

GlideWise Canopy Flasher Installation Manual



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1. Before you start

1.1. Important

Welcome to the installation manual for the GlideWise canopy flasher. This manual will guide you through the installation and setup of your new system, ensuring compliance with all relevant safety and regulatory standards, and ensuring the correct functioning of the device.

Before using any part of the canopy flasher, please read and understand this manual. All information in this document is subject to change without notice. The latest version can be downloaded from www.glidewise.co.uk.

GlideWise Ltd is not liable for any damages resulting from the installation and operation of the device.

1.2. About GlideWise

GlideWise provides high-quality safety and awareness solutions for gliders. Our canopy flasher is designed to enhance visibility and safety during flight. The GlideWise canopy flasher not only offers great luminosity but also integrates advanced safety and efficiency features, ensuring pilots can rely on our technology to stay safe in the sky.

1.3. Compliance with EASA Regulations

The installation of the GlideWise system must comply with EASA regulations as per Standard Change CSSC036b "Installation of Visual Awareness Lights". For more information, visit the EASA website at <https://www.easa.europa.eu/downloads/136407/en>.

1.4. Limited Warranty

This GlideWise product is warranted to be free from defects in materials or workmanship for two years from the date of purchase. Within this period, GlideWise will, at its sole discretion, repair or replace any components that fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts and labour, provided that the customer shall be responsible for any transportation cost.

This warranty does not cover failures due to abuse, misuse, accident, or unauthorised alterations or repairs. GlideWise shall not be liable for any indirect, incidental, special, or consequential damages, including but not limited to loss of profits, revenue, or data, arising out of or in connection with the use, misuse, or inability to use this product, even if GlideWise has been advised of the possibility of such damages.

GlideWise's total liability under or in connection with this product shall not exceed the purchase price of the product, provided that nothing in this clause shall exclude or limit liability for death or personal injury resulting

from GlideWise's negligence or for fraud or fraudulent misrepresentation, or any other liability that cannot be excluded or limited under applicable law.

This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction. Nothing in this warranty affects your statutory rights as a consumer.

1.5. Contact Information and Support

For any assistance, please contact our support team at:

- Email: support@glidewise.co.uk
- Phone: +44 (0)203 290 4800
- Website: www.glidewise.co.uk

2. Safety Precautions

2.1. General Safety Warnings

2.1.1. Read and understand all instructions before beginning the installation.

2.1.2. Disconnect power before working on any electrical connections.

2.1.3. Ensure that no one is looking directly at the canopy flasher or at the reflected beam in close proximity when the LEDs are active. Doing so could potentially cause temporary or permanent retinal damage. The control box is designed to initiate flash mode shortly after take-off and cease it upon landing when the on/off switch on the instrument panel is in the "on" position. However, always be mindful of potential malfunctions, such as incorrect FLARM signals. Pay special attention when the on/off switch is in the "on" position, as the GlideWise canopy flasher indicates proper operation with a green light at the back of the head unit.

2.2. Electrical Safety

- Ensure all electrical connections are secure and insulated to prevent short circuits.
- Use the appropriate fuse or circuit breaker (2A) to prevent overloading the electrical system.

2.3. Proper use

Our canopy flasher is engineered to improve the visual awareness of your glider by emitting flashes from high intensity red LEDs. The head unit should be mounted inside the forward section of the canopy, offering limited coverage in the forward sector of the glider.

While the canopy flasher serves as an additional aid to help pilots avoid mid-air collisions during daytime VFR conditions, safety decisions and airspace monitoring must still be conducted independently of any visual awareness light system.

The flasher assists others in spotting your glider more quickly, but always remember the fundamental rule of flying: **You must always keep a good lookout!**

2.4. Improper use

Improper use will void all liability claims and guarantees. Improper use includes any usage outside the specified purposes, particularly:

- This product is not certified as an anti-collision light and should not be installed if an anti-collision light is required by operational regulations.
- Operating it outside the defined conditions in the technical data section, such as input voltage, temperature, and humidity.

2.5. Handling and Disposal of Components

- Handle all components with care to avoid damage.
- Dispose of packaging and old components according to local regulations.

3. Materials Required

- 2A fuse or circuit breaker to protect the system.
- Cable ties to secure wiring.

4. Unpacking and Inspection

4.1. Unpacking Instructions

- Carefully remove all items from the packaging.
- Keep the packaging materials for potential returns or storage.

