular capacity, notwithstanding that the requirement for such performance, result or capacity or that such particular purpose or conditions may have been known (or ought to have been known) to the Company, its employees or agents.
- (g) (i) To the extent that the Company is held legally liable to the Purchaser for any single breach of contract, tort, representation or other act or default, the Company's liability for the same shall not exceed the price of the Goods.
- (ii) The restriction of liability in Condition (g)(i) shall not apply to any liability accepted by the Seller in Condition (c).
- (h) Where the Goods are sold under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 1976) the statutory rights of the Purchaser are not affected by these Conditions of Sale.

## Unpacking Your Product

Each product is shipped in protective packaging and should be inspected for damage before use. If there is any transit damage take pictures of the product packaging and notify the carrier immediately with all the relevant details of the shipment. Packing materials should be kept for inspection and also for if the product needs to be returned.

The product is shipped with the following equipment so please check to ensure that you have all of the items below. If anything is missing, please contact the supplier of your equipment immediately.

Item	Quantity
Product Unit	1
IEC Mains lead fitted with moulded mains plug	2
Handbook and warranty card	1

If you require a different power lead, please let us know when ordering the product.

## Repairs & Returns

Please contact Sonifex or your supplier if you have any problems with your Sonifex product. Email [technical.support@sonifex.co.uk](mailto:technical.support@sonifex.co.uk) for the repair/upgrade/returns procedure, or for support & questions regarding the product operation.



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## CE Declaration of Conformity and Approval Information

This document certifies that the Sonifex product that you have purchased is compliant with CE specifications. If you would like further information on compliance of all Sonifex products, please check the website at the address above where full information is available.

Sonifex Limited hereby certify that the following product with serial number shown has been designed and manufactured in accordance with the following specifications :

**EMC:** EN 55103-1: 1997 Electromagnetic Compatibility.  
 Limits of disturbance for audio apparatus for professional use  
 For use in environments 1 to 4.

EN 55103-2: 1997 Electromagnetic Compatibility.  
 Limits of disturbance for audio apparatus for professional use  
 For use in environments 1 to 4.

**Safety:** EN 60950: 1992 Safety of Information Technology Equipment  
 Including Electrical Business Equipment.

**Hybrid** BS6301, BS7002, BS415, CTR21,  
**Approvals:** R&TTE directive (1999/5/EC)

Product: \_\_\_\_\_

Serial No: \_\_\_\_\_

The Reference Technical Justification File for this product is available at Sonifex Ltd.

Authorised By:

Name: Chris Stills

Position: Technical Director

Date of Issue: 01 March 2015

Signature:



## Safety & Installation of Mains Operated Equipment

There are no user serviceable parts inside the equipment. If you should ever need to look inside the unit, always disconnect the mains supply before removing the equipment covers. The cover is connected to earth by means of the fixing screws. It is essential to maintain this earth/ground connection to ensure a safe operating environment and provide electromagnetic shielding.

### Voltage Setting Checks





Ensure that the machine operating voltage is correct for your mains power supply by checking the box in which your product was supplied. The voltage is shown on the box label. The available voltage settings are 115V, or 230V. Please note that all products are either switchable between 115V and 230V, or have a universal power supply.

### Fuse Rating

The product is supplied with a single fuse in the live conducting path of the mains power input. For reasons of safety it is important that the correct rating and type of fuse is used. Incorrectly rated fuses could present a possible fire hazard, under equipment fault conditions. The active fuse is fitted on the outside rear panel of the unit.

## Power Cable & Connection

Two IEC power leads are supplied with the product which have a moulded plug attached – this is a legal requirement. The mains lead is automatically configured for the country that the product is being sent to, from one of:

Territory	Voltage	IEC Lead Type	Image
UK & Middle East	230V	UK 3 pin to IEC lead	
Europe	230V	European Schuko round 2 pin to IEC lead	
USA, Canada and South America	115V	3 flat pin to IEC lead	
Australia & New Zealand	230V	Australasian 3 flat pin to IEC lead	

Connect the equipment in accordance with the connection details and before applying power to the unit, check that the machine has the correct operating voltage for your mains power supply.

**Important Note:** If there is an earth/ground terminal on the rear panel of the product then it must be earthed/grounded.

