

**MOTOCRANE**

**RE.VOLT**

**AC-3/DC-3**



## **WARNING**

To minimize risk of serious injury, death or damage, before using MotoCrane Revolt, AC-3, and DC-3, all operators must read this Operation Manual and all on-product labels.




All practices and procedures stated herein are required for the proper and safe operation of Revolt, AC-3, and DC-3.

If there are any questions, please contact MotoCrane Support at [support@motocrane.com](mailto:support@motocrane.com).

Keep this Operation Manual near your Revolt, AC-3, and DC-3 for future reference.

## Safety Signal Words

This manual and the safety labels attached to this equipment utilize signal words that signify safety hazards with different levels of severity. The words are preceded by a triangle signifying that these are safety related. Below are the words used and the definitions for these words:

-  **WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury or damage
-  **CAUTION** indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or damage
-  **NOTICE** is used to address practices not related to physical injury

The terms IMPORTANT and NOTE are also used to describe ideas for better and more efficient use of Revolt, AC-3, and DC-3.

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## Before first use

Do the following before using Revolt, AC-3, and DC-3 for the first time.

1. Read this Operation Manual completely
2. Read the Warranty in the Terms of Sale
3. Watch the Video Tutorials at <https://motocrane.com/knowledge-base>
4. Email MotoCrane with any questions about Intended Use

# IMPORTANT PRODUCT AND SAFETY INSTRUCTIONS

## Safety

MotoCrane Revolt, AC-3, and DC-3 are not toys and can cause serious injury, death or damage if not used properly. You must exercise caution during use of the Revolt, AC-3, and DC-3 to ensure a safe filming environment for everyone. This Operation Manual describes safe operation and should be read in conjunction with the online training videos or additional in-person training.

## IMPORTANT: Restricted Use Statement

Revolt is designed for use with the DJI Ronin 2 gimbal. Revolt passes *unregulated* voltage from its input to the connected device- Revolt should not be used with non-DJI, third-party products which have adopted the TB50 as power source.

The AC-3, DC-3, and BBR are designed for use with Revolt and any other products requiring 24V nominal power (specifically, 26VDC) via 3-pin XLR connections with ARRI polarity (Pin #1 (-) and Pin #2 (+). Both the AC-3 and DC-3 can provide peak output currents of 20 amps.

Do not modify or adjust Revolt, AC-3, DC-3 or BBR. Revolt, AC-3, DC-3 and BBR have been calibrated before they are shipped to you. No modification or adjustment to Revolt, AC-3, DC-3 or BBR is allowed without the express written approval of MotoCrane, LLC.

## Disclaimer and Limitations of Liability

You agree that you are responsible for your own conduct and any content created while using Revolt, AC-3, DC-3, BBR and for any consequence thereof. You agree to use this product only for purposes that are proper and in accordance with local laws, regulations or other legal requirements.


You also agree:

1. Any part of this disclaimer is subject to change without prior notice. Refer to [www.motocrane.com/legal](http://www.motocrane.com/legal) for the latest version.
2. MotoCrane, LLC reserves the right of final interpretation of this disclaimer.
3. MotoCrane, LLC has no control over the use, setup, assembly, modification or misuse of Revolt, AC-3, DC-3, and BBR and therefore no liability shall be assumed or accepted by MotoCrane, LLC for any resulting damage, death, or injury incurred directly or indirectly from the use of Revolt, AC-3, DC-3, or BBR. By the act of use, setup or assembly, the user accepts all resulting liability.

