Operating instructions

broncolor®

Topas A2/A4/A8Evolution

www.broncolor.com

Operating Instructions b r o n c o l o r

Topas A2/A4/A8 Evolution

Before use

We are very pleased you have chosen a broncolor Topas A power pack which is a high-quality product in every respect. If used properly, it will render you many years of good service.
Please read 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

When using your studio flash equipment, basic safety precautions should always be followed, including the following:

1. Read and understand all instructions before using.

2. Close supervision is necessary when any appliance is used near children. Do not leave appliance unattended while in use.

3. Care must be taken as burns can occur from touching hot parts.

4. Do not operate appliance with a damaged cable or if the appliance has been dropped or damaged – until it has been examined by a qualified service person.

5. Position the cable so that it will not be tripped over, pulled, or contact hot surfaces.

6. 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.

7. The power pack must be switched off while plugging in or unplugging the lamp base plugs.

8. Always unplug appliance from electrical socket before cleaning and servicing and when in use. Never jerk cable to pull plug from socket. Grasp plug and pull to disconnect.

9. After use, let appliance as well as the connected lamp bases cool down completely before putting away.

10. Put away and wind up the cables so that they do not touch hot parts of appliances and lamps.

11. To reduce the risk of electric shock, do not immerse this appliance in water or other liquids.

12. To reduce the risk of electric shock, do not disassemble this appliance, but take it to a qualified service person when service or repair work is required. Incorrect reassembly can cause electric shock when the appliance is used subsequently.

13. The use of an accessory attachment not recommended by the manufacturer may cause a risk of fire, electric shock, or injury to persons.

14. Connect this appliance to an earthed socket.

Attention:
Read before starting up the power pack

- Prior to replacing fuses, modelling lamps or flash tubes, discharge the power pack and disconnect from power supply. Disconnect the lamp base from the power pack.

- These units are designed for use in dry conditions. Protect them from water and from excessive exposure to dust.

- The units are not suitable for use in an environment where there is a risk of explosion.

- The accessories mounted onto the lamp bases may heat up to high temperatures under specific conditions. Handle with care!

- With due allowance for heat radiation, lamp bases with more than 100 W modelling light may be directed against inflammable surfaces only at a minimum distance of 1 m.

- For safety reasons, never operate the lamps without the protecting glass in place.

- Flash light contains, similar to sunlight, a specific portion of UV light. The undesirable side effects on skin and eyes are considerably reduced by using flash tubes and glass covers with an UV coating. Without these or other protective filters, use with extreme care when shooting.

- Even when disconnected from the power supply, dangerous voltages may remain inside the unit. For this reason units should be opened by trained personnel only.

- Do not block the cooling louvers on the unit.

- **broncolor** power packs and lamp bases meet an extremely high safety standard. When connecting **broncolor** products to other manufacturers' products, 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.

