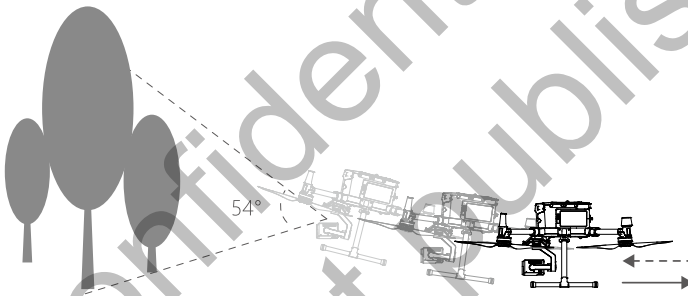
Follow the steps below to use the camera sensing System:

1. Ensure the aircraft is in P-mode and place the aircraft on a flat surface.
2. Turn on the aircraft. The aircraft will hover in place after takeoff. The aircraft status indicators will flash green twice, which indicates the camera sensing System is working.

⚠ If the camera sensing System shuts down or is blocked by other objects, the aircraft will not be able to hover at a low altitude indoors and the Landing Protection Function that controls the landing speed will be disabled. Note: the aircraft may be damaged by landing too fast.

Assisted Braking from Obstacle Sensing

Powered by the camera sensing System, the aircraft is able to actively brake when obstacles are detected in front. Obstacle Sensing works best when lighting is adequate and the obstacle is clearly textured. The aircraft must fly at no more than 38 mph (62 kph) with a maximum pitch angel of 25° to allow for sufficient braking distance.



Using Infrared Sensing System

The Infrared Sensing System can only be used to avoid large, diffuse, and reflective obstacles (reflectivity >10%). Please be mindful of blind spots (Grey) of the Infrared Sensing System. The downward Infrared Sensing System is used for positioning and assisting height setting during takeoff and landing, while the Infrared Sensing System on the other five sides are for obstacle sensing.

camera sensing System and Infrared Sensing System Warning

The measurement accuracy of the camera sensing System is easily affected by the light intensity and the surface texture of the object. The Infrared Sensing System can only be used to avoid large, diffuse, and reflective obstacles (reflectivity >10%).

The camera sensing System may NOT function properly when in any of the following situations:

a. Flying over monochrome surfaces (e.g., pure black, pure white, pure red, pure green) or without clear texture.
b. Flying over highly reflective surfaces.
c. Flying over water or transparent surfaces.

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d. Flying over moving surfaces or objects (e.g. above moving people, waving reeds, shrubs and grass).
e. Flying in an area where the lighting changes frequently or drastically, or in an area where there is excessive exposure to direct, strong lighting.
f. Flying over extremely dark (< 15 lux) or bright (> 10,000 lux) surfaces.
g. Flying at high speeds (over 14 m/s at 2 meters or over 5 m/s at 1 meter).
h. Tiny obstacles.
i. The lens is dirty (e.g., due to raindrops, fingerprints, etc.).
j. Scenes with low visibility (e.g., heavy fog).

The Infrared Sensing System may NOT provide an accurate distance when in any of the following situations:
a. Flying over surfaces that can absorb sound waves (e.g., pure black matt objects).
b. There is a large area of strong reflectors beyond 15 m (for example, multiple traffic signs are placed side by side).
c. Tiny obstacles.
d. Mirror or transparent objects (such as mirrors, water, and glass).

⚠ • Keep sensors clean at all times. Dirt or other debris may adversely affect their effectiveness.
•The camera sensing System may not function properly when the aircraft is flying over water. The camera sensing System may not be able to recognize pattern on the ground in low light conditions (less than 100 lux).

Return-to-Home (RTH)

The Return-to-Home (RTH) function brings the aircraft back to the last recorded Home Point when there is a strong GNSS signal. There are three types of RTH: Smart RTH, Low Battery RTH, and Failsafe RTH. This section describes these three RTH types in detail.