## Limited Warranty

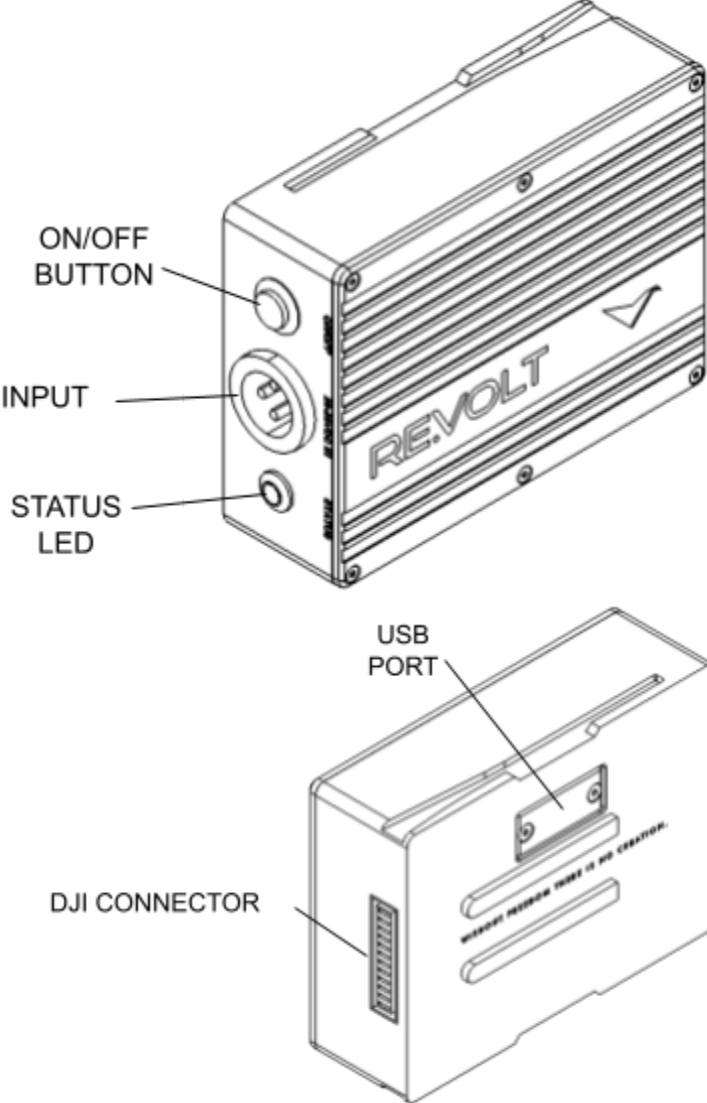
Revolt, AC-3, DC-3, and BBR have a limited manufacturer's warranty on parts and assembly. See the Terms and Conditions of Sale for your Revolt, AC-3, DC-3, and BBR for a complete description of this limited warranty. This Limited Warranty is incorporated by reference into this Operation Manual.

## Intellectual Property

MotoCrane™ and  **MOTOCRANE** are trademarks of MotoCrane, LLC. You may not use the trademarks of MotoCrane, LLC without express written permission. All rights reserved.