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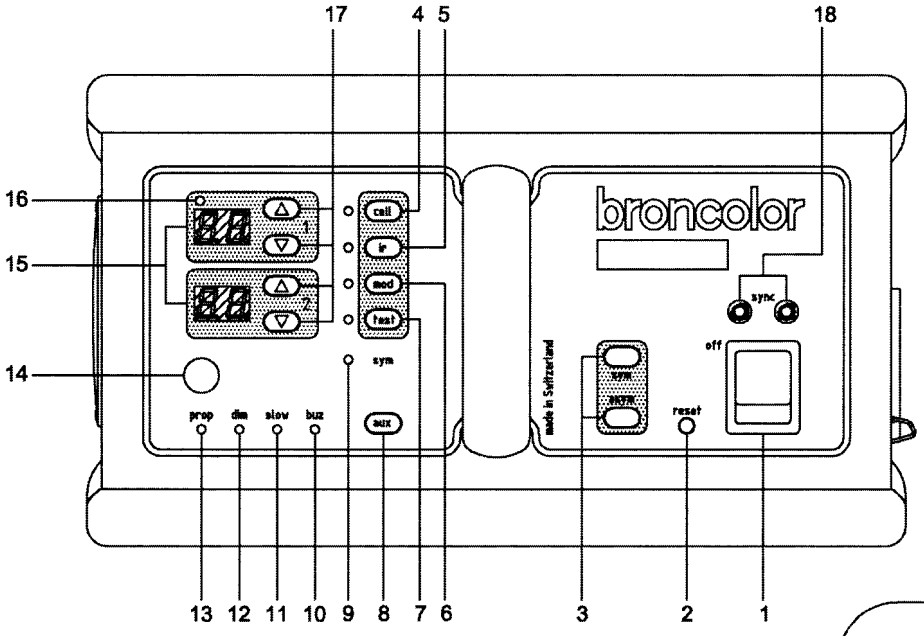
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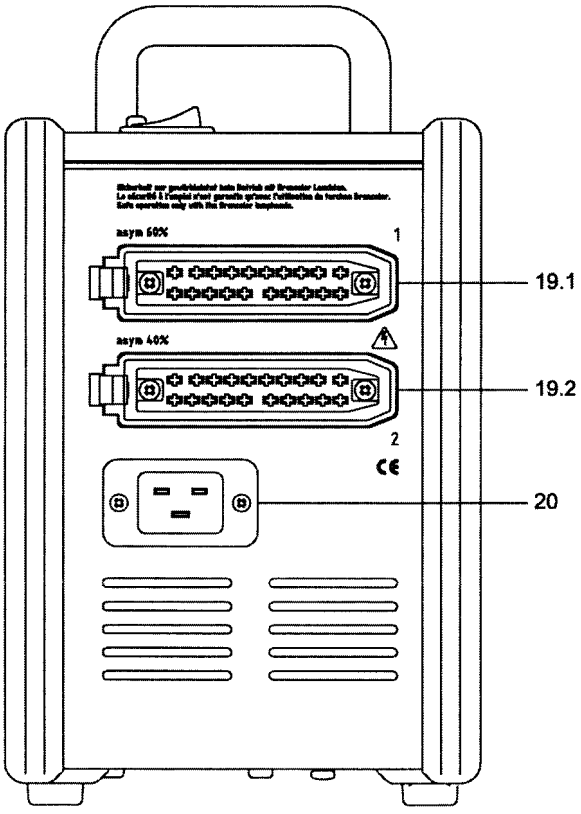
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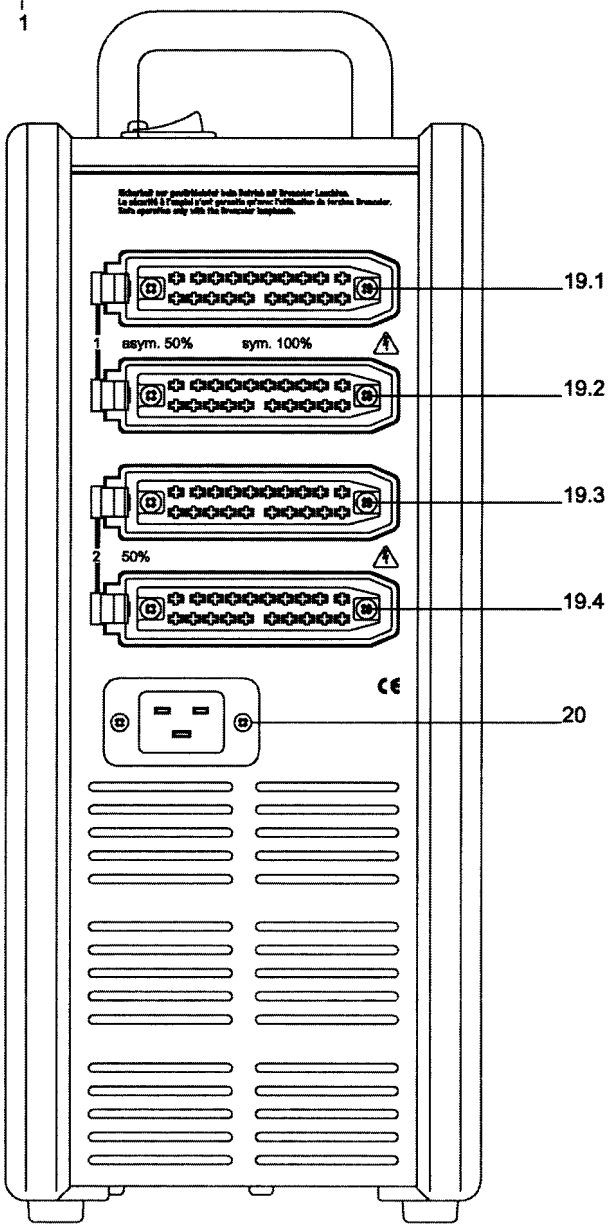
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1. Application Topas A

We are delighted that you have chosen the high quality product broncolor Topas A. With proper care it will render you many years of good service.

This mains (AC-line) supplied studio flash unit is designed for professional photography. For your safety, use a three-wire extension cable when required.

2. Start up

2.1 Mains (AC-line) voltage

The power packs Topas A2 and Topas A4 automatically adapt to the respective mains (AC-line) voltage between 240 V and 100 V. When the unit is operated on 100 V the following limitations come into force:

- maximum flash energy Topas A2: 1200 J instead of 1600 J
- maximum flash energy Topas A4: 2400 J instead of 3200 J
- the flash duration is extended by about 20%

The Topas A8 Evolution power pack is designed only for the mains voltage 200 – 240 V.

Please check that your local mains voltage corresponds with the specifications on the nameplate of the unit. Also ensure that the halogen modelling lamps (modelling light) of the connected lamp bases correspond with the local mains voltage.

