

Quick Start Guide

HAE16C Dual AZ/EQ SWG Hybrid Mount



PACKAGE CONTENTS¹

- Telescope mount HAE16C w/built-in Wi-Fi
- AC adapter – 100-240V, 12V 5A DC output (for indoor use only)
- USB 2.0 cable
- Hard carrying case
- Optional Go2Nova® 8411 OLED handset with control cable
- Optional external iPolar (#3339)
- Optional carbon fiber tripod (#8061)
- Optional counterweight shaft (#P-SGP-CWS) and counterweight (#3006-05)

ONLINE RESOURCES (www.iOptron.com)

- User's Manual
- Hand controller and mount firmware upgrades (check online for the latest version)
- ASCOM drive, Commander, Commander Lite and other computer control

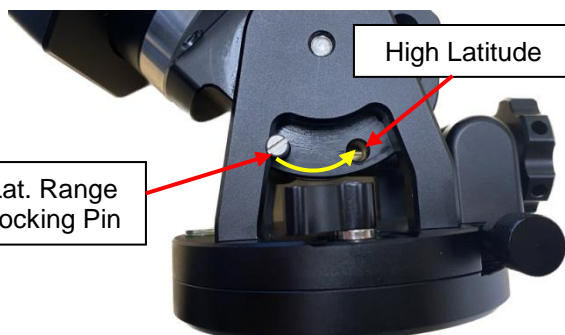
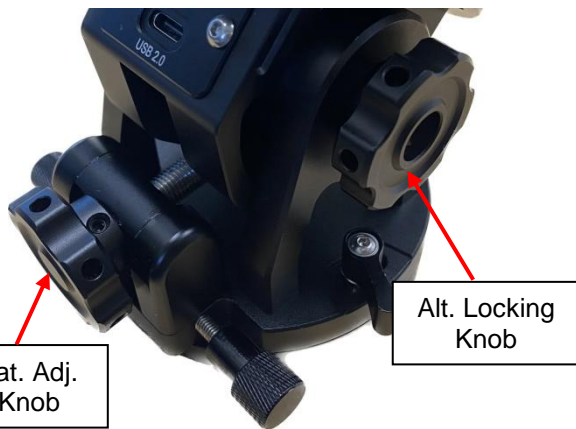
¹Contents and design may change from time to time without notice.

Please hold the telescope when disengaging the DEC Gear Switch. An HAE mount is operated under unbalanced conditions and could be tipped off if the tripod is not secured.

1. **Remove mount head from package:**



2. **Set Latitude Range:** An HAE16C has two latitude range settings: 0~47° and 43~90°. The default setting is 0~47° (front latitude hole). You may change the latitude range based on your location or if an altazimuth (AA) mode is desired. Slightly loosen Altitude Locking Knob. Use a flat head screw driver to remove the Latitude Locking Pin. Adjust the mount so that the hole on the brass latitude eyebolt is aligned to the high latitude position hole. Insert the Locking Pin to secure it.



3. **Set up tripod:** An HAE16C mount uses a 3/8"-16 threaded hole for attachment. So a camera tripod or other tripod with a 3/8"-16 mounting post can be used. Shown here is an iOptron carbon fiber tripod #8061/#8061A.

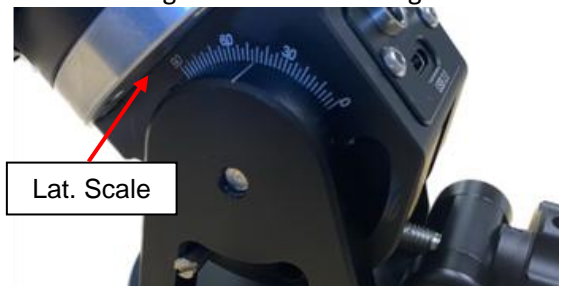


4. **Attach mount head:** Thread the mount head onto the tripod head and secure it.