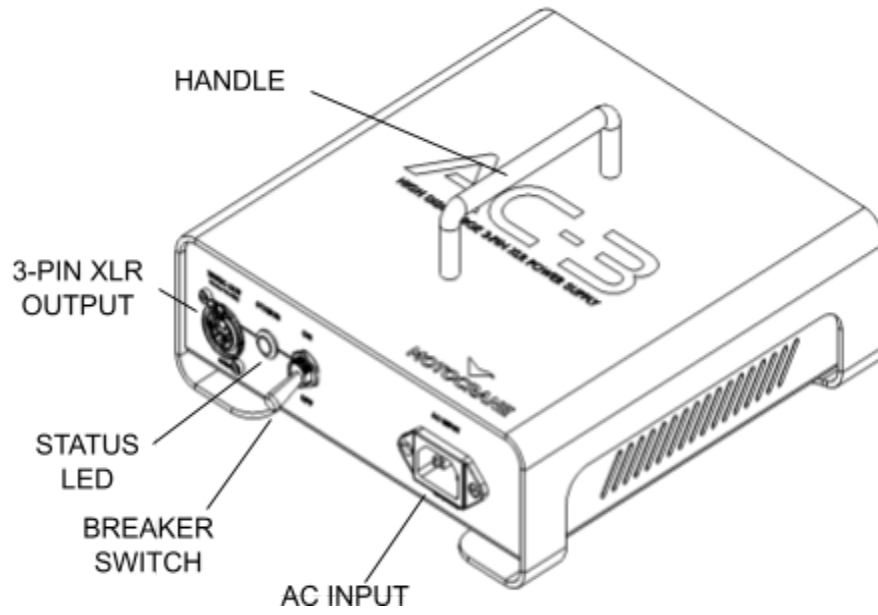
# System Overview

## Revolt

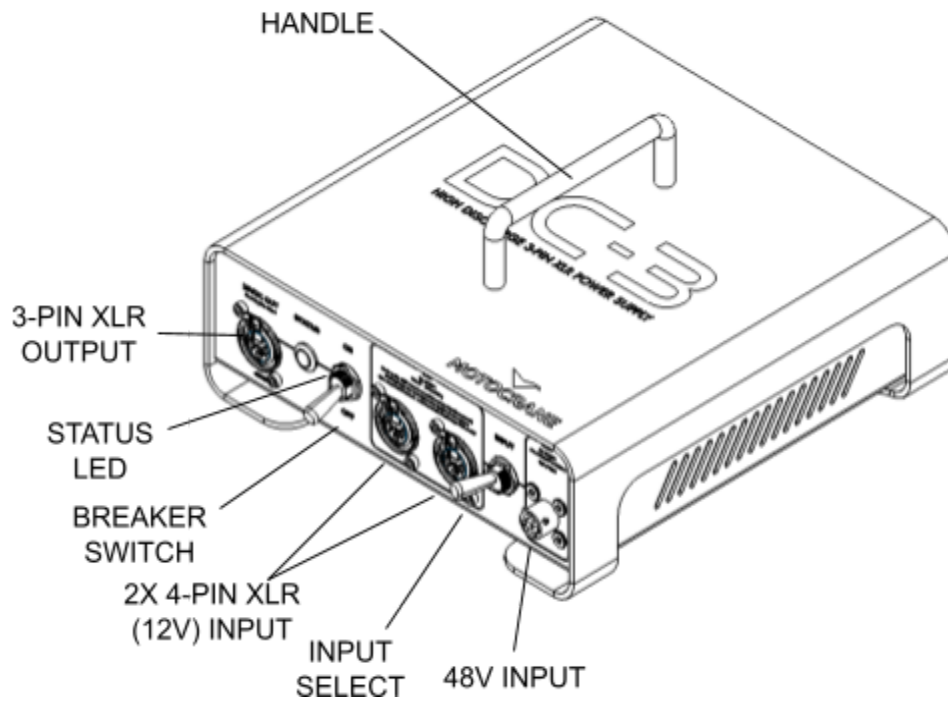




## AC-3



## DC-3



# Revolt Application Chart

While Revolt makes the Ronin 2 compatible with a wide variety of power sources and cabling options, it's important to make sure your desired power pathway is rated for your application! "Application" in this case means the LOAD, which is everything being powered by the Ronin 2 multiplied by the DUTY, which is how dynamic the load will be handled based on what's carrying the Ronin 2 (LOAD x DUTY = APPLICATION)

- 1) Identify your *LOAD* by tallying everything (in Watts) being powered *through* the Ronin 2's accessory power ports (don't include items being powered by a separate power source)
- 2) Identify the *DUTY* your gimbal will perform, which is determined by how static or dynamic your application is in terms of wind speed and movement.
- 3) **Ensure your connected power source and all cabling is rated for at least the requirement (in Watts) that corresponds with your *APPLICATION*!**

CAM +AKS +FIZ						<b>HEAVY</b>
CAM +AKS						
				<b>MEDIUM</b>		
CAM only						
		<b>LIGHT</b>				
N/A						
	Tripod	Dolly/Slider	Crane/Jib	Cable Cam	Drone	Camera Car
	Static		DUTY		Dynamic	

Power Requirement based on APPLICATION:



## Examples of applications

### LIGHT

The Ronin 2 is mounted on a motorized slider and does not provide power to any camera or accessories. Using the Application chart, this is noted as a "Light" application requiring at least **100W** of power.

A typical V-Mount/Gold Mount battery can discharge ~9 amps continuously. So, 12 volts x 9 amps = 108 Watts making it a suitable power source for "**LIGHT**" applications (requires MotoCrane DC-3). Due to the low power of this application, standard (low) capacity XLR Cables will likely not cause problems for this application.

