



POWER STATION

FOR V-LOCK LITHIUM ION BATTERIES ONLY

Model

PWS2

OPERATING INSTRUCTIONS

Revision 1.1

Please read these instructions concerning your safety

BLUESHAPE POWER STATIONS have been designed to provide a superior performance by efficiently managing a high power output during their operation without overheating or becoming unstable.

With the high output power capability of the PWS2, it is to be expected and is also quite normal for the internal electronics to generate a certain amount of heat and for the internal temperature to rise to a controlled extent. It is however of utmost importance to keep the ventilation openings of the enclosure unobstructed at all times during operation.

Moreover, please follow the safety instructions below.

- Protect the equipment from humid environments. Avoid any contact with water or other fluids. Do not use if any liquid has been accidentally spilled inside the equipment .Contact qualified service personnel for inspection or repair
- Clean only by using a dry cloth
- Remove on-board batteries when not in use
- Read the supplied instructions thoroughly and keep handy
- Avoid setting up near heat sources such as fire places, radiators, stoves or other heat generating equipment
- If the equipment develops a fault, have it repaired by qualified service personnel only
- NEVER block the ventilation openings or obstruct cooling fan air flow
- Use only as instructed by the manufacturer
- Do not remove cover or dismantle the apparatus. No user-serviceable parts inside



IT IS STRONGLY RECOMMENDED TO USE BLUESHAPE V-LOCK BATTERIES TO OPERATE THIS UNIT

Although this unit can also run on 3rd party batteries, it is not advisable to use any of these since:

1. Only BLUESHAPE batteries are able to communicate and dialogue with the unit. The unit was designed for the BLUESHAPE battery protocol
2. BLUESHAPE batteries are renowned for their high discharge capabilities and can guarantee:
 - Up to 9A for the standard BV series
 - Up to 12A for the HD series

Package contents

- PWS2 two position Power Station
- Operating manual

CAUTION

The unit **IS NOT** waterproof and not intended for usage in humid or wet environments

PWS2 graphic description – Front/left side



1. LED display for both channels
2. 14V/ 140W max output (4 pin female XLR)
3. 28V/ 280W max output (3 pin XLR)
4. Illuminated power On/Off switch. The unit needs to be switched on to start operating and can be switched off even if the batteries are left mounted in the V-locks
5. V-Lock Battery position #1 (left)

PWS2 graphic description – Rear/right side



1. Ventilation outlet (slow running, low noise fan)
2. Data connector
3. V-Lock Battery position #2 (right)

Note:

- The ventilation inlets are on the topside of the unit underneath the handle and also in the bottom.
- A carrying handle has been provided
- The 2 channels are identical

Introduction

The BLUESHAPE Power Station concept is a convenient system to integrate the power of multiple V-lock batteries into a unique source that can be tapped anywhere, anytime as a simultaneous dual DC voltage output.

Depending on which batteries are installed, the twin PWS2 system can supply power of up to 280W out with 2 x BV HD battery models.

The internal electronics are highly efficient operating at not less than 91% even when delivering full loads. Such efficiency permits the PWS2 to remain cool even after hours of continuous operation. This feature ensures a safe and prolonged system reliability and lifetime.

The batteries on channels 1-2 are hot-swappable and enable the unit to provide uninterrupted power even when a battery becomes empty. The user will just need to monitor the capacity decrease of the batteries through the LED display for the respective channel and replace as necessary without needing to switch of the unit.

Power is available SIMULTANEOUSLY from the XLR outlets:

- 1 x 3 pin female XLR for 28V/ 280W max output (10A)
- 1 x 4 pin XLR for 14V/140W max output (10A)

It is highly recommended the use the HD models of the BLUESHAPE battery range since these are able to deliver up to 12A discharge.

The display on the PWS2 will only show each battery's contribution in terms of current draw to the total load being powered. An indication of the remaining capacity of the batteries in use can only be obtained by activating the LED gas gauges on the batteries themselves.