	GNSS	Description
Home Point		If a strong GNSS signal was acquired before takeoff, the Home Point is the location from which the aircraft launched. The GNSS signal strength is indicated by the GNSS icon . Less than 4 bars is considered a weak GNSS signal. The aircraft status indicator will blink green rapidly when the home point is recorded.

⚠ The aircraft can sense and avoid obstacles when the Forward camera sensing System is enabled and lighting conditions are sufficient. To ensure the aircraft returns home while facing forward, it cannot rotate or fly left and right during RTH.

Smart RTH

Use the RTH button on the remote controller and follow the on-screen instructions when GNSS is available to initiate Smart RTH. The aircraft will then automatically return to the last recorded Home Point. Use the remote controller to control the aircraft's speed (pitch stick) or altitude (throttle stick) to avoid a collision during the Smart RTH process. Press and hold the Smart RTH button once to start the process, and press the Smart RTH button again to terminate the procedure and regain full control of the aircraft.

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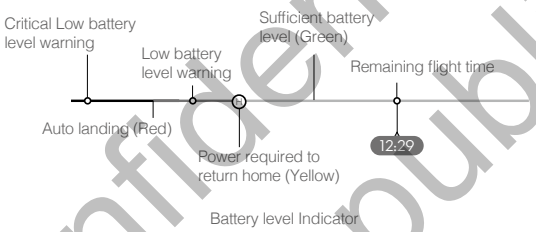
Low Battery RTH

The low battery level failsafe is triggered when the Flight Battery is depleted to a point that may affect the safe return of the aircraft. Users are advised to return home or land the aircraft immediately when prompted. The app will display a notice when a low battery warning is triggered. The aircraft will automatically return to the Home Point if no action is taken after a ten-second countdown. The user can cancel the RTH procedure by pressing the RTH button on the remote controller. The thresholds for these warnings are automatically determined based on the aircraft's current altitude and distance from the Home Point. If the RTH procedure is cancelled following a low battery level warning, the Flight Battery may not have enough charge for the aircraft to land safely, which may lead to the aircraft crashing or being lost. Low Battery RTH can be turned off in app.

The aircraft will land automatically if the current battery level can only support the aircraft long enough to descend from its current altitude. The user cannot cancel the auto landing but can use the remote controller to alter the aircraft's orientation during the landing process.

The Battery Level Indicator is displayed in the app, and is described below:



Battery Level Warning	Remark	Aircraft Status Indicator	App	Flight Instructions
Low battery level warning	Battery power is low. Land the aircraft.	Aircraft status indicator blinks RED slowly.	Tap "Go-home" to have the aircraft return to the Home Point and land automatically, or "Cancel" to resume normal flight. If no action is taken, the aircraft will automatically go home after 10 seconds. Remote controller will sound an alarm.	If RTH is selected, the aircraft will fly back to the Home Point automatically and Landing Protection* will be triggered. Users can regain control during RTH. NOTE: The low battery level warning will not appear again after users regain control.

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Critical Low battery level warning	The aircraft must land immediately.	Aircraft status indicator blinks RED quickly.	The app display will flash red and the aircraft will start to descend. The remote controller will sound an alarm.	Allow the aircraft to descend automatically and trigger Landing Protection*.
Estimated remaining flight time	Estimated remaining time is based on current battery level.	N/A	N/A	N/A

- When the Critical Low battery level warning is triggered and the aircraft begins to land automatically, push the left stick upward to make the aircraft hover at its current altitude, giving you an opportunity to navigate to a more appropriate landing location.
- The colored zones and markers on the battery level indicator bar reflect the estimated remaining flight time. They are automatically adjusted according to the aircraft's current location and status.

Failsafe RTH

Failsafe RTH (enabled in the app) is automatically activated if the remote controller and the aircraft are disconnected. Failsafe RTH includes two stages of return to home: historical flight path and Smart RTH. When Failsafe RTH is enabled, the aircraft will return to home based on its historical flight path. Within a maximum distance of 50 meters, the aircraft will try to reconnect to the remote controller. If the aircraft cannot reconnect to the remote controller within 50 meters or the aircraft detects obstacles in front of it (enroute to its return to home flight path), the aircraft will exit the stage of return to home (based on its historical path), and enter the Smart RTH stage. When the remote controller is connected to the aircraft during return to home, users can use the remote controller to control the aircraft's flight speed and altitude, and cancel Return to Home by pressing the RTH button on the remote controller.