2.2 Earthed Mains (AC-line)

Connect unit to current supply always using an earthed mains plug.

2.3 Start up

Use the mains (AC-line) switch (1) to power-up unit. During the charging process the digital power displays (15) of the two lamp outlets (1 and 2) flash, after which, they become continuous. Additionally the green ready light (7) is lit.

3. Energy control

3.1. Variation of the energy

Use the "up/down" keys (17) to control the flash energy (flash intensity) on both lamp outlets (1 and 2), respectively channels, within a range of 5 f-stops. Whole numbers are full f-stop intervals, decimals indicate 1/10 f-stop steps.

Brief pressure on the "up/down" keys runs the power up (or down) by a 1/10 f-stop interval, prolonged pressure by a full f-stop. Both energy displays (15) then blink until charging or discharging has stabilized the new level.

3.1.1 Topas A2 / Topas A4

The maximum flash energy corresponds to value 10, the minimum to value 5. It is possible to extend the control range of Topas A2 to 6 f-stops and of Topas A4 to 6,5 f-stops (see chapter 9). Additionally the control range can be extended in the asymmetrical mode with the following f-stops values by choosing the respective lamp outlet: with Topas A2: +1,3 f-stops and with Topas A4 +1,7 f-stops.

3.1.2 Topas A8 Evolution

The maximum flash energy corresponds to value 10, the minimum to value 6. It is possible to extend the control range by 5 f-stops (see chapter 9). Additionally the control range can be extended in the asymmetrical mode by one f-stop by choosing the respective lamp outlet or channel.

3.2 Symmetrical or individual energy distribution

Topas A power packs can be switched from symmetrical to individual (asymmetrical) energy distribution. Press the keys "sym" or "asym" to select the required operating mode (3). The green control lamp of the display "sym" (9) lights up when the unit is in symmetrical operation. In the asymmetrical mode each lamp outlet is individually controllable. The only exception is the Topas A8 Evolution, in which four lamp outlets are controlled in pairs over two individual, controllable channels.

3.2.1 Topas A2 on mains (AC-line) 110 V-240 V

If the unit is set to individual energy distribution the power is divided between the two lamp base outlets as follows:

Lamp outlet 1 = 60%.
The control range of the flash energy extends between 1000 J down to 30 J
(optional down to 15 J)

Lamp outlet 2 = 40%.
The control range of the flash energy extends between 600 J down to 20 J
(optional down to 10 J)

3.2.2 Topas A4 on mains (AC-line) 110 V - 240 V

If the unit is set to individual energy distribution the power is divided between the two lamp base outlets as follows:

Lamp outlet 1 = 70%.
The control range of the flash energy extends between 2200 J down to 70 J
(optional down to 25 J)

Lamp outlet 2 = 30%.
The control range of the flash energy extends between 1000 J down to 30 J
(optional down to 10 J)

3.2.3 Topas A8 Evolution on mains (AC-line) 200 V -240 V

If the unit is set to individual energy distribution the power is divided between the two lamp base outlets I and II (1) respectively III and IV (2):

Lamp base outlet 1:
- with one lamp on lamp base outlet I or II = 50%
- with two lamps on lamp base outlet I or II = 25% per outlet

Lamp base outlet 2:
- with one lamp on lamp base outlet III or IV = 50%
- with two lamps on lamp base outlet III or IV = 25% per outlet (optional down to 95 J)

The control range of the flash energy extends per channel:
a) when using one lamp base outlet:
from 3050 J down to 190 J (optional down to 95 J)
b) when using both lamp base outlets:
from 1525 J down to 95 J (optional down to 50 J) per lamp base

In asymmetrical mode, a maximum of 3050 J can be drawn from each lamp socket respectively channel with Topas A8 Evolution. Consequently Topas A Evolution power packs are in asymmetrical mode compatible with all broncolor lamp bases. Should the total power pack energy of 6100 J be triggered from one individual lamp base, a Pulso Twin lamp must be used which, in comparison with a Pulso 8 lamp, results in a shorter flash duration.

If the power pack Topas A8 Evolution operates in symmetrical mode, the full power pack energy of 6100 J can be drawn from any socket. This requires the use of a Pulso 8 lamp however. For safety reasons, smaller lamps are blocked in this operating mode. The advantage of the Pulso 8 lamp in comparison with the Twin lamp is its single and longer lamp cable, which is also suitable for large installations.