**⚠ CAUTION** "Light" power sources may brown out and turn off if the Ronin 2 is bumped or stalled causing a peak current draw in excess of the rated discharge. Exercise caution so as to not exceed the total rated discharge current of lower rated power sources.

### MEDIUM

The Ronin 2 is mounted on a 20ft crane, and is providing power for an Alexa Mini and FI+Z. Using the application chart, this is noted as a "Medium" application requiring at least **300W** of power.

A typical block battery (such as the Cine VCLX) can discharge ~12 amps continuously. So, 28V x 12 amps = 336 Watts making it suitable for "**MEDIUM**" applications. Due to the higher power of this application, as well as the long distance between the power source and the Ronin 2, a High Capacity 3-pin XLR Cable from MotoCrane should be used to reduce voltage drop.

### HEAVY

The Ronin 2 is mounted on Black Arm, and is providing power to an Alexa 35, FI-Z and a rain spinner. Using the Application Chart, this is noted as a "Heavy" application requiring at least **400W** of power.

A higher capacity 6S LiPO battery, such as the Tattu 10Ah unit used to power the MoVI XL, can discharge ~300 amps continuously. So, 22.2 volts x 300 amps = 6,660 Watts making it more than suitable for "**HEAVY**" applications.

**⚠ WARNING** *Medium to Heavy applications , (or Light applications operating at long distances)* should always use [High Capacity 3-Pin XLR cables](#) from MotoCrane. Inadequate cabling can result in excessive voltage drop, heat, and power failure.

# Setting up Revolt, AC-3, and DC-3

## Revolt Setup & Use

1. Insert Revolt into either slot of the Ronin 2 Dual TB50 Battery Mount.
2. Using a compatible 3 pin XLR cable, connect Revolt to a compatible 24V power source (see *Application Chart*).
3. Revolt should now be in Standby (strobing white Status LED).
4. Press and hold the ON/OFF button on Revolt, or the Ronin 2, until the Ronin 2 turns ON.
5. If applicable, use the Status LED chart below to monitor voltage input level.
6. When finished, turn off Revolt by pressing and holding the ON/OFF button. If a TB50 is being used at the same time, the Ronin 2 will stay powered on (see [“Revolt and TB50”](#) below)

**NOTICE** Regulated power sources (such as a Block Battery, or MotoCrane AC-3/DC-3) provide a constant, fixed output voltage, so the Status LED will not change as its remaining battery life decreases. In this scenario, battery voltage must be monitored at the source, not by Revolt.

**The iOS/Android Ronin app will report a battery level of “101%” when using Revolt.**

## Using Revolt and a TB50 at the same time

In most scenarios, it is desirable to insert a TB50 into the remaining available slot on the Ronin 2's Dual TB50 Battery Mount so that it can act as a backup or safety for Revolt in the event of power loss. Due to how the Ronin 2 selects which source to draw from, this is an excellent option for **regulated** power sources such as the Block Battery, AC-3 or DC-3 as the TB50 will experience very little drain. However, using a TB50 at the same time as Revolt while connected to a larger capacity **unregulated** power source such as a MoVI XL battery will likely preferentially drain the TB50 first based on the capacity of the larger connected power source, depleting the TB50 first.

## Auto-On Mode

In some scenarios, it is desirable to “hot swap” the power sources you’ve connected to Revolt while you may not have easy access to the Ronin 2 for turning Revolt back on. “Auto-On” is a mode that automatically turns Revolt ON (and the Ronin 2) as soon as power is applied.

To **ENABLE** Auto-On:

1. Connect power to Revolt as described above so that it is in Standby Mode.
2. Triple Tap the ON/OFF button.
3. The Revolt Status LED will display a Blue-Blue-**Green** pattern to indicate that Auto-On has been successfully enabled.

To **DISABLE** Auto-On:

1. Connect power to Revolt, then Press and hold the ON/OFF button so that it is in Standby Mode.
2. Triple Tap the ON/OFF button.
3. The Revolt Status LED will display a Blue-Blue-**RED** pattern to indicate that Auto-On has been successfully disabled.

