

# Operating instructions



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 **broncolor**  
VISATEC

# Operating instructions

# Powerbox 900


by bron

## Before use

We are pleased you have chosen a Powerbox 900 by bron which is a high-quality product in every respect. If used properly, it will render you many years of good service. Please read all the information contained in these operating instructions carefully. They contain important details on the use, safety and maintenance of the appliance. Keep these operating instructions in a safe place and pass them on to further users if necessary. Observe the safety instructions.

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# Important safety instructions



**VISATEC and broncolor flash light systems should be utilised exclusively for professional photo shootings and only by qualified personnel. Before starting up your Powerbox 900 read carefully all the information in your operating instructions. The safety instructions therein must be strictly followed!**

- **Read and understand all instructions before using!**
- **Remove the transport protection and the packing material**
- **Close supervision is necessary when any appliance is used near children. Do not leave the Powerbox 900 unattended while in use!**
- **VISATEC and broncolor units and accessories meet an extremely high safety standard! When connecting accessories of other brands to VISATEC or broncolor units, integrated safety measures may become ineffective! Due to different design features and contact assignment of the lamp plugs of other brands, the user himself/herself may even be at risk. We offer no guarantee and accept no liability for damages which may be caused by this type of usage!**
- **To avoid the risk of fire, electric shock or injury to persons utilise exclusively the accessory recommended by the manufacturer!**
- **Check that the mains voltage corresponds to the information on the type plate of the unit!**
- **Only units designed for mains power operation may be connected to the Powerbox 900.**
- **The Powerbox 900 is designed for use in dry conditions and in an ambient temperature from 0°C to 35°C! The Powerbox must be protected from wetness, condensation, from dripping and splash water, humidity, dirt, sand, metal chips and exposure to dust!**
- **Protect the Powerbox 900 from electromagnetic fields, shock and vibration!**
- **Protect the Powerbox 900 from heat and frost! If the Powerbox 900 freezes continuous loss of power output and serious technical damage can result!**
- **Sudden temperature differences can cause condensation water in the unit! In such situations the Powerbox 900 must stay for 1 hour in a well ventilated place to acclimatise to the new temperature before startup!**
- **Do not operate the Powerbox 900 in an environment where there is a risk of explosion!**
- **The Powerbox 900 should not be operated in or near water!  
Attention: high voltage!**
- **The Powerbox 900 should not be immersed in water or other liquids!  
It could cause an electric shock! Attention: Danger!**
- **If an extension cable is necessary, a cable with a current rating at least equal to that of the appliance should be used. Cables rated for less amperage than the appliance**

may overheat. When using a cable reel, it must be completely unrolled before use to prevent overheating of the cable!

- If the Powerbox has to be operated inside a bag, make sure that there is sufficient ventilation !
- Do not touch the connection socket for the mains cable on the Powerbox 900 and do not poke in it with metal objects!
- Burns can occur from touching hot parts!
- Let the unit cool completely after use and before packing!
- Always unplug appliance from electrical socket before cleaning and servicing and when not in use! Never jerk cable to pull the plug from the socket. Grasp plug and pull to disconnect!
- Dropped or damaged units or lamps must be checked by a specialist before reconnection!
- To reduce the risk of electric shock, never open the Powerbox! Attention: Danger! Dangerous voltages could still remain inside the unit even after it has been disconnected from the mains supply. Therefore, take the unit to an authorised VISATEC or broncolor service station when service or repair work is required. Incorrect reassembly can cause electric shock, even when the unit is closed!
- This unit produces AC voltage of 230 V or 110 V at the outlet socket and must not be touched by children! Attention: danger! Even when switched off, 230 V or 110 V AC voltages could still be present at the outlet socket for a while due to loaded capacitors.
- As soon as you assume that operation of the unit under safe circumstances is no longer possible, unplug the unit immediately, protect it from adverse conditions and make sure that it is not put into operation inadvertently. Do not operate the unit when it does not show signs of working, if there are adverse environmental conditions, if there is visible damage, when damage has occurred during transport, or after storing the unit under unfavourable conditions.
- Service and repairs – Service and repair work may only be carried out by authorised service personnel.
- When transporting with the strap, ensure that the strap hooks are properly engaged.
- **Shipping instructions Powerbox 900:**  
Use the original packing to transport the Powerbox 900! Before shipping, pack the unit in our supplied protective packing material.