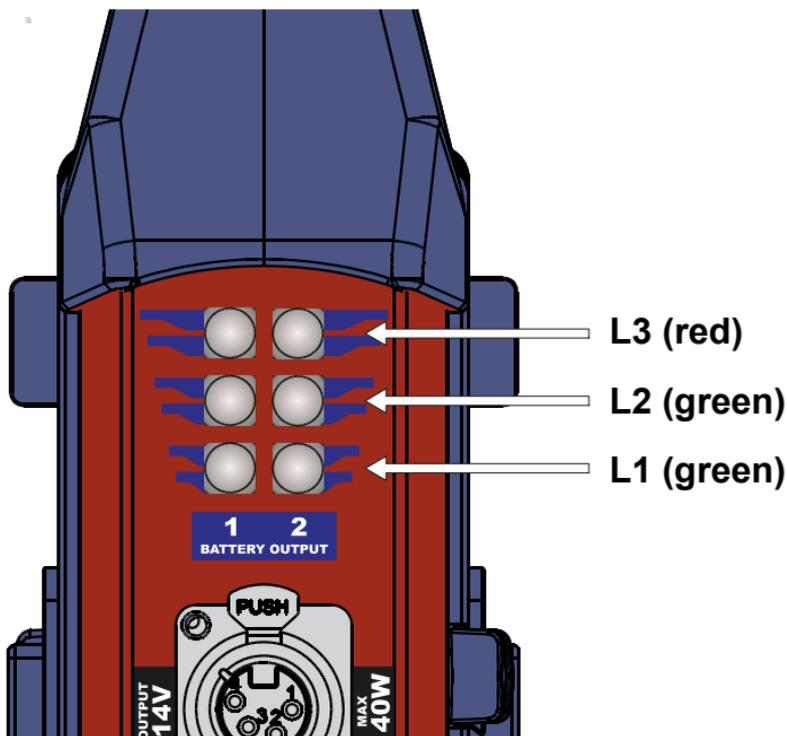
Properties of the PWS2

- Powerful 28V, 10A and 14V, 10A continuous output capability
- Elegant but rugged and light design. Ideal for indoor and outdoor use (but not in humid or wet conditions).
- Sophisticated internal electronics with highly efficient DC-DC converters and the acclaimed BLUESHAPE 'QUICKCHANGER' technology feature on all 2 channels for hot swapping of batteries.
- Can operate with as little as one battery on board (though not recommended since the unit will not be able to reach its full performance capabilities.
- Accurate data display obtained by the direct dialogue between unit and the batteries (BLUESHAPE BV only)

- Data communication outlet (useful for firmware upgrade/ testing and calibration purposes at factory or even for future user software applications)

Interpretation of the Display

At least one battery on any channel must be present for the PWS2 to light up.



The PWS2 has 2 simple LED gauge each consisting of two green LEDs (L1, L2) and 1 red LED (L3).

The amount of current a channel is conducting is shown as a percentage in proportion to the maximum permissible current for that channel. The maximum current draw from each battery is 10A, resulting in a typical maximum output current / channel of 5A.

The LED gauge shows the display of the current draw of each battery according to the table below:

Current Output (mA)	LED 1 (green)	LED 2 (green)	LED 3 (red)
0 - 1500	Blink	-	-
1500 - 3000	Full	-	-
3000 - 4500	Full	Blink	-
4500 - 6000	Full	Full	-
6000 - 8000	Full	Full	Blink
8000 - 10000	Full	Full	Full

Note:

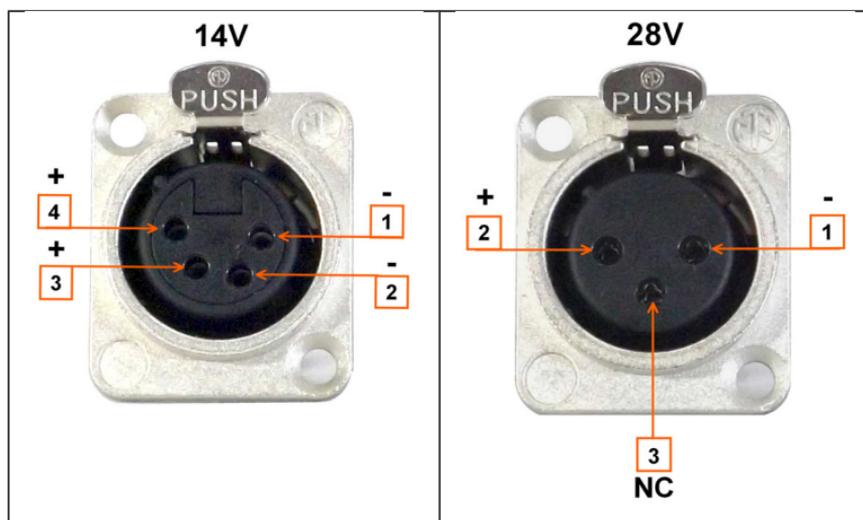
If the batteries in use are able to communicate with the PWS2, the real current value is read directly from the battery.