3.2.4 Operation Topas A2 on mains (AC-line) 100 V

If the unit is set to individual energy distribution the power is divided between the two lamp base outlets as follows:

Lamp base outlet 1 = 60%.
The control range of the flash energy extends between 700 J down to 45 J
(optional down to 20 J)

Lamp base outlet 2 = 40%.
The control range of the flash energy extends between 500 J down to 30 J
(optional down to 15 J)

3.2.5 Operation Topas A4 on mains (AC-line) 100 V

If the unit is set to individual energy distribution the power is divided between the two lamp base outlets as follows:

Lamp base outlet 1 = 70%.
The control range of the flash energy extends between 1700 J down to 105 J
(optional bis 55 J)

Lamp base outlet 2 = 30%.
The control range of the flash energy extends between 700 J down to 45 J
(optional bis 20 J)

3.2.6 Stabilisation of the colour temperature

The power packs Topas A2 and Topas A4 are equipped with a circuit providing an approximate stabilisation of the colour temperature (CTC light). Thus, in symmetrical operation, the colour temperature can be constantly maintained over a range of about 3 f-stops within +/- 150K.

4. Lamp base outlets

The two lamp base outlets (19.1 / 19.2) of the Topas A2 / A4 are marked with the numbers 1 and 2. The four lamp base outlets (19.1 / 19.2 / 19.3 / 19.4) of the Topas A8 Evolution are defined in pairs with the numbers 1 and 2 on the two channels. Each outlet respectively channel can be switched on individually. The digital power display (15) shows the flash energy of the respective lamp or channel.

The broncolor lamp assortment can be applied without limitations with Topas A2 and Topas A4. Only the lamp bases Pulso 8 can be used with Topas A8 Evolution in symmetrical mode.

5. Modelling light

5.1 General

The "mod" key (6) switches on the modelling lamps for all connected lamp bases. When switched on, the green LED lights up. Lamp bases also have an additional modelling lamp switch.

Attention: Please note, the voltage of the modelling lamp must correspond with the mains voltage.

5.2 Proportionality

The brightness of the modelling light can be set proportionally to the flash intensity. It is explained in chapter 8, how to set the individual operating modes (modelling light proportionality). To assure proportionality when operating units with different power output ratings, the units have various proportionality levels. Proportionality is guaranteed if the identical prop level has been set for all power packs. The higher the digit, the brighter the modelling light.

The following operating modes are possible:

„P1“ Proportional modelling light with broncolor power packs up to 6400 J (= setting ex works for Topas A8)

„P2“ Proportional modelling light with broncolor power packs up to 3200 J (= setting ex works for Topas A4)

„P3“ Proportional modelling light with broncolor power packs up to 1600 J (= setting ex works for Topas A2)

„P4/5“ If a power pack is operated at a low output level, the halogen modelling light will be, as known, relatively weak and yellowish. To counteract this problem, the Topas is equipped with two additional modelling light proportionality levels: P4 for 800 J and less, P5 for 400 J and less. Thus the brightness of the modelling light can be increased.

„HI“ All lamp bases operate at full modelling light power independent of flash output. This setting will allow video recordings using the modelling lamps.

„LO“ Lighting level is reduced for all lamps independent of the flash output to reduce power consumption and extend the service life of the halogen lamps.

Pressing the "mod" key (6) for 2 seconds when the modelling lamp is on will give direct access to the “HI” mode. To return to the previous mode briefly press "mod" again.

Highest possible proportionality settings when combining devices of different output:

	Topas A2 Grafit A2 Nano 2 Mobil	Topas A4 Grafit A4 Nano A4	Topas A8 Evolution
Topas A2 Grafit A2 Nano 2 Mobil	P3	P2	P1
Topas A4 Grafit A4 Nano A4	P2	P2	P1
Topas A8 Evolution	P1	P1	P1

Example 1: A power pack Topas A2 is operated together with a power pack Topas A8 Evolution. The modelling light is proportional and most intense when both are set to mode "prop1".

Example 2: A power pack Topas A4 is operated together with a Grafit A2. The modelling light is proportional and highest possible when both are set to mode "prop2".

5.3 Modelling light switch on lamp base

The switch on the lamp base permits individual lighting control with the modelling light. To avoid damage to the lamp filament, we recommend, always to switch off the modelling light before moving the lamp base.

6. Release and remote control

The flash release is enabled when 75% of the selected energy is available. Please note, however, that the ready indicator is activated only at 100% charge (chapter 7).
When triggering via the “cell” or infrared receiver (IR), ensure that the infrared receiver of the device is not obstructed by obstacles.

6.1 Photocell (cell)

The photocell can be switched on or off by using the „cell“ (4). Is the function activated the green LED lights up. After a flash series an active cell is blocked, and the green LED lights up. By pressing the „cell" key, the block is cancelled.

When triggering via the “cell” or infrared receiver (IR), ensure that the infrared receiver of the device is not obstructed by obstacles.

6.2 Infrared-receiver (ir)

The infrared receiver can be switched on and off by using the „ir“ (5) key. If the function is activated the green LED lights up.

When triggering via the “cell” or infrared receiver (IR), ensure that the infrared receiver of the device is not obstructed by obstacles.

6.3 Infrared flash release channel

You can trigger Topas A power packs from broncolor infrared transmitters. If a power pack is triggered via infrared, the flash is released after a transmission delay of 1/1000 s.