4.2. Component Checklist

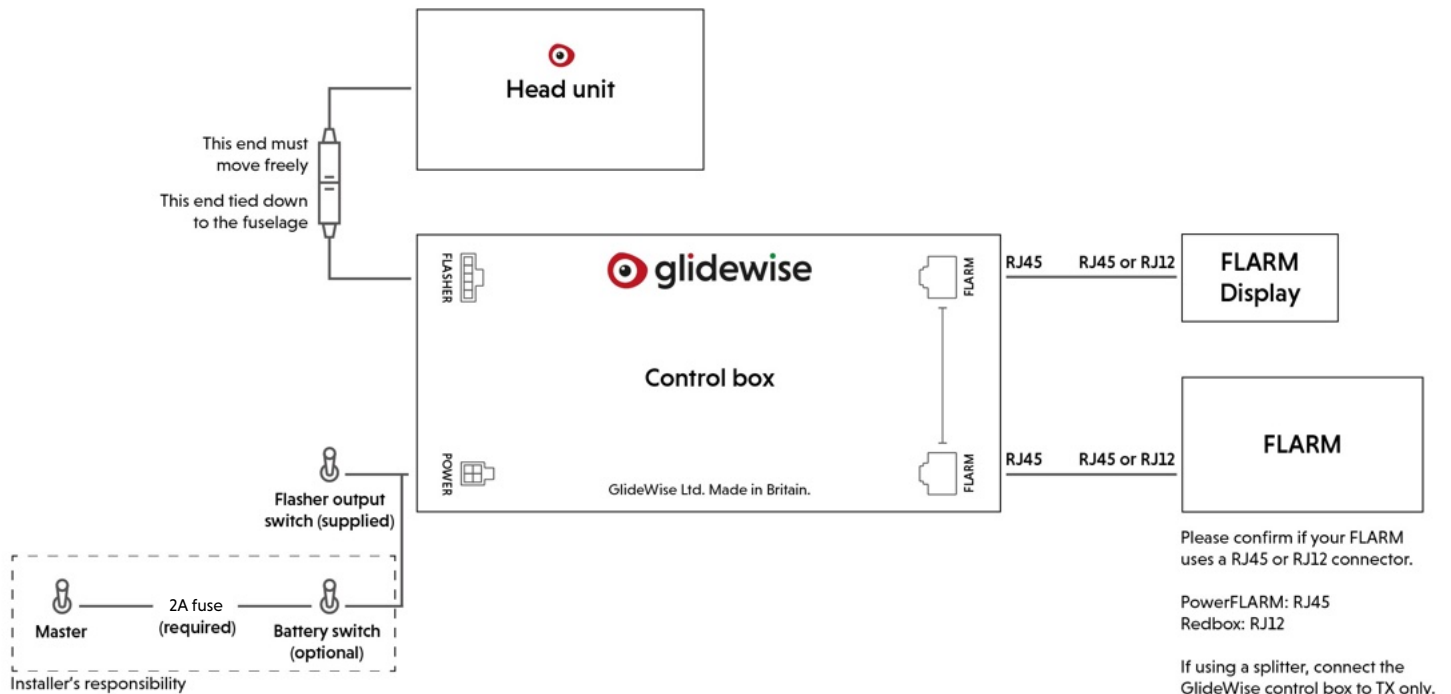
- Canopy flasher with ultra-bright red LEDs and built-in customer confidence indicators.
- Control box with FLARM integration and connectivity with our Android app for configuration and firmware updates.
- Cables:
 - With a detachable plug in case of canopy jettisoning (for front-hinged canopies).
 - With magnetic connectors for hinge line installation (for side-opening canopies)
Allen key (M2.5) and a 1.5mm PH000 screwdriver supplied with the side-opening version.
When applicable, a shim will be provided depending on the glider type.
- Power wiring and on/off panel switch.
- FLARM cable with both ends RJ45 (can be swapped for RJ45-RJ12) - 30cm. Units delivered at the end of March 2025 come with 50cm cables.

- Attention: We supply IGC-standard cables with 1:1 pin assignment. Before using our cable, check your variometer, navigation system, or FLARM display manual.
- VHB tape for fixing the control box to the back of the instrument panel (optional)