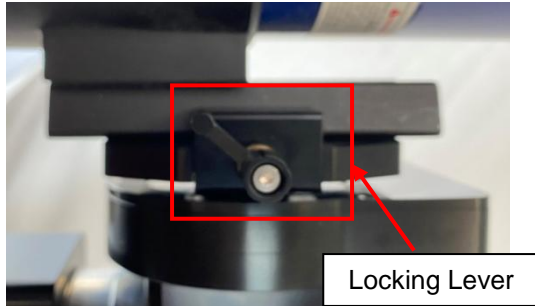
Level the mount by adjusting the tripod legs. Use the built-in Bubble Level Indicator on the mount base or an external leveler for this purpose.

5. **Adjust latitude:** To adjust the latitude, slightly loosen the Altitude Locking Knob. Use the Latitude Adjustment Knob to move the mount to the desired latitude by aligning the Latitude Mark Line to the Latitude Scale. Tighten the Alt. Locking Knob.



6. **Install telescope:** An HAE16C mount accepts a Vixen dovetail mounting plate.

Release the dovetail Saddle Locking Lever and slide the telescope dovetail plate into the saddle with Gear Switch disengaged. Make sure that the arrow sign on the saddle is pointing forward. Tighten the Saddle Locking Lever.



The locking levers on an HAE16C mount are ratchet ones. Pull the lever handle and turn it to the position that the lever is parallel to the saddle or points towards the scope to prevent it interfering with the DEC unit during mount GOTO and tracking.

7. **Balance payload:** No RA balance is needed for an HAE16C mount.

Turn the mount power on. Press number 9 to change the slew speed to max. Press ◀ or ▶ button to slew the telescope to one side of the mount. Hold the telescope and disengage DEC Gear Switch to check the balance. Release the dovetail saddle locking lever and move the scope back and forth to adjust the position. Tighten the dovetail saddle locking lever and engage the gear switch after balancing is completed.



Return the mount to Zero Position after balancing and engage the DEC gear switch.

8. **Install counterweight bar and CW:** The mount is designed to operate without a counterweight (CW). If you want to use an optional CW, the CW shaft mounting hole is 3/8"-16 threaded. Thread in a CW

shaft (#P-SGP-CWS) and install a 5 lbs CW ((#3006-05).



9. **Connect DC power and handset:** Plug in a 12V DC power supply to the DC12V IN socket on the base.

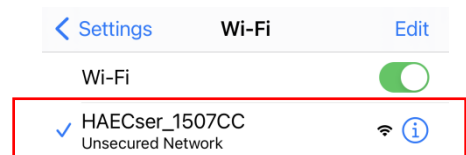


If you have an optional Go2Nova® 8411 handset, plug it into the 6P6C handset port on the mount.

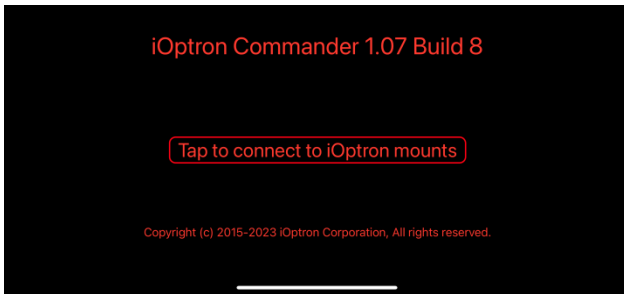


10. **Mount control via a SmartPhone/Tablet:** The mount can be controlled by the iOptron Commander Lite app for initial settings, as well as slew, GOTO and tracking.

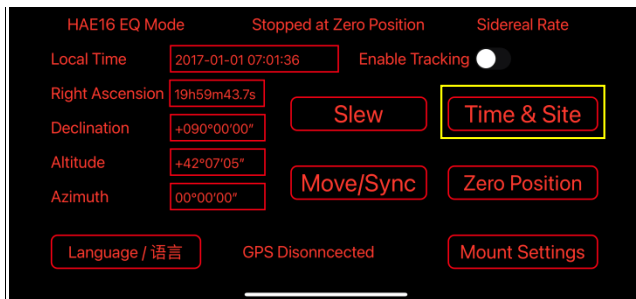
Turn the mount power on. Check your SmartPhone WIFI setting and connect to a WIFI device named HAEcser_XXXXXX.