RTH Procedure

1. Home Point is recorded automatically.
2. RTH procedure is triggered, i.e., Smart RTH, Low-Battery RTH, and Failsafe RTH.
3. Home Point is confirmed and the aircraft adjusts its orientation.
4. a. camera sensing Systems enabled: When less than 50 m (164 ft) from the Home Point, the aircraft will fly to the Home Point at the current altitude. If more than 50 m (164 ft) from the Home Point and
   below the pre-set RTH altitude, the aircraft will ascend to the pre-set RTH altitude before flying to the Home Point. The aircraft will fly directly to the Home Point if it is above the pre-set RTH altitude.

   b. camera sensing Systems disabled: If below the pre-set RTH altitude, the aircraft will ascend to the pre-
   set RTH altitude before flying to the Home Point. The aircraft will fly directly to the Home Point if it is above the pre-set RTH altitude.
5. The aircraft will return to the Home Point, and Landing Protection* will be triggered to allow the aircraft to land or hover in place. Refer to Landing Protection Function for details.

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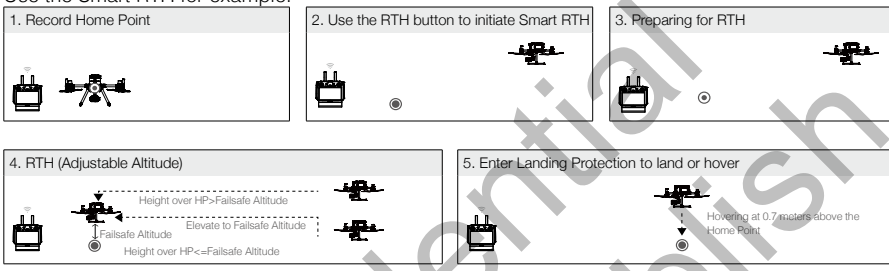
When using an aircraft firmware version of v01.00.0214 or earlier, Step 4 of the RTH procedure is as below:

a. The aircraft will ascend to the pre-set RTH altitude and fly to the Home Point when the aircraft is more than 20 m (65 ft) from the Home Point or higher than 30 m (98 ft). Make sure RTH Obstacle Detection is enabled in the app.

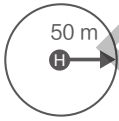
b. When the above conditions are not met, the aircraft will land directly after RTH is triggered.

* Make sure that the Downward camera sensing Positioning is enabled in the app.

Use the Smart RTH for example:



Failsafe Safety Notices

	The aircraft cannot avoid obstacles during Failsafe RTH when the Forward camera sensing System is disabled. Therefore, it is important to set a suitable Failsafe altitude before each flight. Launch the app, enter Camera and tap to set the Failsafe Altitude.
	If RTH is triggered when the aircraft is below 20 m (65 ft), the aircraft will automatically ascend to 20 m (65 ft) from the current altitude. The vertical speed can be adjusted using the throttle stick during ascent with a maximum descent speed of 1 m/s and ascent speed of 3 m/s.
	If RTH is triggered when the aircraft is less than 50 m (164 ft) from the Home Point, the aircraft will fly to the Home Point at the current altitude. The aircraft will ascend to the pre-set RTH altitude if the Camera Sensing Systems are disabled. When using an aircraft firmware version of v01.00.0214 or earlier: If RTH is triggered when the aircraft is within 20 m (65 ft) of the Home Point and below 30 m, the aircraft automatically descends and lands. If above 20 m (65 ft), the aircraft immediately returns to the Home Point.
	The aircraft cannot return to the Home Point when GPS signal is weak ([ ] displaying less than three bars) or is unavailable.