4.3. Inspecting Components for Damage

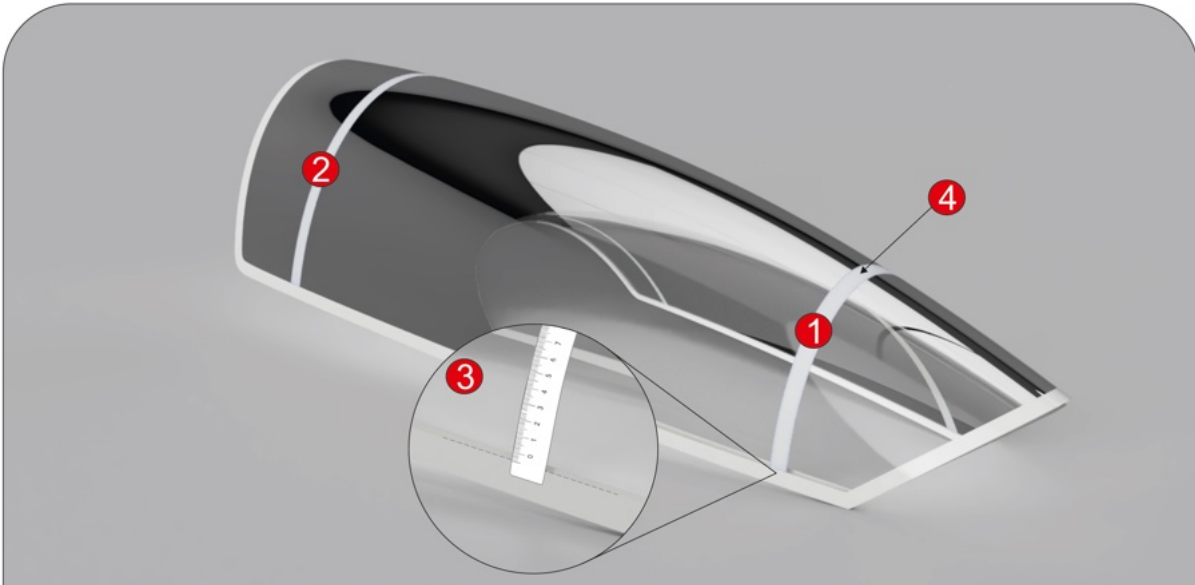
- Check each component for any visible damage.
- Contact support if any items are damaged or missing.

5. Installation of Visual Awareness Lights

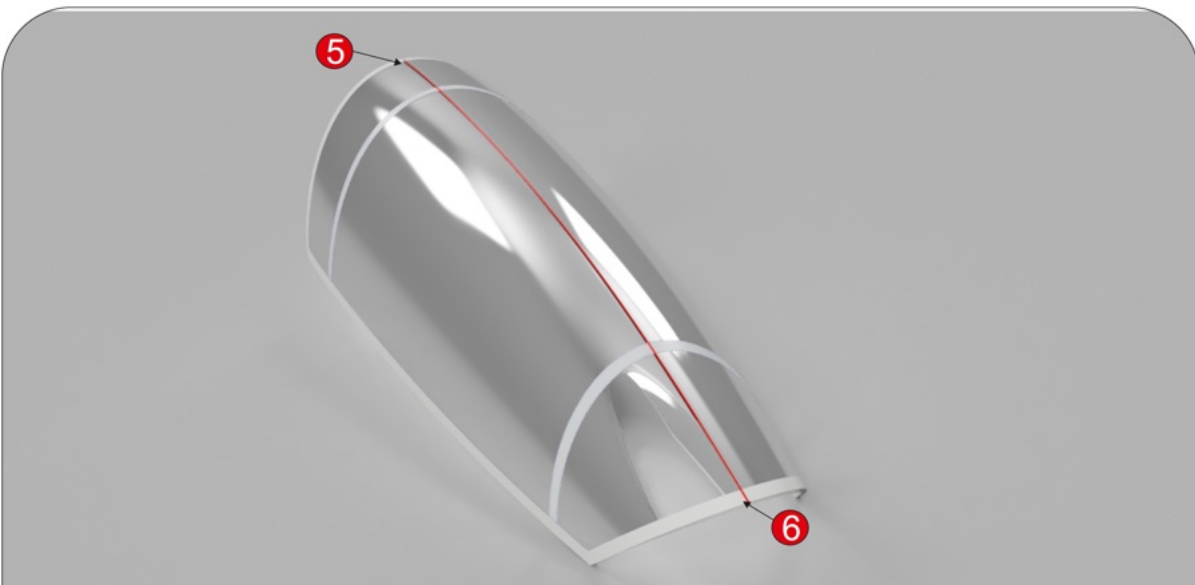


Attention: We supply IGC-standard cables with 1:1 pin assignment. Before using our cable, check your variometer, navigation system, or FLARM display manual.

