

**AC/DC POWER-SUPPLY, 12 V, 3 A (230 V) 1021091**  
**AC/DC POWER-SUPPLY, 12 V, 3 A (115 V) 1021092**

11/17 JS/ALF

## 1 PRELIMINARY INFORMATIONS

### 1.1 Introduction

You have just purchased a AC/DC POWER SUPPLY type: 1021091 / 1021092. Thank you and congratulate for your good choice. This item has been conceived according to the European standard EN61010-1 and supplied in good condition. This electrical instrument is intended for professional, industrial and school users. This instructions manual contains information and notes, which must be respected by the purchaser, in order to ensure a safe working and to maintain the instrument in good condition.

Instrument: AC/DC POWER SUPPLY  
 Brand: 3B Scientific  
 Type: 1021091 / 1021092  
 Main input voltage: 115/230 V  $\pm$  10% alternative 50/60 Hz (See replacement of fuses according to input voltage)





### 1.2 Safety instructions

**Before any operation, read the following safety precautions to avoid injury and prevent damage to this product or another connected.**

- **The instrument must be used according to the instructions of this manual.**
- **To avoid all potential hazards, use this product only in the specified limits.**
- **Before using for the first time, check if the mains voltage indicated on the switch, on the back of the housing, complies with local requirements.**
- **The power cable is used as a cut system, the product must be connected to a main source, easily accessible.**
- **Don't use the device without its cover. Don't use the item with its housing or any panels removed.**
- **Designed for indoor use, do not expose it to rain.**
- **Use it in a well ventilated area. The power-supply must rest on its 4 rubber stops. The air inlets and the fan outlet must be widely free, don't block them.**
- **Don't use in wet conditions. Do not use in wet environment to avoid electric shocks or short-circuit inside the product.**
- **Don't use in an explosive atmosphere. It is very important do not operate the item near an explosive atmosphere, to prevent damage to the device or any personal injuries.**
- **Replace a defective fuse only with a corresponding fuse to one of the original values (see the back of the case).**
- **The common mode voltage between ground and the output terminals must not exceed 100 V DC.**
- **In this case a deemed dangerous voltage (> 70 V DC) can be reached between one of the terminals and earth. Therefore, it is imperative to use safety cables to connect the outputs of the device. Also, all connected devices must not have conductive parts accessible.**
- **Any intervention inside the casing, must imperatively be effected by a skilled staff.**
- **ALTERNATIVE AND CONTINUOUS CIRCUITS MAY BE USED JOINTLY, BUT WITH A MAXIMUM POWER OF 36W.**

### 1.3 Safety terms and symbols

You will find the following symbols on the equipment

CAUTION REFER TO MANUAL	CLASSE II	USING INSIDE	SAFETY TRANSFORMER NO DANGEROUS IN CASE OF FAILURE	DON'T DISPOSE IN A CONVENTIONAL BIN
				

## 2 PRELIMINARY INSTRUCTIONS

### 2.1 Packaging repackaging

The power supply packaging is designed to protect it during transport. Keep it, it can be useful later.

Packing list

1 x instructions manual	1 x plastic protecting bag	1 x power-supply	2 x cardboard packing piece
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### 2.2 TECHNICAL FEATURES AT 115 V OR 230 V AND 23°C

#### 2.2.1 AC voltages

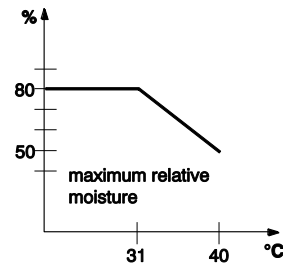
Output voltage:	3 V, 6 V, 12 V $\pm$ 5% (+5% max without load) with 0V common point
Outputs:	4 mm diameter safety sockets
Output current:	3 A
Protections:	Against short-circuits and over current by incorporated thermal circuit breaker (automatic rearmament after having deleted the defect)

#### 2.2.2 DC voltages

Output voltage:	0 to 12 V adjustable continuously
Outputs:	4 mm diameter safety sockets
Ripple:	< 10 mV peak to peak
Regulation:	for a load change from 0 to 100% 20 mV for a line change from $\pm$ 10% 5 mV
Output current:	3 A
Short-circuit current:	< 3.5 A