## AC-3 Setup & Use

1. With the Output power switch turned “OFF”, connect a suitable IEC C13 power cable to the AC-3 input, and then to a compatible 100-240V AC power source (*your region may require a non-standard cable.*)
2. Connect a compatible 3 pin XLR cable to Revolt (or the 3-pin XLR system you are powering) to the AC-3 output.
3. Turn the Output Power switch “ON” and confirm the green output LED is ON.
4. Revolt should now be in Standby (strobing white Status LED).
5. Press and hold the ON/OFF button on Revolt, or the Ronin 2, until the Ronin 2 turns ON.
6. When finished, turn off Revolt by pressing and holding the ON/OFF button.
7. Turn the AC-3 “OFF” , then disconnect both the 3-pin XLR and IEC C13 power cables.

**NOTICE** If you’re using the AC-3 with a power inverter (DC to AC), make sure the battery and inverter are rated to provide at least 500W of peak power.

**WARNING** *Medium to Heavy applications , (or Light applications operating at long distances)* should always use [High Capacity 3-Pin XLR cables](#) from MotoCrane. Inadequate cabling can result in excessive voltage drop, heat, and power failure.

## DC-3 Setup & Use








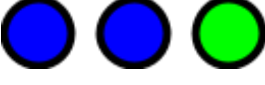

1. With the Output power switch turned “OFF”, connect a 12V or 48V power source to the correct input on the DC-3.
2. Confirm the “INPUT” Switch is pressed towards the Input you are using (12V or 48V)
3. Connect a compatible 3 pin XLR cable to Revolt (or the 3-pin XLR system you are powering) and then to the DC-3 output.
4. Turn the Output Power switch “ON” and confirm the green output LED is ON.
5. Revolt should now be in Standby (strobing white Status LED).
6. Press and hold the ON/OFF button on Revolt, or the Ronin 2, until the Ronin 2 turns ON.
7. When finished, turn off Revolt by pressing and holding the ON/OFF button.
8. Turn the DC-3 “OFF” then disconnect the 12V or 48V power source.

**CAUTION** The DC-3 *does not have over-voltage or reverse polarity protection* on its inputs. Refer to the labels on the DC-3 to verify that your power source is properly wired!

**WARNING** *Medium to Heavy applications , (or Light applications operating at long distances)* should always use [High Capacity 3-Pin XLR cables](#) from MotoCrane. Inadequate cabling can result in excessive voltage drop, heat, and power failure.

## Status LED Descriptions

The Status LED Indicator provides information about the status of Revolt, voltage monitoring of the connected power source, and also any faults that might be detected. See the below chart to familiarize yourself with these states.

Status LED Color	Description
	No power connected or reverse polarity!
	Standby, ready to Power ON
	Powered ON, 23V - 29.0V
	Powered ON, 22.0V - 23.0V
	Powered ON, 21.5V - 22.0V
	Powered ON, 12V - 21.5V
	Over voltage! (>29.0V) See troubleshooting
	<a href="#">Auto-ON Enabled</a>
	<a href="#">Auto-ON Disabled</a>

**NOTICE** A small number of Ronin 2's have been known to NOT turn on while Revolt is connected to power sources 27.5V and greater. As a result, MotoCrane has created the **BLOCK BATTERY REGULATOR (BBR)** module to reduce the output voltage from a 28V source to 26VDC. This lower voltage (26VDC) is known to work with all Ronin 2's tested.