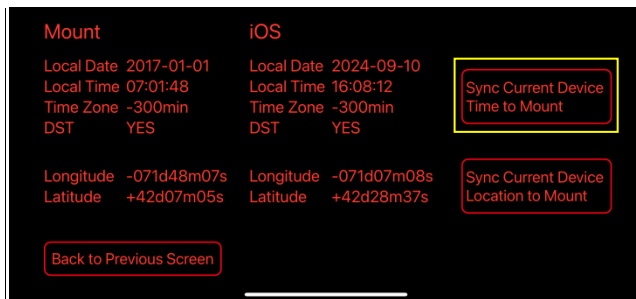
Launch iOptron Commander Lite and tap to connect the mount.



Now you can control the mount via your phone/tablet.



Click on **Time & Site**, then tap on **Sync Current Device Time to Mount** and **Sync Current Device Location to Mount** to set the mount Time and Site info.



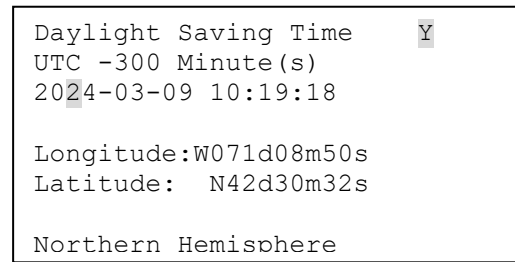
Please refer to online full operation manual for more detailed information.

The mount can also be controlled via Sky Safari 6 Pro or above and a single board computer running INDI driver.

- Mount control via an 8411 handset:** An HAE mount uses an optional 8411 handset. Press **MENU** button, then **Settings =>Set Time and Site** to set the hand controller.

Enter the current date. Enter the time zone offset to the UTC; for example:

- Boston is "UTC -300 minutes"
- Los Angeles is "UTC -480 minutes"
- Rome is "UTC +060 minutes"
- Sydney is "UTC +600 minutes"

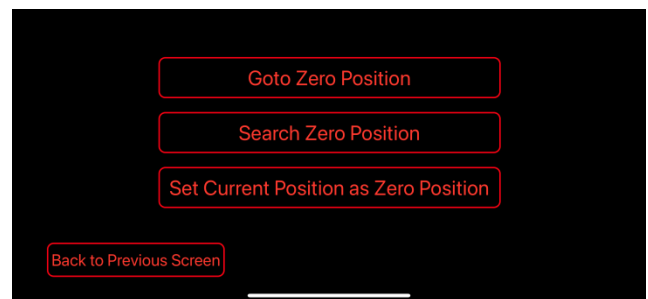


Enter longitude and latitude coordinates according to your GPS information. Toggle the Daylight Savings Time (DST) between N(No) and Y(Yes) using the arrow key. Move the cursor to the end of the screen to select the Northern or Southern Hemisphere.

All time zones in N. America are "UTC -XXX minutes". Latitude and longitude coordinates can be obtained from GPS-equipped devices (navigator, phone), or from the internet, if you are entering them manually. Enter "+/-" for "W(estern)/E(asterly)" or "N(orthern)/S(outhern)". Use arrow and number keys to enter location information.

- Mount control via a computer:** One can control the HAE16C mount via one of two USB-C ports on the mount; one is on the dovetail saddle and the other on the base. It can also be connected via a built-in WIFI on the main board. It supports ASCOM for Windows, third party INDI driver for MacOS or Raspberry Pi, iOptron Commander Lite or SkySafari Pro for iOS/Android. Some software also has an iOptron mount driver embedded.

- Zero Position:** The **Zero Position** is the mount GOTO reference. Without setting the mount zero position properly, it may cause a large GOTO error or even cause the scope to hit the tripod leg. The simplest way to find the mount Zero Position of an HAE16 mount in EQ mode is using the zero position sensors.



You may also perform this by click on **Zero Position =>Search Zero Position**, then press **ENTER**, if an optional 8411 handset is used. Follow the online instruction to complete the process. The Zero

Position can be set via the 8411 handset, the iOptron Commander/Lite, or the planetarium software.

14. **Polar alignment:** When an HAE mount operating at EQ mode, if no iPolar is installed or the pole star is not in sight, you may use two bright stars for coarse polar alignment if you have the optional handset.

You may also use planetarium software for polar alignment.