#### OTHERS CHARACTERISTICS

Main input voltage:	115/230 V $\pm$ 10%, 50/60 Hz (selector)
Input voltage:	Socket C8 with 2 poles IEC320 C7 movable
Power consumption:	84 VA maxi
Dimension:	201 x 213 x 98 mm
Weight:	2.7 Kg
Conditions of use:	+5°C to +40°C
Conditions of storage:	-10°C to +50°C
Conditions of moisture:	(see annex 1)
Security:	EN 61010-1 -- Overvoltage category degree II; pollution 2
EMC:	EN 61326-1
Electric strenght:	3000 between input, output and chassis

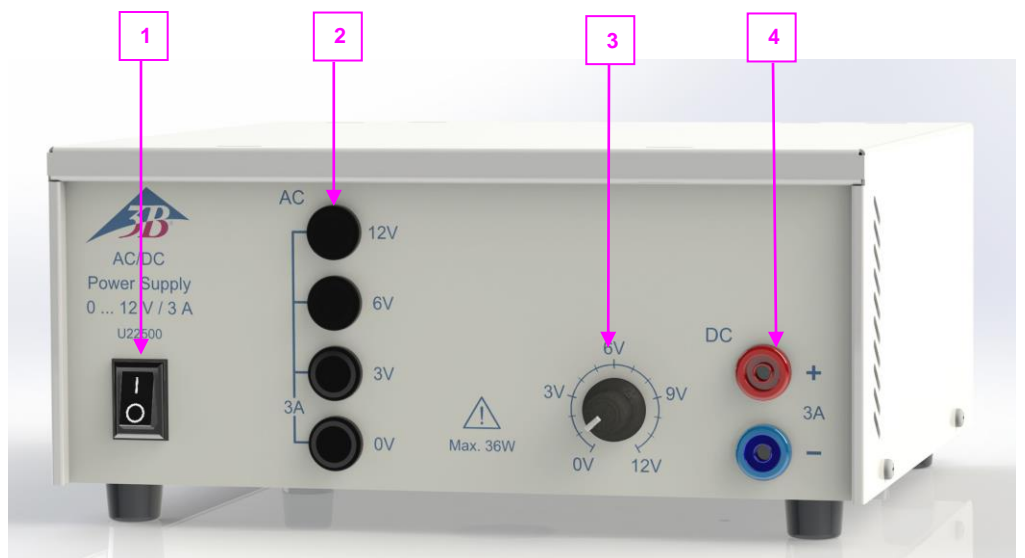


#### Protections

Safety class:	II (security reinforced between input and output)
Against short-circuits:	by current regulation for the DC output, and thermal circuit breaker for the AC output
Against overtemperature:	by controlled ventilation and thermal circuit breaker in case of excessive temperature in the DC part, by internal 5x20 fuses (F5A 250V)
Against overcurrent:	On the main input by 2 fuses 5x20 (Main input 115 V : T2A 250V ; Main input 230 V : T1A 250V)