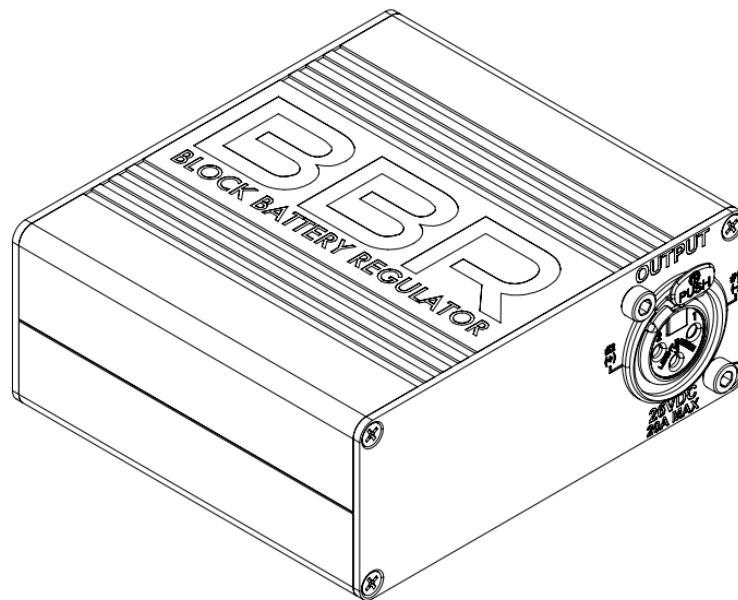
If you are experiencing issues with your Revolt, or have questions about how to determine the Status of your Revolt please contact [MotoCrane Technical Support](#) at [support@motocrane.com](mailto:support@motocrane.com).

## Block Battery Regulator (BBR) Setup & Use

1. With the Block Battery turned "OFF", connect its output to the input of the BBR.
2. Connect a compatible 3-pin XLR cable from the output of the BBR to the input of Revolt.
3. Turn the Output Power switch of the Block Battery "ON".
4. Revolt should now be in Standby (strobing white Status LED).
5. Press and hold the ON/OFF button on Revolt, or the Ronin 2, until the Ronin 2 turns ON.
6. When finished, turn off Revolt by pressing and holding the ON/OFF button.
7. Turn the Block Battery "OFF", then disconnect both the 3-pin XLR power cables.

**CAUTION** The BBR *does not have over-voltage or reverse polarity protection* on its input. Refer to the labels on the BBR to verify that your power source is compatible and properly wired.

**WARNING** *Medium to Heavy applications*, (or *Light applications operating at long distances*) should always use [High Capacity 3-Pin XLR cables](#) from MotoCrane. Inadequate cabling can result in excessive voltage drop, heat, and power failure.



Block Battery Regulator (**BBR**)

## Known Hazards

**⚠ WARNING** The following list represents a list of known hazards that exist when operating Revolt, AC-3, and DC-3. This is not exhaustive, but represents some common hazards to look for.

- AC-3 and DC-3 mounting. The AC-3 and DC-3 should not be subject to movement relative to the vehicle during operation. Make sure the AC-3 or DC-3 is secured and does not slide. Keep any moving objects away from the AC-3 and DC-3 switches.
- Reverse Polarity on DC-3 power inputs. Before connecting a 12V or 48V power source to the DC-3, confirm that the polarity is compatible with the pinout listed on the DC-3 pinouts.
- AC-3 and DC-3 being used to power equipment having “Panavision” 3-pin XLR polarity. If you’re using the AC-3 or DC-3 to power third-party products, confirm that the third-party product uses “Arri” polarity, which is Pin #1(-) and Pin #2(+).
- Covering the AC-3 fan may cause the AC-3 to heat up, shut off, and/or cause damage to the internal electrical components.
- Revolt should **not** be used to power the MoVI Pro (via Ignite Digi TB50 Adapters) when using power sources >26VDC, unless also paired with the BBR.
- Reverse polarity on BBR Input. Before connecting 28V power source, confirm that polarity is Arri Standard which is Pin #1(-) and Pin #2(+).
- BBR being used to power equipment with “Panavision” 3-pin XLR polarity. If you’re using the BBR to power third-party products, confirm that the third-party product uses “Arri” polarity, which is Pin #1(-) and Pin #2(+).

## Revolt to Ronin 2 Firmware Compatibility Chart

The following chart lists all known Ronin 2 firmware versions and their compatibility with Revolt. If your Ronin 2 version shows 0.0.0.0 or 1.3.0.60 please upgrade or downgrade to a compatible firmware version. Ronin 2 Firmware version 1.7.1.00 is recommended.