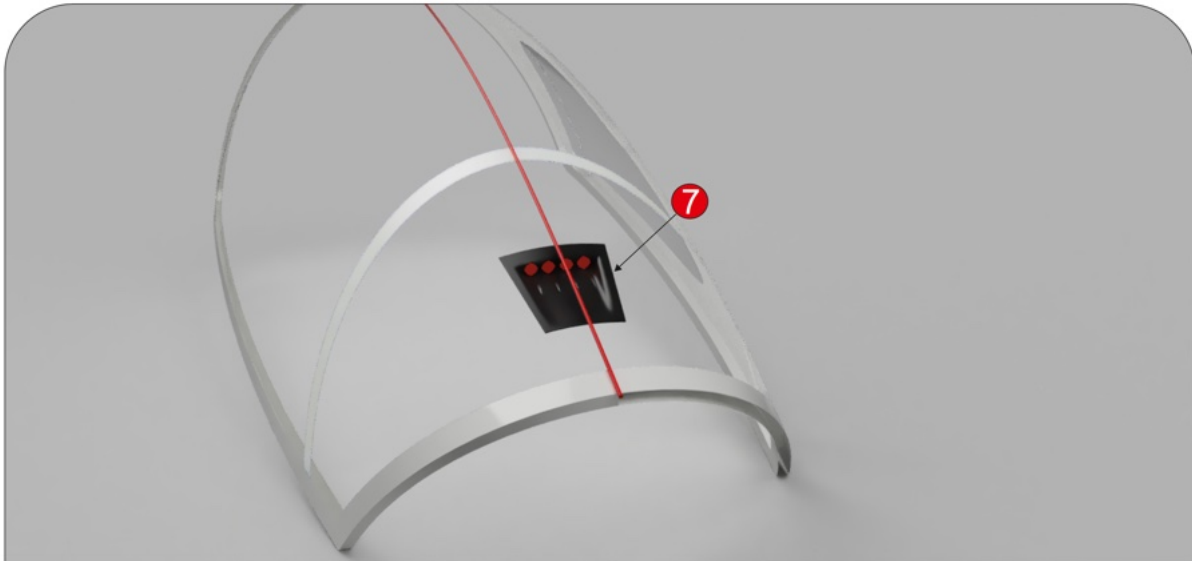
5.1. Mounting Procedures for the head unit



- 1 2** Wrap the paper ruler carefully around the canopy fore and aft.
- 3** Ensure that the edge of the canopy is aligned with zero on the paper ruler. Fix with masking tape.
- 4** Find the centre of the canopy by dividing the length from canopy edge to canopy edge by two for both rulers **1** and **2**. It is useful to mark the rulers accordingly.

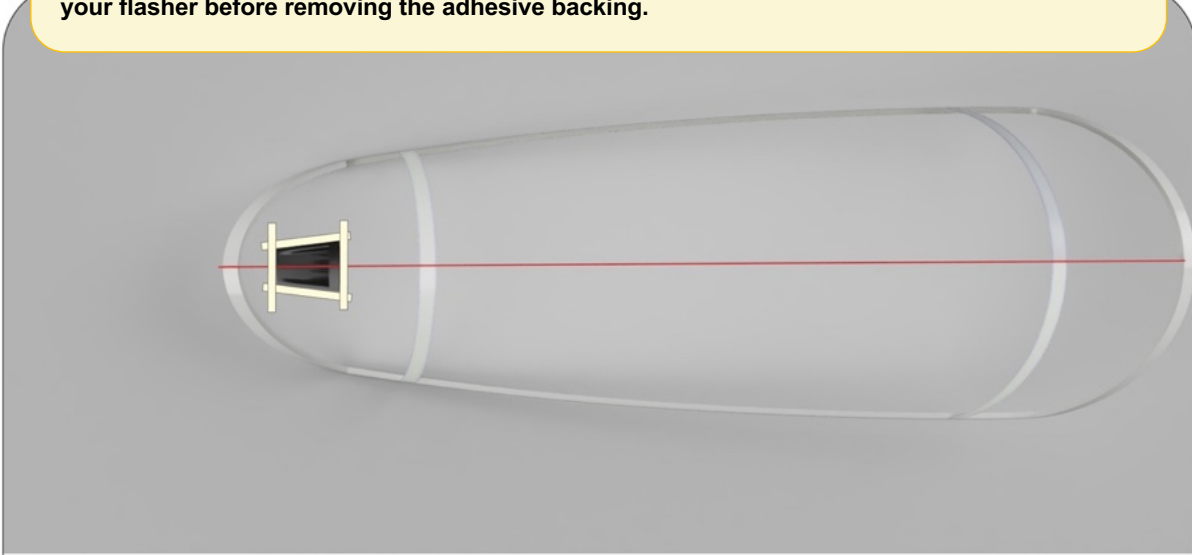


- 5 6** Affix a length of string to intersect both centre lines. Use masking tape to hold into position.



- 7** Don't remove the adhesive backing material yet. With help from a friend, position the flasher unit centrally by using the string as a guide. Be sure that there is sufficient room for vents to open and close. With the exception of DG-100, DG-200, DG-300, DG-400 and DG-600, we recommend that the flasher unit is placed as far forward as is practical.