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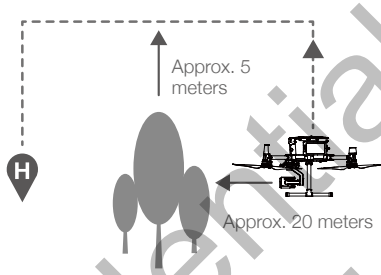
Obstacle Avoidance During RTH

The aircraft can sense and actively attempt to avoid obstacles during RTH, provided that lighting conditions are adequate for the Forward Camera Sensing System. Upon detecting an obstacle, the aircraft will act as follows:

1. The aircraft decelerates when an obstacle is sensed at approx. 65 feet (20 meters) ahead.
2. The aircraft stops and hovers then starts ascending vertically to avoid the obstacle. Eventually, the aircraft will stop climbing when it is at least approx. 16 feet (5 meters) above the detected obstacle.
3. RTH procedure resumes. The aircraft will continue flying to the Home Point at the current altitude.



⚠
- Obstacle Sensing is disabled during RTH descent. Proceed with care.
- To ensure the aircraft returns home forwards, it cannot rotate during RTH while the Camera Sensing System is enabled.
- The aircraft cannot avoid obstacles beside or behind it.

Landing Protection Function

Landing Protection will activate during auto-landing.

1. Landing Protection determines whether the ground is suitable for landing. If so, the aircraft will land smoothly.
2. If Landing Protection determines that the ground is not suitable for landing, the aircraft will hover and wait for pilot confirmation. The aircraft will hover if it detects the ground is not appropriate for landing even with a critically low battery warning. Only when the battery level decreases to 0% will the aircraft land. Users retain control of aircraft flight orientation.
3. If Landing Protection is inactive, the app will display a landing prompt when the aircraft descends below 0.7 meters. Tap to confirm or pull down the control stick for 2 seconds to land when the environment is appropriate for landing.

⚠ Landing Protection will not be active in the following circumstances:
- When the user is controlling the pitch/roll/throttle sticks (Landing Protection will re-activate when the control sticks are not in use)
- When the positioning system is not fully functional (e.g. drift position error)
- When the downward Camera Sensing system needs re-calibration
- When light conditions are not sufficient for the downward Camera Sensing system
- If an obstacle is within one meter of the aircraft, the aircraft will descend to 0.7 m above the ground and hover. The aircraft will land after user confirmation.

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Center of Gravity Calibration

The center of gravity will shift when the aircraft's payloads change. To ensure stable flight, it is required to recalibrate the aircraft's center of gravity when a new payload is installed.

- Calibrate in a windless environment. Make sure that the aircraft is hovering and there is a strong GNSS signal during calibration.
- Maintain visual line of sight of the aircraft and pay attention to flight safety.

Calibration instructions: Go to Flight Controller Settings in the app, and tap Calibrate in the Center of Gravity Auto Calibration section. The Aircraft Status Indicators will glow solid purple during calibration. There will be a prompt in the app after calibration is completed.

Flight Recorder

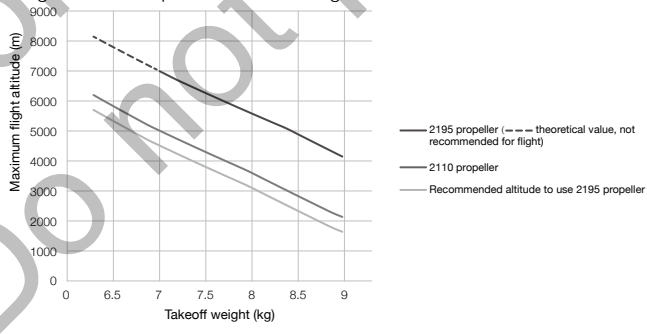
Flight data is automatically recorded to the internal storage of the aircraft. You can connect the aircraft to a computer via the USB port and export this data via Skycatch Update Manager.

Propellers

Propellers Usage Guide

Explore2 uses the 2110 propeller. The 2195 propeller is purpose-built to improve the aircraft's maximum flight altitude while maintaining minimal flight noise.