Ronin 2 Firmware	Revolt Compatible?
1.7.1.00	YES
1.5.0.80	YES
1.3.0.60	<b>NO</b>
1.2.0.50	YES
1.1.0.30	YES



## Troubleshooting

Symptom	Likely Cause	Resolution
No power from AC3 or DC3	Breaker switch tripped	Check that the load is not short circuited and is within ratings, then cycle the AC3/DC3 power switch.
Ronin 2 displays "Use DJI Intelligent Batteries"	Ronin 2 is running firmware that is not compatible with Revolt.	Upgrade or Downgrade Ronin 2 firmware to a compatible version
24V power is connected to Revolt and the LED is not lighting up	Power source 3-pin polarity is incorrect	Make sure Ground (-) is connected to 3-pin XLR Pin #1 and Positive (+) is connected to 3-pin XLR Pin #2
DC-3 will not turn on with power connected	Input Select Switch is set to the incorrect input	Flip the Input Select Switch towards the correct input
"Backup" TB50 battery dies and the Ronin 2 shuts off	The Revolt was in Standby mode (instead of being powered ON) so the Ronin was draining the TB50 instead of using Revolt.	Make sure the Revolt is turned ON during use (see <a href="#">Status LED Descriptions</a> )
Revolt status LED indicates low input voltage while connected to a full battery, or under load	Low quality (low capacity) 3-Pin XLR cable is being used to connect power to Revolt.	We recommend using a MotoCrane <a href="#">High Capacity 3-Pin XLR Power cable</a> .
Ronin 2 doesn't turn off when Revolt is turned off	A TB50 or other power source was connected to the Ronin 2 when Revolt was shut off	Use the Ronin 2 power button to turn off the Ronin 2 or disconnect the alternative power source
Ronin 2 does not turn ON when Revolt is connected to Block Battery.	Your Ronin 2 may require use of the Block Battery Regulator (BBR) to reduce input voltage.	Contact MotoCrane Technical Support or purchase <a href="#">Block Battery Regulator (BBR)</a> .

## Maintenance

None required - contact Customer Support if you believe the unit requires service or maintenance.

## Weather & Water

Revolt carries the same IP52 ingress protection rating as the Ronin 2, and is NOT "water resistant." Special attention must be paid to protect the Revolt from water.

AC-3, and DC-3 are NOT water resistant or IP-rated! The AC-3 and DC-3 should be kept out of direct sunlight to avoid unnecessary heat buildup within the unit. Keep the AC-3 and DC-3 out of direct exposure to any precipitation, or solid particulates like dirt/mud.

## Specifications

### Revolt

**Weight:** 0.9lbs/.41kg

**Size:** 118mm x 87mm x 38mm

**Input:** 20-28VDC, 20A peak

**Output:** 12-pin blade connector

### AC-3

**Weight:** 3.5lbs/1.6kg

**Dimensions:** 215mm x 210mm x 72mm (104mm with handle)

**Input:** 100-240VAC (90VAC MINIMUM to 260VAC MAXIMUM)

**Output:** 26VDC, 21A peak discharge

### DC-3

**Weight:** 4.2lbs/1.9kg

**Dimensions:** 215mm x 210mm x 72mm (104mm with handle)

**Inputs:**

2x 12V nom.: 10VDC - 20VDC, via 4-pin XLR, Pin #1(-) Pin #4 (+)

1x 48V nom.: 30VDC - 60VDC, via Amphenol PT02A-8-4S

**Output:**

26VDC, 20A peak discharge.

### BBR

**Weight:** 0.7lbs/0.32kg

**Dimensions:** 80mm x 90mm x 36mm

**Inputs:**

28VDC (18-40VDC), Male 3-pin XLR

**Output:**

26VDC, 20A peak discharge, Female 3-pin XLR

**Certifications:** CE, RoHS

# Revision History

Revision	Date	Description
1.0	JULY, 2023	Initial Release
1.1	DECEMBER, 2023	Added information for BBR

MotoCrane Support  
[support@motocrane.com](mailto:support@motocrane.com)

**This content is subject to change.**

Download the latest version of this Operation Manual from:  
[www.motocrane.com/knowledge-base](http://www.motocrane.com/knowledge-base)

If you have any questions about this document, please contact MotoCrane, LLC by sending a message to [contact@motocrane.com](mailto:contact@motocrane.com).

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