### WEEE Directive



The Waste Electrical and Electronic Equipment (WEEE) Directive was agreed on 13 February 2003, along with the related Directive 2002/95/EC on Restrictions of the use of certain Hazardous Substances in electrical and electronic equipment (RoHS). The Waste Electrical and Electronic Equipment Directive (WEEE) aims to minimise the impacts of electrical and electronic equipment on the environment during their life times and when they become waste. All products manufactured by Sonifex Ltd have the WEEE directive label placed on the case. Sonifex Ltd will be happy to give you information about local organisations that can reprocess the product when it reaches its “end of use”, or alternatively all products that have reached “end of use” can be returned to Sonifex and will be reprocessed correctly free of charge.

### RoHS Directive



The RoHS directive limits the use of certain hazardous substances currently used in EEE manufacture, including lead, mercury, cadmium, hexavalent chromium, and halide-containing compounds PBB (polybrominated biphenyl) and PBDE (polybrominated diphenyl ether). Elimination of these substances will result in more environmentally friendly recycling of electronic equipment.

Sonifex Ltd practices lead-free (LF) manufacturing processes and does not use any of the hazardous substances identified in the European Union’s Restriction of Hazardous Substances (RoHS) directive. The manufacturing

processes include the assembly of purchased components from various sources. Product is offered as RoHS compliant, or LF, only after sufficient evidence is received from the component manufacturers that their components are RoHS compliant. Sonifex Ltd relies solely on the distributor, or manufacturer, of the components for identification of RoHS compliance. Thus whilst every effort is made to ensure compliance, Sonifex Ltd makes no warranty, or certification, or declaration of compliance concerning said components.

### Atmosphere

The units should be installed in an area that is not subject to excessive temperature variation (<0°C, >50°C), moisture, dust or vibration.

### Fitting Redboxes

Redboxes can be fixed to the underside of a mixing desk, or other surfaces using 4.2mm holes in the sides and fixed with 2 x M4 screws or 2 x No. 6 countersink wood screws.

They can also be rack-mounted, with either the front, or rear of the Redbox positioned at the front of the rack:

Rear Mounting a 1U Rackmount Redbox:

The RB-RK3 1U rear panel rack kit can be used for large 1U rackmount Redboxes.



**Note:** When fitting the RB-RK3 rear-mounting rack-kits, a notch has been left on the inside of the right-hand rack-piece for the mains cable to pass through. Make sure that the mains cable has been put through the notch before attaching the right hand rack-piece.

# Introduction



Fig 1-1: RB-MSP6 Front Panel

The RB-MSP6 is a 1U rack-mount phantom power supply, designed to be used in conjunction with up to six RB-MS4X3s, providing mains input redundancy to ensure the target microphones remain powered in the event of a single mains failure.

Two mains AC inlets power separate 48V supplies that are diode fed to six locking DC connector outputs. Each output connector is individually protected with a resettable fuse rated at 50mA, so a fault on one output will not affect the others.

Should either of the 48V supplies fail, or if their AC power input is removed, the corresponding red front panel LED will extinguish, and a relay alarm output is provided on the rear panel D-Type.

## System Block Diagram

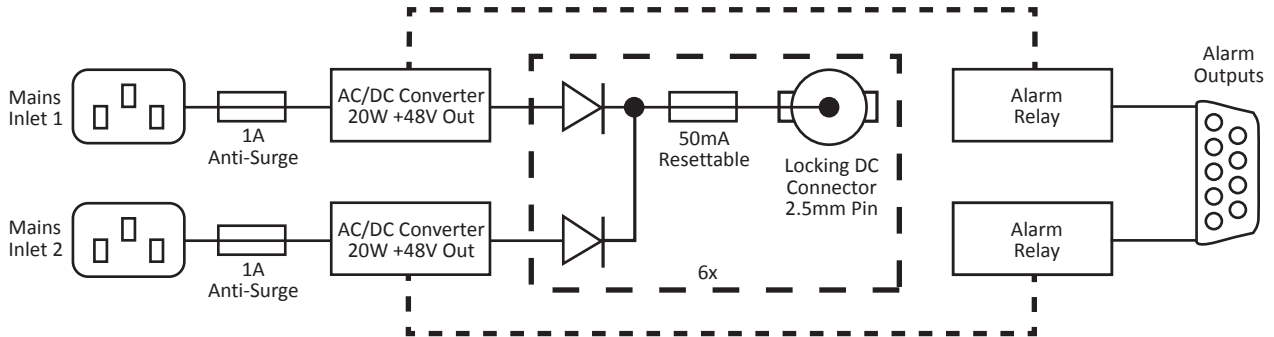


Fig 1-2: 25 System Block Diagram

## Connections and Operation

### Front Panel Controls and Indicators



Fig 2-1: RB-MSP6 Front Panel LED Indicators

The RB-MSP6 front panel LEDs (labelled 1 and 2) show the presence of power at the input of each IEC AC supply. Each LED illuminates red if power is present at the input. If a LED extinguishes, it indicates a problem with the corresponding supply. This could be due to one or more of the following:

- The AC mains input is out of range or missing.
- The mains fuse is blown or missing.
- The internal AC/DC 48V supply is faulty.