Attention: Please note that "as far forward as is practical" means avoiding interfering with the vent, if present, and conforming to the canopy shape. While we made efforts to make the canopy flasher housing as universal as possible, its flexibility is limited. Hence, we recommend installing it a few centimetres away from the edge of the canopy, as represented in these illustrations. **Always dry-fit your flasher before removing the adhesive backing.**



- 8** Whilst the flasher unit is held in place, add some masking tape to the outside of the canopy to mark the position. Remove the adhesive backing and carefully mount your flasher using the marking tape outline as a guide. Press the edges of the flasher unit firmly against the canopy to seal the adhesive.

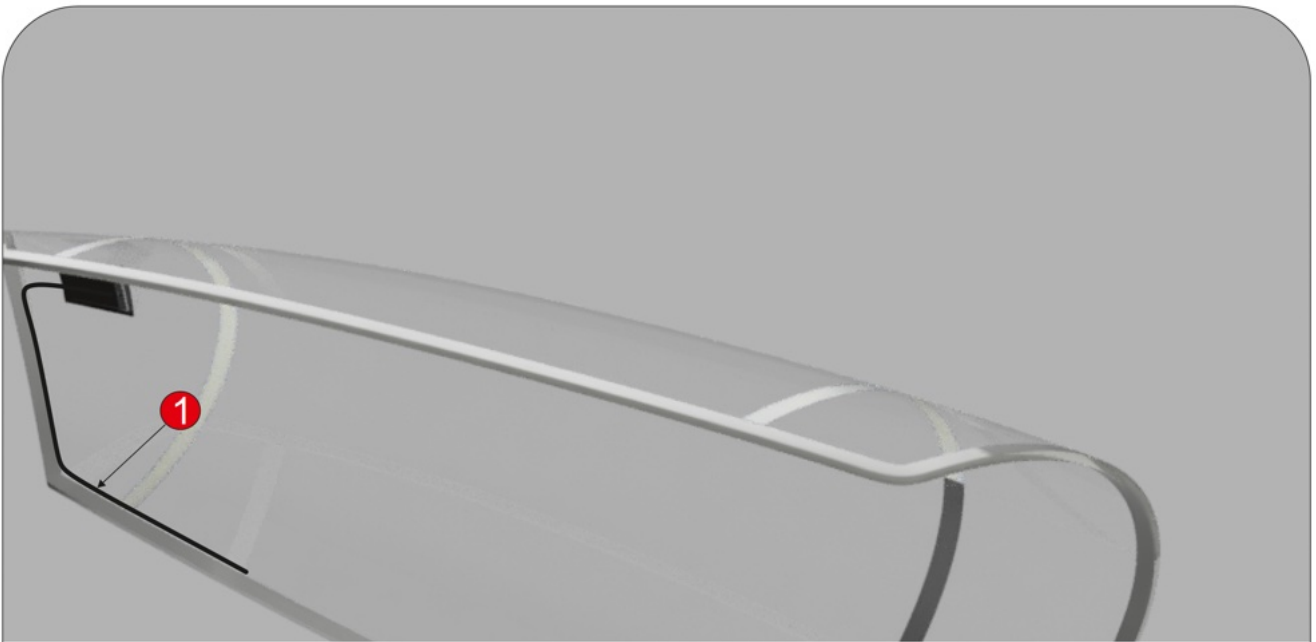
5.2. Connector installation for successful canopy jettison

5.2.1. Front-opening canopies

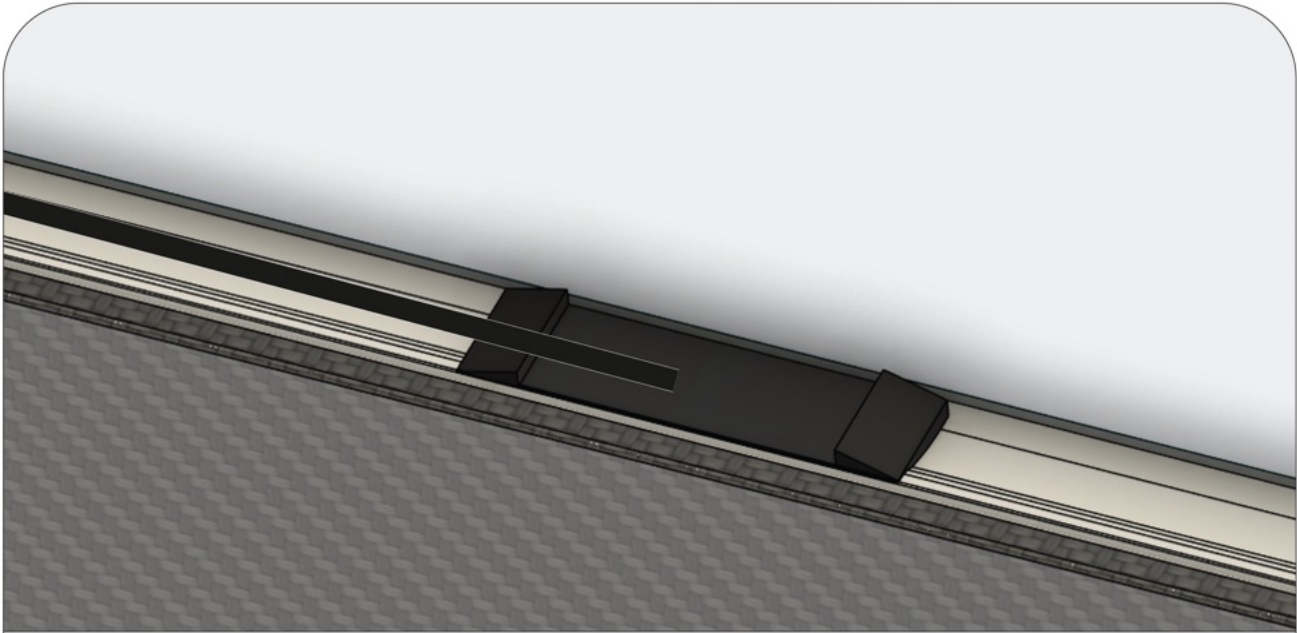
Tie down the control box end of the mini-XLR connector cable to the fuselage, under the instrument coaming. This ensures that if the canopy is jettisoned during an emergency, the connector will separate and the canopy with the flasher's head unit will disconnect freely. Both ends of the connector should be under the instrument coaming to prevent the mini-XLR from knocking around.