An HAE16 mount may use an external iPolar™ electronic polar scope. Just place the iPolar over the bubble level on top of the mount with USB port facing downward and parallel to the ground surface. Secure the thumb screws.



Refer to the iPolar Operation Manual from iOptron's website to perform the polar alignment, or steps briefly outlined below:

- Download and install iPolar Software (first time use);
- Connect a USB cable between the iPolar USB port and a computer USB port;
- Click Connect and start polar alignment by following on screen instructions.

15. **Set Mount in AA mode:** Here are the steps to set the mount in AA mode.

- (1) Switch latitude range to high latitude
- (2) Adjust the mount to 90 degree, *i.e.*, the altiazimuth (AA) mode
- (3) Power on the mount and change the mount mode to AA via handset or Commander/Lite
- (4) Adjust the mount to Level-South-Zenith, *i.e.*, level the mount using the bubble level on top of the mount head, pointing telescope to Zenith and set the "HAE16" logo facing south (or dovetail saddle facing WEST.)



16. **Manual operation:** Now the mount can be used to observe astronomical objects. Use the arrow buttons (▶, ◀, ▼, and ▲) from your handset, Commander Lite, Commander or a software to point the telescope to the desired object. Use the number keys to change the slewing speed. Press the 0 button on handset, or click on the Tracking box in Commander to start/stop tracking.

17. **Go to an object:** The mount is now ready for GOTO and tracking targets. Press **MENU** on the handset, select and ENTER **Select and Slew**. Select a category (e.g., **Solar System**), then select an object of interest (e.g., **Mars**). Press **ENTER** and the telescope will slew to the object and automatically start tracking. You may also using iOptron Commander or planetarium software to perform GOTO function.

18. **Sync to Target:** If the object is not in the center of the eyepiece, use this function to synchronize the object to improve GOTO accuracy.

19. **Put the mount back into the package/carrying case:** It is recommended to return the mount to Zero Position at the end of the observation session. Lay the mount into the carrying case. Disengage the gear system for transportation.

Contact support@ioptron.com for technical support.

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IOPTRON TWO YEAR TELESCOPE, MOUNT, AND CONTROLLER WARRANTY

A. iOptron warrants your telescope, mount, or controller to be free from defects in materials and workmanship for two years. iOptron will repair or replace such product or part which, upon inspection by iOptron, is found to be defective in materials or workmanship. As a condition to the obligation of iOptron to repair or replace such product, the product must be returned to iOptron together with proof-of-purchase satisfactory to iOptron.

B. The Proper Return Merchant Authorization Number must be obtained from iOptron in advance of return. Call iOptron at 1.781.569.0200 to receive the RMA number to be displayed on the outside of your shipping container.

All returns must be accompanied by a written statement stating the name, address, and daytime telephone number of the owner, together with a brief description of any claimed defects. Parts or products for which replacement is made shall become the property of iOptron.

The customer shall be responsible for all costs of transportation and insurance, both to and from the factory of iOptron, and shall be required to prepay such costs.

iOptron shall use reasonable efforts to repair or replace any telescope, mount, or controller covered by this warranty within thirty days of receipt. In the event repair or replacement shall require more than thirty days, iOptron shall notify the customer accordingly. iOptron reserves the right to replace any product which has been discontinued from its product line with a new product of comparable value and function.

This warranty shall be void and of no force of effect in the event a covered product has been modified in design or function, or subjected to abuse, misuse, mishandling or unauthorized repair. Further, product malfunction or deterioration due to normal wear is not covered by this warranty.

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Some states do not allow the exclusion or limitation of incidental or consequential damages or limitation on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

iOptron reserves the right to modify or discontinue, without prior notice to you, any model or style telescope.

If warranty problems arise, or if you need assistance in using your telescope, mount, or controller contact:

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Tel. (781)569-0200
Fax. (781)935-2860
Monday-Friday 9AM-5PM EST

NOTE: This warranty is valid to U.S.A. and Canadian customers who have purchased this product from an authorized iOptron dealer in the U.S.A. or Canada or directly from iOptron. Warranty outside the U.S.A. and Canada is valid only to customers who purchased from an iOptron Distributor or Authorized iOptron Dealer in the specific country. Please contact them for any warranty.