The current status of the two AC/DC 48V power supplies is also reflected at the remote output port on the rear panel, see below for details.

### Rear Panel Connections

#### AC Mains inputs

The two mains inputs should be connected to 90V – 264V, 47 – 63Hz AC mains supplies, and protected with a 1A anti-surge fuse.

#### +48V Phantom Power Outputs

The DC outputs each provide up to 50mA of phantom power (48V) to an externally connected RB-MS4X3. The connectors are locking to prevent accidental unplugging, and the positive voltage is on the 2.5mm centre pin.



#### Alarm Outputs (ALARMS)

The 9 way D-Type socket contains alarm outputs that monitor the status of the two 48V power supplies. A changeover relay provides a normally open (NO), normally closed (NC) and a common connection for each supply. The pinout of the D-Type connector is shown below.

**Note:** “Normally closed” refers to the pin that is connected to the common when the corresponding supply is working normally.

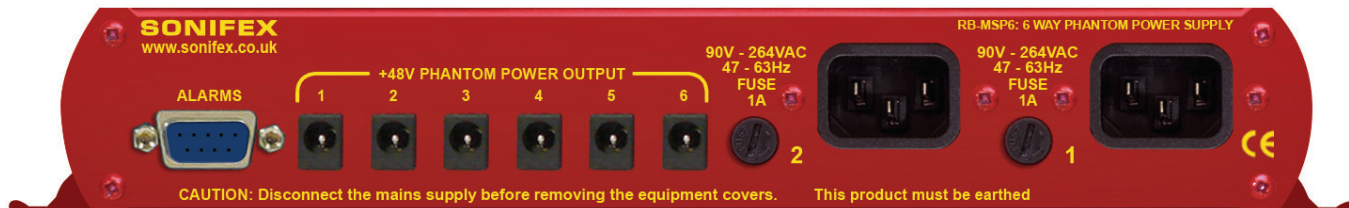
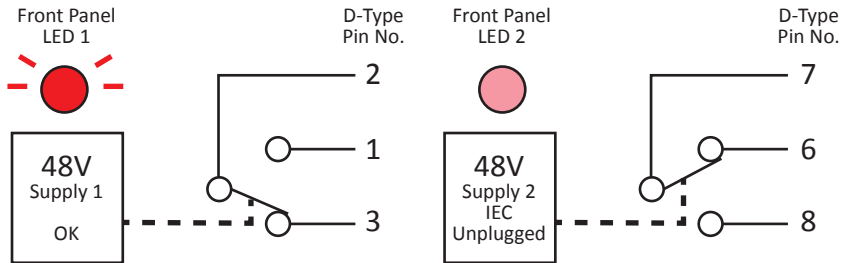


Fig 2-2: RB-MSP6 Rear Panel Connections

Pin Number	Connection
1	Supply 1 Normally Open (NO)
2	Supply 1 Common
3	Supply 1 Normally Closed (NC)
6	Supply 2 Normally Open (NO)
7	Supply 2 Common
8	Supply 2 Normally Closed (NC)
4,5,9	No Connection

**Example:**

The diagram below shows a fault scenario where the mains connection to Supply 2 has been unplugged. The front panel LED is no longer illuminated, and the relay has switched, creating a connection between pins 6 and 7 of the ALARMS D-Type.



## Technical Specifications

Mains inputs	2 x Filtered IEC, 90V-264V, 47-63Hz, fused, 20W maximum
Fuse Ratings	2 x Anti-surge fuse 1A 20 x 5mm
Phantom Power Outputs	6 x locking DC connectors, 2.5mm pin, 48VDC, 50mA maximum current, protected by resettable fuse.

### Equipment Type:

RB-MSP6: RB-MSP6 6 way phantom power supply

### Physical Specification:

Dimensions (Raw):	28cm (W) x 10.8cm (D) x 4.2cm (H) (1U) 11" (W) x 4.3" (D) x 1.7" (H) (1U)
Dimensions (Boxed):	36cm (W) x 20.5cm (D) x 6cm (H) 14.2" (W) x 8" (D) x 2.4" (H)
Weight:	Nett: 1.14kg Gross: 1.52kg Nett: 2.50lbs Gross: 3.34lbs

### Accessories:

RB-RK2: 1U rear panel rack kit for small Redbox range



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