5.2.2. Side-opening canopies

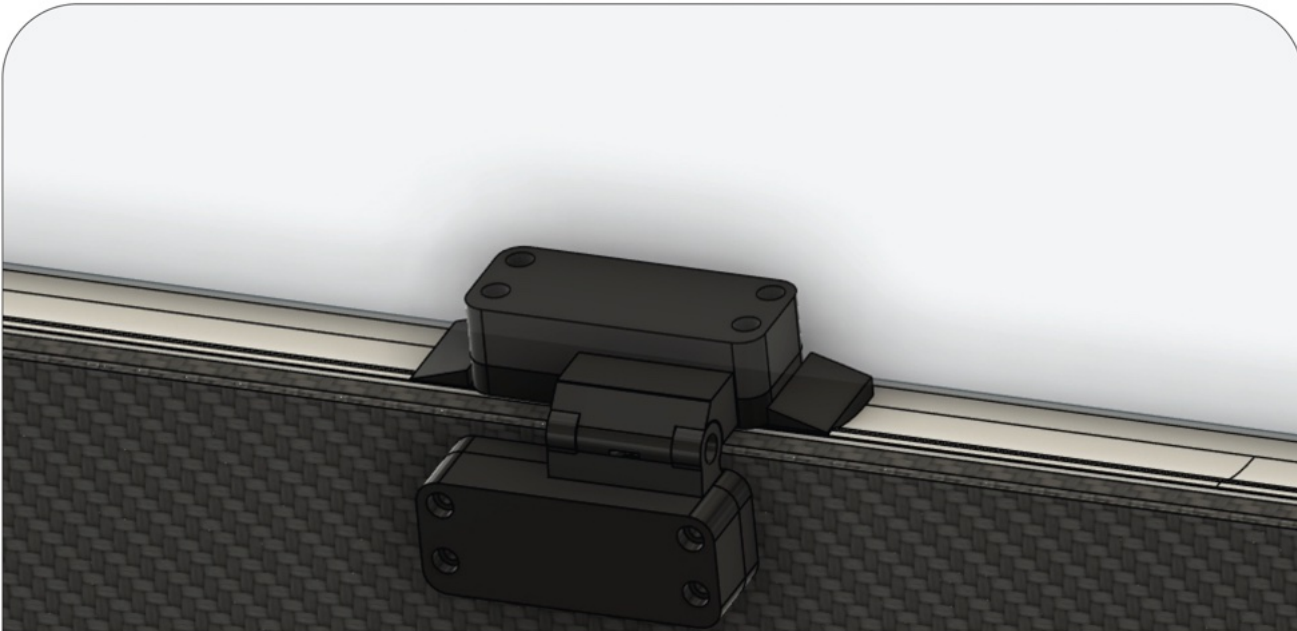
We supply a magnetic pogo-style connector for side-opening canopies. There are two variants: straight and a hinged 90-degree. The instructions in the following pages show the hinged connector. The process for installing both is the same, with the main difference being the connector placement on the canopy frame. You will have received the correct variant to fit your glider.