6.4 RFS Interface

The RFS interface of the power packs Topas A in the RFS version can be switched on/off. The procedure is described in chapter 9.

6.5 Remote control channels

The remote control can only be used with the power packs Topas A RFS and is effected by radio over the separate channels (studio workstations). The procedure is described in chapter 9.

6.6 Power pack addresses

The assignment of addresses by radio to each unit is only possible with the power packs Topas A RFS. This allows individual operation within the same studio workstation. The definition of the unit addresses is described in chapter 9.

6.7 Sync socket

Synchronous cables art. no. 34.111.00 or 34.112.00 may be plugged into the socket to release flashes via cable.

6.8 „Test“ key

The key (7) allows manual release of the power pack (see chapter 7.1).

7. Flash ready signals visual/audible

7.1 The visual ready signal

is the green LED at the "test" key (7). It lights up only when the unit is fully charged to the set flash energy.
After a flash, the power display (15) of the occupied lamp base outlets blink and the LED goes out and lights up again when the unit is fully charged once more.

7.2 The audible signal

("buzzer") sounds when the power capacitors are at 100% charge of the set flash energy. It may be switched on or off (chapter 8).

7.3 Audible fault signal

When the flash discharge fails, a warning signal of approx. 3s duration will sound and the display (15) of the respective lamp base will blink.

8. Setting additional functions

The "aux" key (8) is used to select additional functions. Repeated actuation of the key toggles through the following display modes:

- Select proportionality level of the modelling light	LED “prop” blinks (13)
- Set DIM	LED “dim” blinks (12)
- Set slow charging	LED “slow” blinks (11)
- Set buzzer	LED “buz” blinks (10)
- Return to standard display	no LED blinks

After the setting has been performed, the standard display can be re-activated by pressing the „aux“ key (8) or automatically after a waiting time of 4 seconds.

To set the additional functions select the respective LED (example: "Set dim"). The digital display 2 (15) will then show the actual value which can be changed with the "up/down" key (17). If a setting is entered which deviates from the basic setting value, the respective LED will remain lit as a reminder after the display returns to standard (exception: function „prop“). If the unit is switched off and on again, it will be in the "standard display" mode. Previously set additional functions are retained.

8.1 Set proportionality level of the modelling light (prop)

The proportionality level of the modelling light can be selected by a brief pressure on the "up/down" key (17) of the lamp base switch 2. With repeated actuation of the key the following modes can be set, each shown respectively on the digital display 2 (15): P1, P2, P3, P4, P5, HI, LO.

8.2 Set charging dimmer (dim)

The dim function can be switched on or off (on/--) by briefly pressing the “up/down” key (17) of lamp base outlet 2. If the dim function is switched on, the modelling light will extinguish when charging takes place. This feature can be used as a visual flash monitor and to reduce the current load on weak mains (AC-lines).

8.3 Set slow charge (slow)

In case of weak mains (AC-line) power supply lines, charging time may be extended to approx. double the standard value. The slow charge mode is switched on or off (on/--) by briefly pressing the “up/down” key (17) of the lamp base outlet 2.

8.4 Set buzzer (buz)

The ready buzzer sounds when the power capacitors are 100% charged up. The ready buzzer is switched on or off (on/--) by briefly pressing the “up/down” key (17) of the lamp base outlet 2. The alarm tone will remain audible even if the ready buzzer is switched off.

8.5 Sequences (serial flashes)

This function is selected with a prolonged pressure (1 s) on the key “test” and it permits to set a defined number of flash discharges from 1 to 8 (displays “n1” to “n8”). When the function is activated, i.e. a value between “n1” and “n8” is selected, the digital display no. 1 (15) shows alternately the selected value of flash energy and the sequence of flashes. The function is de-activated by selecting the value “n0”. Returning to the former operating mode, is effected by pressing the key “aux” (8).

9. Basic settings ex works

The basic settings ex works can be viewed and in some instances changed with the following procedure:

Switch the unit on. Simultaneously press the "mod" (7) and "aux" (8) keys for 5 seconds. Digital display 2 (15) shows the selected function number and digital display 1 (15) shows the actual setting. Both values can be changed with the "up"/"down" key (17).

The LED array will blink “cell”-“ir”-“mod”-“test”-“sym” to indicate that you are in the programming mode. In functions number 0 and 3, pressing the "up"/"down" key of the digital display 1 (15) will toggle through the "prop", "dim" or "slow" green LED display in order to show different parts of a multi-digit display.