# Controls and displays

1. Battery charge voltage display (or malfunction)
2. Battery charge voltage display (full), green ready display
3. Switch "on/off"
4. AC socket
5. Charge socket
6. Charge state display green
7. Charge state display yellow
8. Charge state display red

## Front panel



## Side view



## Battery charger



# 1. Powerbox 900

The Powerbox 900 voltage transformer is a modern microcontroller controlled unit, especially suited for mobile applications. The Powerbox 900 converts the low DC input voltage into a higher AC voltage. The output alternating voltage corresponds to a true sinusoidal alternating voltage. This instruction manual deals with the operation of the Powerbox 900 with monolights from Bron Elektronik AG.

The Powerbox 900 is characterised by the following features:

- true sinus output voltage
- high efficiency
- precise stable voltage thresholds
- under- / over voltage protection
- overload management
- low voltage shutdown
- less idle current consumption
- low weight
- precise crystal-controlled 50 or 60 Hz frequency
- short circuit protection
- temperature-activated protective circuit
- soft-start function for loads with high inrush current

## 1.1 Application Powerbox 900

This unit is designed for professional photography as a mobile battery for mains-independent work. The Powerbox 900 enables photographers to work outside with their studio equipment in favourable weather conditions.

## 1.2 General information on operating AC loads with the Powerbox 900

In general, all the monolights from Bron Elektronik AG may be operated with the Powerbox 900 (see compatibility information in Chapter 8). However, in order to estimate the power requirements and necessary reserves, it is important to know some typical characteristics of the unit which is connected to the Powerbox. Only units designed for mains operation may be connected to the Powerbox.



## Attention!

- Ensure that the operating voltage of the Powerbox and the connected unit have matching mains voltage specifications.
- Also, please note that continuous operation of the modelling light greatly reduces the energy supply through the Powerbox. Therefore, we recommend to work without modelling light.

## 2. Start up

### 2.1 Mains voltage

The Powerbox 900 is available in two different versions:

- a) as a unit version designed exclusively for 230 V / 50 Hz mains voltage.
- b) as a unit version designed exclusively for 120 V / 60 Hz mains voltage.

### 2.2 Connection

Check that the voltage data on the Powerbox 900 corresponds to the voltage of the unit that is connected.

Ensure that there is an adequate natural circulation of air at the Powerbox 900. Never cover the Powerbox 900 (3) and never operate the unit near combustible materials. Connect the Powerbox 900 with the desired unit and switch it on.

### 2.3 Battery charge with charger

The Powerbox 900 is charged via the socket on the unit (5). Please check that your mains voltage corresponds to the data on the type label of the charger. The charger (36.128.XX) charges the Powerbox 900 in 2 levels which are displayed by the integrated LEDs of the charger:

LED red (8): battery empty

LED yellow (7): the battery is being charged in fast charge mode up to 90 % of full charge. Duration, depending on state of charge, up to 2.5 hours.

LED green (6): the battery is being fully recharged slowly (duration, up to an additional 30 minutes) and then kept on charge

**Attention!** Do not connect a fully charged battery to a charger.

## 2.4 Start up

We recommend to transport the Powerbox always using the shoulder strap. The length of the cable between the Powerbox 900 and the connected unit should not be longer than 10 metres.

- 1.) Ensure that the Powerbox 900 is fully charged (see chapter 2.3).
- 2.) Connect (4) the desired unit (e.g. monolight).
- 3.) Switch on the Powerbox 900 using the mains switch (3). The green control lamp (2) lights up when the PB 900 is charged.
- 4.) Now switch on the unit. Depending on the unit connected a low charging noise can be heard from the coil. Also, the homogeneity of the modelling light analogue to the charging intervals can slightly vary, which is noticeable from a slight buzzing and flickering of the halogen lamps.

## 3. Energy display

The LED indicates various modes of operation of the Powerbox.

LED lights up green (2):

- The Powerbox 900 is ready for operation.

LED lights up red (1):

- The Powerbox 900 has shut down to prevent damage to the battery due to too low battery voltage.
- The red LED (1) of the Powerbox 900 can light up briefly analogue to the charging intervals at approximately 35 % remaining energy (this is not a malfunction).

## 4. Safety

The Powerbox 900 works with an integrated automatic safety device which cannot be exchanged. Should the Powerbox 900 not respond, switch it off and on again, and subsequently test the Powerbox 900 without load. If the unit does not react, either the battery is empty or the unit is defective and must be repaired by an authorised technician.

## 5. Protective facilities

### 5.1 Thermal protection

If the temperature becomes too high inside the Powerbox 900, the energy flux will be blocked and the Powerbox 900 switches off automatically. After the cooling process, the Powerbox 900 can be switched on again.