Flight altitude limit is the maximum height that the aircraft can fly normally where the wind speed should not exceed 12 m/s. Note that the aircraft's braking and acceleration capabilities are reduced near to the flight altitude limit. Please read the diagram below to learn more about using the appropriate propellers by referring to the aircraft's weight and the expected maximum flight altitude.



- Using the 2195 propellers for extended periods will reduce the motor life.
- Only use approved propellers. DO NOT mix propeller types.
- Ensure to check that the propellers and motors are installed firmly and correctly before each flight.
- Ensure that all propellers are in good condition before each flight. DO NOT use aged, chipped, or broken propellers.
- To avoid injury, stand clear of and DO NOT touch propellers or motors when they are spinning.

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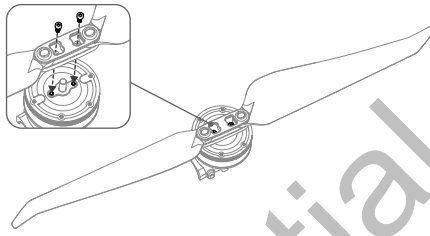
Replacing the Propellers

In order to replace the propellers, use the H2.5 hex key with ball-end.

It is recommended to replace the propellers only in an emergency situation during operations. After the emergency flight is over, please contact technical support or an authorized agent for overhaul as soon as possible.



⚠ Propeller blades are sharp; please handle with care.

Charging Station

The Charging Station features a total 12 battery ports and can charge up to eight Flight Batteries, and four Secure Controller Batteries. It also comes built in with integrated wheels that make the Charging Station easy to maneuver from one place to another.

Warnings

1. Keep any liquids (oil, water etc.) away from the inside of the Charging Station.
2. DO NOT close the Charging Station during charging or discharging, and ensure it is well ventilated and able to dissipate heat.
3. The Charging Station is only compatible with the Flight Battery, and Secure Controller Battery. DO NOT use the Charging Station with any other battery models.
4. Place the Charging Station on a flat and stable surface when in use. Ensure the device is properly insulated to prevent fire hazards.
5. DO NOT touch the metal terminals on the Charging Station. If there is any noticeable debris buildup, wipe the metal terminals with a clean, dry cloth.
6. Take care to avoid injuring fingers when opening or closing the Charging Station, or using the retractable trolley handle.
7. Place the batteries in the specified directions.
8. Air pressure in the Charging Station may change during air transportation or after extreme barometric pressure changes. The pressure valve knob on the side of the Charging Station will balance the air pressure automatically.
9. Please use the dust blower to clear the sand and dust in the Charging Station.

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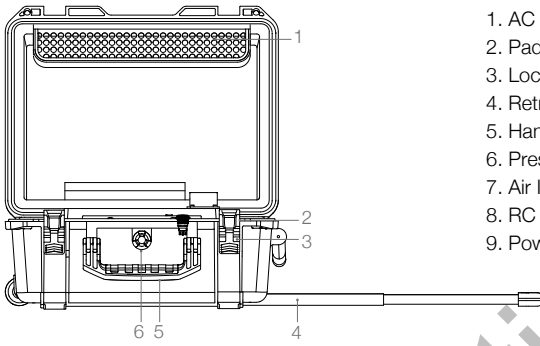
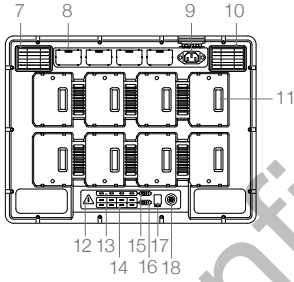
Overview



1. AC Power Cable Slot
2. Padlock Holes
3. Locks
4. Retractable Trolley Handle
5. Handles
6. Pressure Valve
7. Air Intake
8. RC Battery Port
9. Power Port



10. Air Vent
11. Battery Port
12. Warning LED
13. RC Battery Status LEDs
14. Flight Battery Status LEDs
15. RC Charging Status LEDs
16. Flight Charging Status LEDs
17. Firmware Update Port (USB-C)
18. Power Button / Power Indicator