Function number	**Meaning and possible settings**
0	Program version ("prop" is lit) Program number ("dim" is lit)
1	Setting ex works: off „on“: Extended control range of the flash energy. The detailed values are specified in section 3.1 of chapter 3. The lowest f-stop level exhibits greater tolerances with regard to colour and repetitive precision. The flash release is not guaranteed with all lamp base types.
2	*Switch on/ off the RFS Interface:* Settings ex works:”off” “off”: RFS Interface is switched off “on”: RFS Interface is switched on
3	Flash counter: "slow" is lit: xxxx**XX** "dim" is lit: xx**XX**xx "prop" is lit: **XX**xxxx
4	Delivery date: Month
5	Delivery date: Year
6	Country code
7	*Setting the studio workstation:* By pressing the keys „up/down“ (17) of the digital display number 1 (15) you can select the workstation („01“ to „10“). You can select up to 10 studio workstations.
8	*Setting the power pack address:* By pressing the keys „up/down“ (17) of the digital display number 1 (15) you can select the desired power pack address („01“ to „10“). Per studio workstation you can select up to 10 different unit addresses.

Return to normal operation by pressing the "aux" key or by switching off and on again the unit.

10. Protective facilities / Fault indication

10.1 Display "th"

If excessively high temperatures build up inside the unit despite the fan cooling effect, the charge mode will be blocked for a certain period of time and a long audible signal will be emitted.

During the cool-down period "th" shows on the display of lamp base outlet 2 (15). The display of lamp base outlet 1 shows in "countdown" procedure the remaining duration of the cooling process. The fan continues to operate, thus accelerating the cooling effect.

Attention: Do not switch off the power pack while it is cooling down. If the power pack is switched off too early, it is likely, despite a long break, that only a few flashes are possible when switching the unit on again, because the processor has not been able to follow the entire cooling process.

10.2 Display "A1"

The unit is equipped with an automatic afterglow blockout. If the flash tube exhibits afterglow (for example at the end of its service life), this blockout will block further charging to prevent consequential damage. A1 will show on the display of lamp base outlet 2 (15). In this status, the ready lamp is no longer green. The block can be cancelled by switching the unit off and on again.

10.3 Circuit breaker

In the event of an electrical malfunction, the circuit breaker (2) will automatically disconnect the power pack from the power source. The unit can be restarted by pressing the circuit breaker button. If it disconnects again immediately, the power pack must be serviced by authorized service staff.

10.4 Monitoring of the modelling light

If the power packs Topas A2 and Topas A4 are connected to 200-240 V mains (AC-line) voltage, after previously having been operated on 100-120 V mains voltage, they will release an audible signal and the modelling light will blink at a safely reduced voltage. This function serves as a reminder that the modelling lamp must be exchanged, and also to protect against bursting of the lamps. Switch the unit off and on again to return to standard operation.

10.5 Acoustic trigger control

At the end of their service life the flash tubes often show flash trigger failure. This fault is indicated by the unit with an intermittent acoustic signal. The sound disappears, when the flash tube flashes again correctly or the unit is switched off.

Note: With Topas A8 Evolution the acoustic flash trigger control is only activated, if per channel one of the two lamp base outlets are occupied.

11. Service/repair

Your broncolor power pack is a precision device which will work for many years without malfunctions if you take proper care of it. If malfunctions do arise, please do not attempt to open the unit to repair it yourself. Even when the unit is shut off, dangerous voltages may remain within the interior of the device. Leave service and repairs to our broncolor repair service.

12. Car battery converter

If no mains (AC-line) power is available, use the 12 V/220 V car battery converter.
The modelling light cannot be used in this mode (excessive load on battery) and must be removed.

- Switch off modelling light and disconnect the lamp base from the power pack.
- Connect converter to the 12-volt car battery with the + and – terminal clamps.
- Connect unit to converter; switch on converter and unit.
- After flash work, switch off converter during pauses. Charge battery if needed by allowing the car engine to run.
- 1 Topas A can be connected to the converter.

13. Lamp bases

The following information applies to Pulso, Unilite, Primo and Picolite lamp bases.

13.1 Replacing flash tubes

Prior to any change of the flash tube, the lamp base must be disconnected from the power pack!

Lamp bases use plug-in flash tubes.

The Pulso, Primo and Unilite flash tubes 1600 J normally have the UV coating directly on the flash tube. In this case an uncoated protecting glass has to be used. The protecting glasses as well as the flash tubes 1600 J are available in the versions „UVE coated“ (5500 K) as well as uncoated (5900 K). For this reason the lamp bases Pulso, Primo and Unilite can also be fitted with uncoated flash tubes and coated protecting glasses.

The flash tubes 3200 J for Pulso, Primo and Unilite lamp bases as well as for the small lamp Picolite are, for thermal reasons, only available uncoated. Therefore an UV coated protecting glass must be used with these lamp bases.

The flash tube and protection glass of the Pulso 8 lamp base form one module.