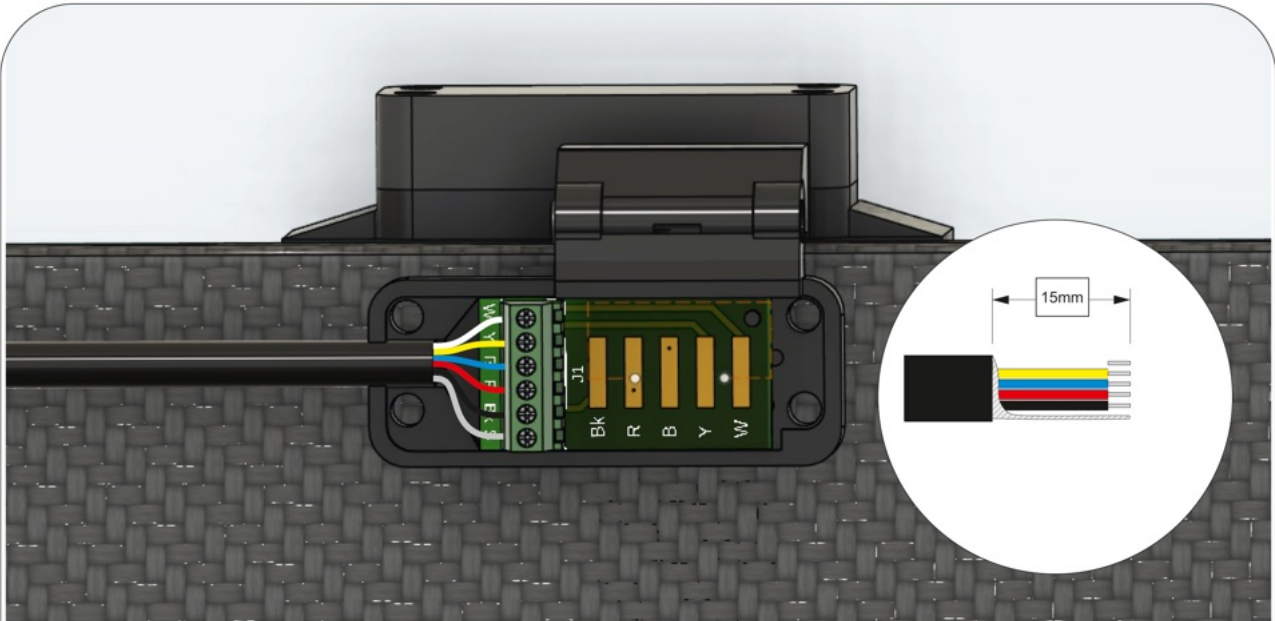
- 1 For Side-opening canopies, the cable is routed around the edge of the canopy frame. Small self-adhesive cable clips or velcro can be used to attach the cable securely. We recommend that the final 25cm is not secured yet, as you'll need to connect this later into one of the connectors and you'll need a bit of slack to do this.



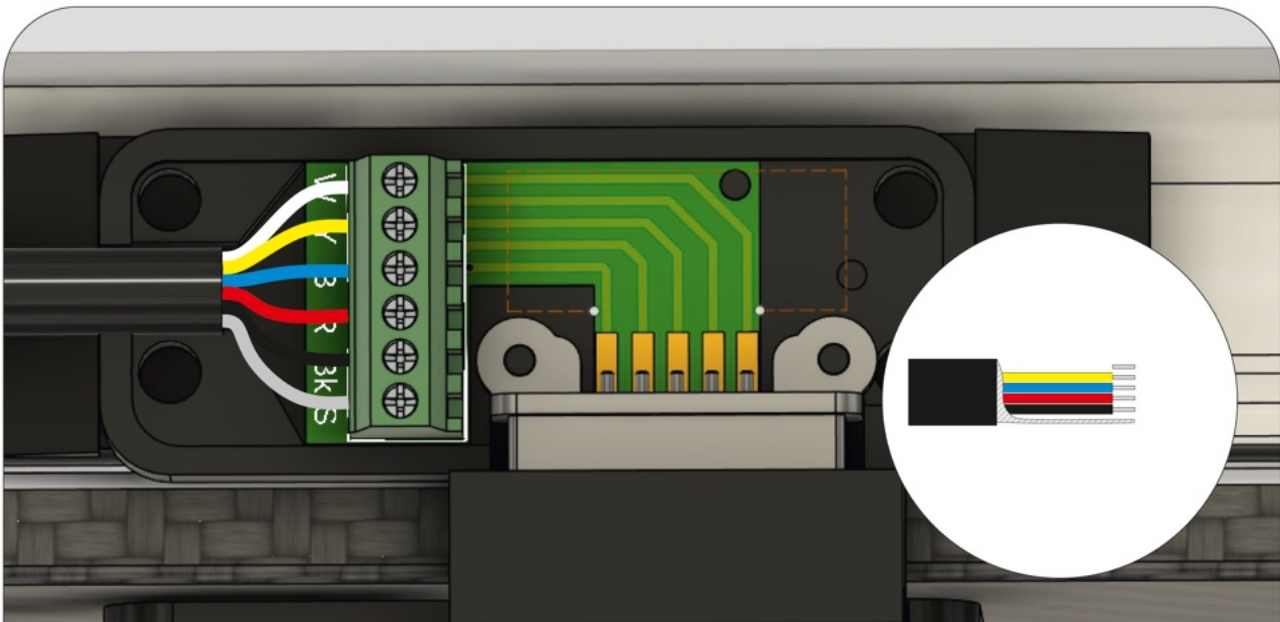
- 2** For most canopies, we provide a shim. Many of the gliders have a small moat or irregular surface. We're effectively filling this to ensure good contact for the connector housing when finally installed. You'll need to find a position that (a) is within cable reach (b) is unlikely to interfere with Oudie, mirror, O2 regulator valves etc. (c) is out of your foot's way, so you can't accidentally kick the connector when entering or leaving the glider and (d) is on the horizontal and straight section of the fuselage (not on curved surfaces). Now is a good time to thoroughly clean the area with IPA before attaching the shim with supplied VHB tape.