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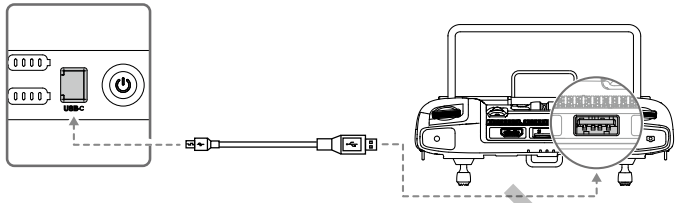
Activation

Use app and follow the instructions below to activate the Charging Station.

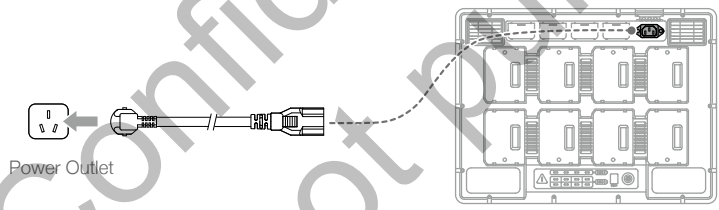


1. Connect the Charging Station to a power outlet and press the Power Button to turn on the Charging Station. Connect the Charging Station to the remote controller using a USB-C cable.
2. Turn on the remote controller and run the app.
3. Follow the app instructions to activate the Charging Station.

Using the Charging

Station Charging

1. Connect the Charging Station to a power outlet (100-120 Vac, 50-60 Hz / 220-240 Vac, 50-60 Hz) via the AC power cable.



2. Press the Power Button once to turn on the Charging Station.
3. Insert the batteries into the Battery Ports to start charging.
   a. With a 100-120 V input, it takes about 70 minutes to fully charge the Flight battery, and 40 minutes to charge from 20% to 90% battery level.
   b. With a 220-240 V input, it takes about 60 minutes to fully charge the Flight battery, and 30 minutes to charge from 20% to 90% battery level.

⚠
- For Flight Batteries, the Charging Station will charge the two batteries with the most amount of remaining battery power first. For example, if there are four Flight batteries plugged into the Charging Station (the first two batteries have 10% remaining battery power and the second two batteries have 30% remaining battery power), the Charging Station will automatically charge the batteries with the highest remaining battery power first.
- For RC Batteries, the Charging Station will charge the battery with the highest remaining battery power first.
- When the temperature of the battery is too low, it will warm up automatically before charging.

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- Refer to the “Charging Station LEDs Description” for more information about the various LEDs.
- Skycatch does not take any responsibility for damage caused by third-party chargers.
- To ensure safety, discharge the battery before transporting the aircraft. Fly the aircraft outdoors until its power level ranges within 30% to 20%.
- The battery has a capacity of 274 Wh. Please follow the regulations and guidelines for traveling with these batteries via air.

Warming up and Charging in Low Temperature

When the temperature falls between -20°C to 5°C, the Charging Station will warm up the battery before charging it.

⚠ DO NOT charge the battery frequently in low-temperature environments, as the charging time becomes longer, and the battery life may be shortened.

Charging Station LEDs Description

LED Indicators	Descriptions
Power Indicator	
Solid green	Powered on.
Battery Status LEDs	
Solid green	Charging completed.
Blinks green	Charging.
Solid yellow	Waiting for charging.
Blinks yellow	Warming up before charging.
Blinks yellow twice	Cooling down before charging.
Blinks yellow three times	Cannot charge the battery due to very low temperature. Please charge the battery in the place of higher temperature.
Solid red	Battery error. *
Blinks red	Battery communication warning, please try other battery ports.
Blinks red twice	Battery short circuit, please try other battery ports.
Warning LED	
Blinks yellow	Charging Station is updating.
Solid yellow	The input voltage is too low. Please use the power supply that meets the requirements.
Blinks red	Power module communication error or other. *
Blinks red twice	Motherboard error. *
Blinks red three times	Fan error. *
Blinks red four times	Charging Station self-test error. *

For errors marked with *, please contact your local dealer or a representative from the Skycatch support team.