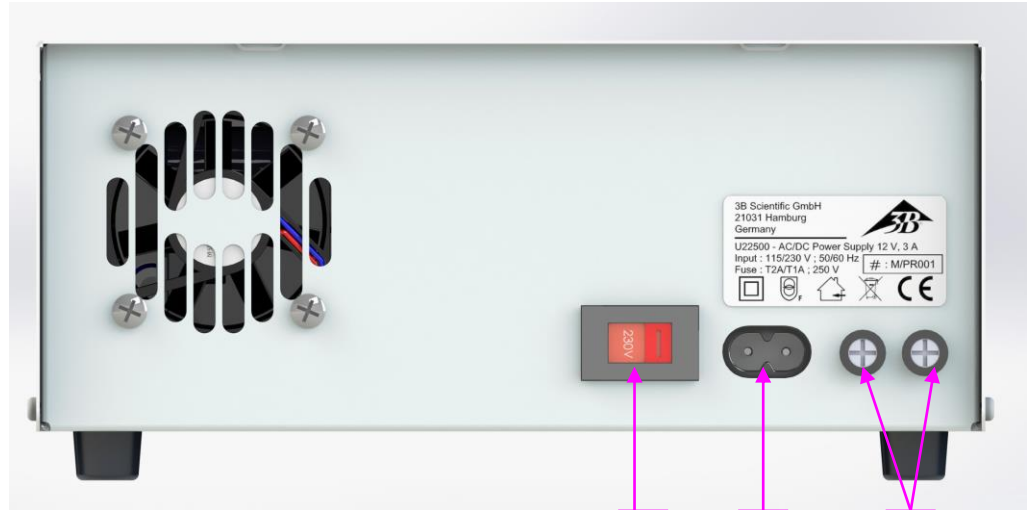
## 3 OVERVIEW

### 3.1 Front panel



1	ON / OFF
2	AC outputs
3	Current adjustment DC
4	DC output

## 3.2 Rear panel



5	Main input selector 115/230V
6	Power connector
7	Main input fuse

## 4 OPERATING PRINCIPLE

### 4.1 Operating limit

In case of jointly use of AC and DC outputs, the total output power shouldn't exceed 36 W.  
Temperature shutdown can appear if this power is overridden.

2 possible cases:

- AC current output is stopped (one of circuit breaker is triggered on the outputs).
- DC output is off (temperature control is ON)

In any cases, disconnect the uses and wait for the automatic rearmament that will start as soon as the internal temperature will be low enough.

## 5 OPERATING

### 5.1 Mounting and placing the power-supply

For an optimal operation, the power supply must stand on its 4 rubber stops.

The rear panel must be widely cleared not to block the air flow of the fan.

Before the first using, check the main input on the selector to be conform with the local requirements.

Fuses must be conform with the description below, depending of the main input.

NETWORK	Glass fuse 5x20mm
230 V AC	T1A 250V
115 V AC	T2A 250V

Unfold the main power cord of its power connector and connect it to a 115 V or 230 V AC socket, your instrument is ready to work.

### 5.2 Use

Push on the «I» of the ON/OFF switch [1], your power supply is working.

Your power-supply has 2 distinct and completely separated power supplies.

#### 5.2.1 AC outputs

The three AC outputs [2] 3, 6, 12 V with common point 0 are protected by thermal circuit breaker (PTC type) that works as soon as the output current exceed 3 A on one of the outputs.

The rearmament is automatic as soon as the default is deleted and the circuit breaker temperature is back to normal.

It's possible to manufacture two other voltages:

- 9 V by connecting between 3 V and 12 V.
- a symmetrical 2 x 6 V voltage by connecting to the 0 V – 6 V – 12 V outputs (with the midpoint on the 6 V)

#### 5.2.2 DC outputs

Voltage value available on the DC output [4] is adjustable by the knob [3].

Turn the knob to adjust the desired value.

Connect the load on the sockets [4] (Blue = negative; Red = positive).

### 5.2.3 Precautions

Always adjust the power supply before connecting the load.  
Connect the load with sufficient diameter (1mm<sup>2</sup>) insulated cord.  
Disconnect the load before switching off the power-supply.  
Avoid dust for the storage of the instrument.  
A temperature control circuit controls the fan, it works only when necessary.

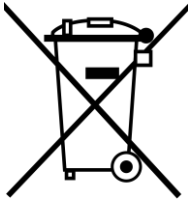
## 6 MAINTENANCE

No particular maintenance is required for this instrument.  
Avoid : dust, humidity, shocks ; your instrument will appreciate it.  
For cleaning, use a soft, damp cloth.

## 7 WARRANTY

During two years, spare parts and workmanship are guaranteed.  
This guarantee does not apply to instruments presenting defects or faults caused by an improper use (wrong mains voltage, shocks ...) or which have been repaired outside our factory or the repair shops of our authorized agencies.

## 8 WASTE PROCESSING



If you don't store the package, it should be dropped off at the nearest local recycling center.  
If the appliance is to be discarded, do not dispose of it in household waste.  
It is important to follow local guidelines for the treatment of electrical waste.

## 9 EU DECLARATION OF CONFORMITY

3B Scientific GmbH  
Rudorffweg 8, 21031 HAMBURG GERMANY

Declares the product

Name: AC/DC POWER SUPPLY 0 ... 12 V / 3 A  
Type: 1021091 / 1021092

is conformable to following specifications :

Low voltage: 2014/35/UE  
EMC: 2014/30/UE  
RoHs: 2011/65/UE

The following harmonized standards have been applied:

Safety: EN 61010-1:2010  
EMC: EN 61326-1:2013