13.1.1 Pulso / Primo and Unilite lamp bases up to 3200J

To change the flash tube, carefully pull off the protecting glass. Pull straight, without tilting. Lamp bases manufactured from 1996 on, have the upper of the three springs holding the protection glass differently shaped to provide a better hold. When removing the protection glass it is necessary to first release the glass from the bottom spring. Release the contact spring (only Primo lamp) and again be sure to pull the flash tube straight along the lamp base axis.

When inserting the tube check that the ceramic base is fully pushed back in, and that for the Primo lamp bases the contact spring rests on the internal ignition. Finally, the protecting glass must be re-inserted before the modelling lamp and flash tube. It is held by three springs. As Primo lamp bases can be used with 1600 J tubes as well as 3200 J tubes, a corresponding warning sticker is supplied with each flash tube which must be affixed to the lamp plug when inserting the tube.

13.1.2 Pulso 8 Leuchte

The flash tube is available only with integrated protecting glass. When exchanging the flash tube or replacing the modelling lamp, hold the flash tube carefully on the protecting glass and pull out in an axial direction. When inserting the flash tube check that the ceramic base is fully pushed back in.

13.1.3 Small lamp Picolite

This small lamp has a plug-in flash tube with spring fastener. For thermal reasons the UV-coating is on the protecting glass. The protecting glass is available in the versions "UVE coated" (5500 K) and "UVE matt coated" (5500 K).

To change the flash tube release the spring-ring and remove the protecting glass. The flash tube must be pulled out straight along the lamp base axis. When inserting the tube be sure that it is fully pushed in. Finally, replace the protecting glass and fasten with the spring-ring.

13.2 Changing the halogen lamp

The halogen lamps are also plug-in or screw-in. Taking the service life into consideration, the halogen lamp should not be handled with bare hands. Exchange of the halogen lamp is practically identical to that of the flash tube.

The Pulso G, Unilite, Primo and Picolite lamp base can be operated on the local mains (AC-line) voltage (100-240 V) when a halogen lamp is used which corresponds to the voltage.

13.3 Cooling fan

A cooling fan in the lamp base cools the flash tube and modelling lamp. It also runs when the modelling lamp is turned off.

13.4 Thermal protection

The lamp bases are fitted with an automatic thermal protection. Should the lamp base overheat (e.g. by impeding the flow of cooling air), the modelling light is shut off. Nevertheless you may continue producing flashes. The Picolite, however, has an additional thermal protection which limits the number of flashes.

13.5 Lamp base plugs

The lamp base plugs and sockets have mechanical interlocks to prevent inadvertent disconnection. When plugging in, ensure that those interlocks engage completely. To unplug, push down the locking spring under the cable guide and lift out the plug. The power pack must be switched off to plug-in and to unplug.

13.6 Reflectors

Pulso, Unilite and Primo lamp bases have a bayonet fitting to attach reflectors. The Picolite small lamp has a built-in reflector.

13.7 Fuses

Only sand-filled fuses of the type indicated on the type plate may be used; otherwise the halogen lamp may burst.

14. Technical data

	Topas A2	**Topas A4**
Flash energy	1600J (Japan 1200J)	3200J (Japan 2400J)
F-stop at distance of 2m 100 ISO,reflector P70	64 2/10	90 2/10
Flash duration t 0.1 (t 0.5) with 230 V / 120 V	1600J: 1/300s (1/1000s) 1000J: 1/400s (1/1300s) 600J: 1/500s (1/1600s)	3200J: 1/150s (1/600s) 2200J: 1/180s (1/800s) 1000J: 1/250s (1/1300s)
Charging time (for 100% of selected energy)	230V, 120 V: 0,4 - 1,8s 100 V: 0,5 - 2s Can be switched to slow charge mode	230V, 120 V: 0,4 - 3,4s 100 V: 0,5 - 4s
	Automatic adaptation to the respective mains (AC-line) voltage	
Ready display	Visual and audible (can be switched off), signals when 100% of selected energy is reached	
Lamp base outlets	2	2
Power output distribution	Symmetrical and individual variable (asymmetrical)	
Controls	Dust and scratch proof, fully illuminated silicone keyboard and LED display.	
Control range of flash energy (Japan: ½ f-stop less)	Topas A2: 5 f-stops in 1/10 (1:32) intervals Switchable to 6 f-stops (1:64) Topas A4: 5 f-stops in 1/10 (1:32) intervals Switchable to 6.5 f-stops (1:90) By selecting the corresponding lamp outlet in asymmetrical mode additionally 1.3 f-stops with Topas A2, 1.7 f-stops with Topas A4	
Maximum asymmetry	6.2 f-stops	5.6 f-stops
Modelling light	Halogen max. 2 x 650 W at 200-240 V Halogen max. 2 x 300 W at 100-120 V Proportional to flash energy and „full“ and „low“ settings. Proportionality adjustable to other broncolor power packs and compact units and their various output ranges.	
Flash release	Manual release button, photocell (can be switched off), infrared receiver (can be switched off), sync cable, FCM 2, FCC, IRX2, IRQ	
Release control	Visual: Dim function of the modelling light, acoustic: buzzer	
Additional function	Sequences (flash series)	
No. of sync sockets	2	
Stabilized flash voltage	+/- 1%	
Standards	UL 122, EC-standards 73/23, 89/336 and 99/5	
Power requirements	200-240 V / 50 Hz: 10 A 110-120 V / 50-60 Hz: 16 A 100 V / 50 Hz: 16 A	
Dimensions (L x B x H)	280 x 162,7 x 272 mm	280 x 162,7 x 322 mm
Weight kg	5,8	8