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Buzzer Beeping Description

Buzzer beeping is used to indicate errors as outlined below.

1. When the Battery Status LED is red, the buzzer is beeping to indicate a battery error.
2. When the Warning LED is red, the buzzer is beeping to indicate a Charging Station hardware error.

Specifications

Model	Charging Station
Dimensions	501 × 403 × 252 mm
Net Weight	8.37 kg
Max Internal Load	12 kg
Compatible Stored Items	Flight Battery × 8 RC Battery × 4 AC Power Cable
Input	100-120 Vac, 50-60 Hz / 220-240 Vac, 50-60 Hz
Output	Flight Battery Port: 52.8 V, 7 A×2 @100-120 V, 8.9 A×2 @220-240 V RC Battery Port: 8.7 V, 6 A
Output Power	100-120 V, 750.0 W 220-240 V, 992.0 W
Power without Load	< 8 W
Warming up the battery	52.8 V, 2 A
Operating Temperature	-20°C to 40°C (-4° F to 104° F)
Charging Time*	100-120 V, 70 min 220-240 V, 60 min
Protection Features	Anti-backflow Protection Short Circuit Protection Over Voltage Protection Over Current Protection Temperature Protection

* Charging times are tested in a lab environment at room temperature. The values provided should be used for reference only.

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Battery Station Firmware Update

Use the Skycatch Update Manager to update firmware of the Battery Station

⚠
- During firmware update, do not insert or remove the battery to avoid battery update failure.
- During firmware update, do not unplug the USB-C cable to avoid battery update failure.
- During firmware update, do not charge the Charging Station.

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Flight Battery

Battery Introduction

The Flight Battery has high-energy cells, and a smart charge/discharge functionality. It should only be charged using appropriate Skycatch approved chargers. The Flight Battery must be fully charged before using it for the first time. The battery firmware is included in the aircraft firmware. Make sure that all the batteries' firmware is up-to-date.

Skycatch Flight Battery Functions

1. Battery Level Display: The LED indicators display the current battery level.
2. Charge or discharge the battery to 40% ~ 60% if NOT intended to be used for 10 days or more. This can greatly extend the battery's overall life span. It takes approximately 6 days to discharge the battery to 60%. It is normal that you may feel moderate heat emitting from the battery during the discharge process. You can set the discharging thresholds in the app.
3. Balanced Charging: Automatically balances the voltage of each battery cell when charging.
4. Overcharge Protection: Charging automatically stops when the battery is fully charged.
5. Temperature Detection: The battery will not be charged to avoid damage when the battery temperature is lower than -20 °C (-4°F) or higher than 45°C (113°F).
6. Over Current Protection: The battery stops charging when a high amperage is detected.
7. Over Discharge Protection: Over-discharging can seriously damage the battery. Current output will be cut off when the battery cell is discharged to 3.2 V when not in flight mode. For extended flight times, over-discharging protection is disabled as batteries discharge during flight. In this instance, a battery voltage below 1.8 V may cause a safety hazard such as a fire when charged. To prevent this, the battery will not be able to charge if the voltage of a single battery cell is below 1.8 V. Avoid using any batteries matching this description and avoid serious over-discharging to prevent permanent battery damage.
8. Short Circuit Protection: Automatically cuts the power supply when a short circuit is detected.
9. Battery Cell Damage Protection: the app displays a warning message when a damaged battery cell is detected.
10. Sleep Mode: Sleep mode is entered to save power when the aircraft is not flying.
11. Communication: Information pertaining to the battery's voltage, capacity, current, etc. is transmitted to the aircraft's main controller.
12. Heating: Batteries are able to work even in cold weather, ensuring a safe flight.
13. Waterproof and Dustproof: The aircraft has an IP45 Protection Rating , with the batteries installed.

⚠ Refer to the Disclaimer and Flight Battery Safety Guidelines before use. Users take full responsibility for all operations and usage.

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