If the batteries in use are not able to communicate with the PWS2, an indication corresponding to the analogue value of the current is displayed.

Usage with BLUESHAPE BV batteries

PWS2 Recommendations							
BATTERY MODEL	Capacity (Wh)	Max. Discharge (A)	Recommended 1 = least 5 = most				
			1	2	3	4	5
BV065	65Wh	7A	<input checked="" type="checkbox"/>				
BV090	90Wh	7A		<input checked="" type="checkbox"/>			
BV100HD	94Wh	12A				<input checked="" type="checkbox"/>	
BV100HD (SPLASH)	94Wh	12A				<input checked="" type="checkbox"/>	
BV150	150Wh	9A			<input checked="" type="checkbox"/>		
BV180	180Wh	9A			<input checked="" type="checkbox"/>		
BV190HD	190Wh	12A					<input checked="" type="checkbox"/>
BV190HD (SPLASH)	190Wh	12A					<input checked="" type="checkbox"/>
BV225	225Wh	9A				<input checked="" type="checkbox"/>	
BV270HD	270Wh	12A					<input checked="" type="checkbox"/>
BV270HD (SPLASH)	270Wh	12A					<input checked="" type="checkbox"/>

XLR Polarity



Accessories

A number of cable accessories are available for connecting the PWS2 with the most popular cameras on the market.

Examples:

PWC33: XLR 3 pole to XLR 3 pole

PWC34: XLR 3 pole to XLR 4 pole

PWC44: XLR 4 pole to XLR 4 pole

PWCAL: XLR 3 pole to Fischer 2 pole for ARRI® ALEXA

Please visit the BLUESHAPE website for more details:

www.blueshape.net



PLEASE NOTE THAT THE MAXIMUM OUTPUT POSSIBILITY IS SHARED BETWEEN THE TWIN XLRs FOR EACH OUTPUT VOLTAGE

- The maximum power output for the 28V supply is 280W total
- The maximum power output for the 14V supply is 140W total

Technical specifications:

Parameter	Value
Output Voltage #1	28V (+/- 5mV on no load, +/- 1.2% on full load)
Outlet	1 x 3pin female XLR
Maximum output #1	280W
Output Voltage #2	14V (+/- 4mV on no load, +/- 2.4% on full load)
Outlet	1 x 4pin female XLR
Maximum output #2	140W
Over current protection of outputs	Available on 14V and 28V outlets
Short circuit protection of outputs	Available on 14V and 28V outlets
Over temperature protection	Available
Display	2 x 3-LED column displays (L1, L2 green, L3 red)
Number of battery positions (channels)	2 (1 to 2)
Position type	Hot-swappable on both channels
Conversion efficiency of DC-DC converters	>= 90% in all cases. Typically > 93%
Operating temperature range	0°C - 60°C (32°F - 140°F)
Storage temperature range	-20°C - 65°C (-4°F - 149°F)
Dimensions (metric)	250 x 145 x 80 mm
Dimensions (Imperial)	9.84 x 5.51 x 3.15 inches
Weight (metric)	0.70 Kg
Weight (Imperial)	1.55 lbs

CE certification is pending.

Warranty

BLUESHAPE Power Stations are warranted to be free from defects in materials, workmanship and functionality for a period of 18 months commencing from the date of purchase.

This warranty shall not apply to any products or parts of, that have been subjected to misuse, negligence, accidental or abnormal conditions of operation.

The buyer should always contact the place of purchase for any return of defective product. It is important that the buyer provides us with as much information as possible about the failure being claimed.

In the event of product failure for which warranty applies, we will repair or replace the product free of charge. In these cases, all expenses including transport charges will be borne by us.

In the case where the failure has been caused by one of the causes explained above, repairs should be billed at a nominal cost. Prior to the carrying out of any repairs, we will inform the customer of the estimated costs of these repairs.

These warranty conditions are the only ones applicable to our products and overrule any other expressed or implied warranties. We shall not be held liable for any damages resulting from warranty statements other than those contained in this declaration. In all warranty claims, the buyer must reproduce the original purchase invoice.



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