Technical data (continuation)

	Topas A8 Evolution with lamp base Pulso G, Primo, Unilite or Pulso Twin	**Topas A8 Evolution with Pulso lamp base 8**
Flash energy	2 x 3050 J (4 x 1525 J)	6100 J
F-stop at distance of 2m 100 ISO, reflector P65	128 (Pulso Twin)	128
Flash duration t 0.1 (t 0.5) with 230 V	3050J: 1/150s (1/600s) 1525J: 1/300s (1/1200s)	6100J: 1/50s (1/230s)
Charging time (for 100% of selected energy)	0,5 – 5,2s	0,5 – 5,2s
	Can be switched to low charge mode	
	Topas A8 Evolution is only designed for a mains voltage of 200 – 240 V.	
Ready display	Visual and audible (can be switched off), signals when 100% of selected energy is reached	
Lamp base outlets	4	
Power output distribution	Symmetrical and individual variable (asymmetrical)	
Controls	Dust and scratch proof, fully illuminated silicone keyboard and LED display.	
Control range of flash energy	4 f-stops in 1/10 (1:16) intervals can be switched to 5 f-stops (1:32). By selecting the corresponding lamp outlet in asymmetrical mode additionally 1 f-stop	
Maximum asymmetry	5 f-stops	
Modelling light	Halogen max. 4 x 650 W at 200-240 V Proportional to flash energy and „full“ and „low“ settings. Proportionality adjustable to other broncolor power packs and compact units and their various output ranges.	
Flash release	Manual release button, photocell (can be switched off), infrared receiver (can be switched off), sync cable, FCM 2, FCC, IRX2, IRQ	
Release control	Visual: Dim function of the modelling light, acoustic: buzzer	
Additional function	Sequences (flash series)	
No. of sync. sockets	2	
Stabilized flash voltage	+/- 1%	
Standards	UL 122, EC-standards 73/23, 89/336 and 99/5	
Power requirements	200-240 V / 50 Hz: 10 A	
Dimensions (L x B x H)	280 x 162,7 x 446 mm	
Weight kg	15,6	

Subject to change in the interest of product enhancement.

15. Topas A RFS

The power packs Topas A are also available as a unit version with integrated 10 channel RFS Interface (**R**adio **F**requency **S**ystem). Each channel (studio) can control up to 10 units. This interface allows remote control respectively flash release by radio via the transmitter RFS as well as by means of a transceiver RFS via PC or Macintosh computer. When controlling via screen, 4 storage spaces for different lighting situations are at your disposal.

14.1 Modification to Topas A RFS

There is the possibility to modify Topas A power packs later on with a RFS interface. The modification will be made by the customer service centre of our broncolor agency in your country.

14.2 Topas A PLUS

Because of the laws in some countries, the use of the broncolor radio system is not allowed. Therefore the power packs Topas A are also available in the version Topas A Plus (that means with cable remote control). Besides the cable connection between the power pack and the computer, the application with RFS is almost identical.

Attention: *There is no camera transmitter available for Topas A Plus !*

Technical data

	Topas A RFS	**Topas A plus**
Flash release	Transmitter RFS, transceiver RFS (besides the options in chapter 14)	Analogue chapter 14
Remote control	- With integrated 10 channel RFS interface (**R**adio **F**requency **S**ystem) for the remote control of the unit by radio via transceiver RFS from PC- or Macintosh computer. Each channel (Studio) can control up to 10 units.	- With integrated interface for the remote control of the unit by cable from PC or Macintosh computer. Each channel (Studio) can control up to 10 units.
Operational distance outdoors	Up to 50 m	Length of the connection cable from the computer to the unit: 5 m Length of the connection cable between the units: 2,5 m
Operational distance in closed rooms	Up to 30 m	See above
Range	Up to 300 m	See above
Number of sync sockets	1 (instead of the second sync socket there is the radio antenna)	1 (the second sync socket is configured as connection for the computer cable)

Technical data (continuation)

Standards	UL 122, EC-standards 73/23, 89/336 und 99/5
	ERM EN 300 220-1,-3
	EMC EN 301 489-1,-3 EN 60950 EN 50371 FCC Part 15 This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) This device must accept any interference received, including interference that may cause undesired operation. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Subject to change in the interest of product enhancement.

CE

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