## 6. Maintenance / Repairs

Your Powerbox 900 is a precision device which will work without problems for many years if you take adequate care. However, if troubles occur, please never try to open the unit in order to repair it yourself. Dangerous voltages could still remain inside the unit even after it has been switched off. Bring it always to a VISATEC or broncolor service station for maintenance and repairs.

### 6.1 Care and use of the Powerbox 900 battery

#### **Important:**

- We recommend to charge the battery before startup.
- We recommend to charge the battery every time after use, even if it is only partly discharged. A long period of time between charging and discharging of the battery can influence its performance, or reduce the service life, respectively.
- Ensure that the battery does not fully run down.

### 6.2 Battery care

To guarantee a longer lifespan of the battery we advise to charge it completely at these specific times:

- If possible, every time after use
- Always before longer storing or non-use
- At least, in 3 month intervals

Even if the battery was partly recharged it can be utilised without problem as it does not suffer from the inconvenient memory effect.

Utilisation after longer storing: The battery should be charged to compensate the loss of its own discharging during storage.

### 6.3 External charger

- Please take into consideration that a fully charged battery should not be connected to a charger.
- Consider also that the battery can be recharged 400 times under extreme conditions (for example fast charge). From then on, the power output of the battery will steadily decline.

### 6.4 Symptoms of a defective battery

- Rapid loss of power after complete charge
- Noticeable reduction of the number of flashes

## 7. Technical data

Energy	Max. 900 J, for charge
Power	Max. 450 W, for power supply
Voltage	230 V / 50 Hz 120 V / 60 Hz
Ready display	Unit is switched on
Energy outlets	1 for battery supply 1 for the unit
Power output distribution	After use, 900 Ws as maximum
Power requirements for VISATEC and broncolor units	Powerbox 230 V: Unit 200-240 V / 50 Hz Powerbox 120 V: Unit 100-120 V / 50-60 Hz
Controls	Info-LEDs
Number of flashes per battery charge	Depends on the monolight utilised and on the power level
Compatibility (for ex. 220 V)	All monolights of the VISATEC range (Except: Solo 3200 B, as max. is 1200 J) and the monolights of the broncolor range (Except: Minipuls C200, as max. is 1500 J).
Standards	2006 / 95 / ECC
Dimensions (L x W x H)	21.5 x 14 x 20.5 cm / 8.5 x 5.5 x 8 inch
Weight	6.5 kg / 14.3 lb

## 7.1 Number of flashes

<b>Product</b>	<b>Max. flash energy</b>	<b>Number of flashes</b>
Solo 400 B	130 J	520
Solo 800 B / Logos 800	300 J	240
Solo 1600 B / Logos 1600	600 J	120
Solo 3200 B	900 J (Setting 9.5)	90
Minicom 40	300 J	240
Minicom 80	600 J	120
Minipuls C200	900 J (Setting 9.2)	50

## 8. Guarantee

All bron products have a high quality standard. We offer a 2-year factory guarantee from the date of purchase (for the first owner) on the aforementioned units, except for flash tubes, halogen lamps, protecting glasses, cable, batteries, rechargeable batteries and textiles.

Faults resulting from non-observance of safety instructions, incorrect handling, use of accessories of another manufacturer or unauthorised intervention / modification are excluded from the factory guarantee. We assume no liability for damages resulting from non-observance of the safety instructions, incorrect handling, use of accessories of another manufacturer or unauthorised intervention / modification.

In case of technical problems please contact immediately the nearest authorised VISATEC, bron or broncolor service station.

## 9. Environmental protection information



When no longer in use, this product may not be deposited in the normal household waste but should be brought to a collection point for the recycling of electrical and electronic appliances. A symbol on the product, the operating instructions or the packaging draws attention to this. The materials are recyclable as marked. By re-use, recycling or another form of using old appliances you are making an important contribution towards the protection of the environment. Please ask your local authorities for the appropriate disposal point.

Thanks for having chosen a product from our company. We wish you much pleasure and success with our products.

June 2008

Article numbers, product descriptions and scope of delivery can vary from one country to another. Detailed information are available in internet under [www.bron.ch](http://www.bron.ch) or from our broncolor or VISATEC distribution partner. Errors and misprints excepted.

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DECLARATION OF CONFORMITY  
DECLARATION DE CONFORMITE**

Wir / We / Nous :

**Bron Elektronik AG, Hagmattstrasse 7, CH-4123 Allschwil, Schweiz**

erklären in alleiniger Verantwortung, dass das Produkt  
declare under our sole responsibility that the product  
*déclarons sous notre seule responsabilité que le produit*

**powerbox 900**

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