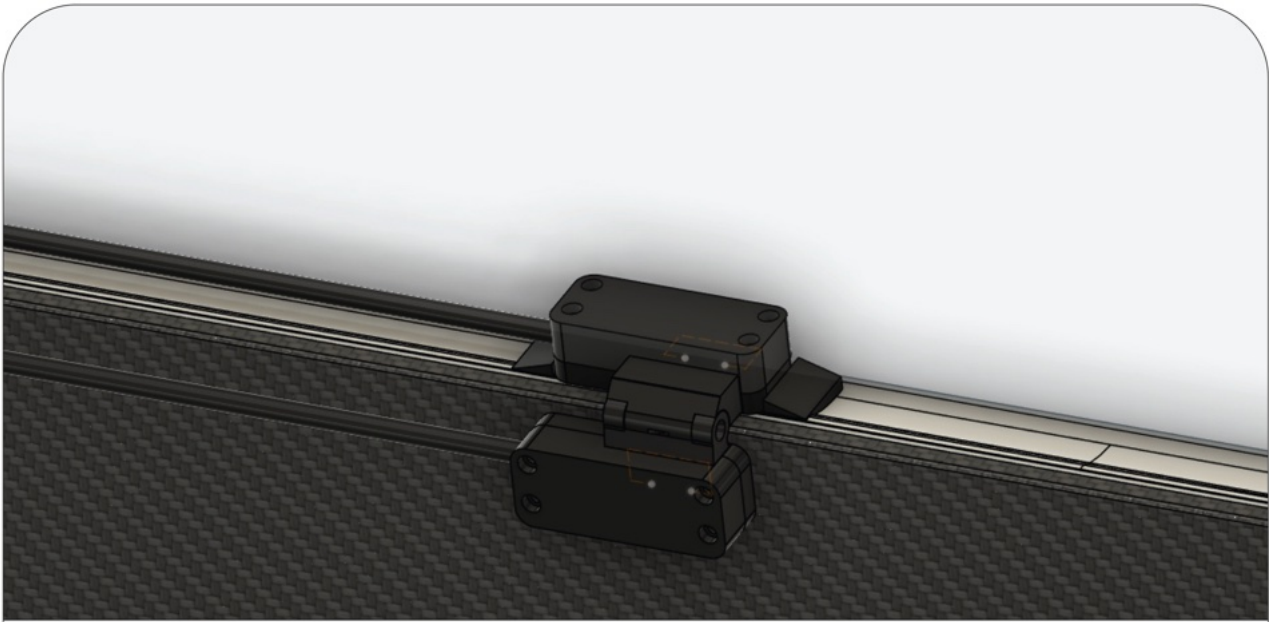
- 3** Dry-fit the connector assembly. The magnets will hold both of the connectors together. You'll want to mark the position of these connectors with masking tape to ensure that they are positioned properly when you come to fixing them permanently. It would be useful at this stage (probably with help from a friend) to check that the connectors mate properly when opening and closing the canopy. Consider adjusting the 90 degree joint by loosening the bolts on either side. Those bolts adjust the friction of the joint & we've found that reducing the friction will ensure repeatable alignment when in use.



- 4** Wiring the fuselage side connector. Remove approximately 15mm of the outer jacket and twist the shield wire as shown. Remove approx 4mm of insulation from each wire. Insert the wires into the screw-terminal housing and tighten the screws with the supplied screwdriver. The board is marked with the corresponding wire colours. Check that all wires are firmly connected before moving on with the next stage. We've found this easier to do if the fuselage side connector is not adhered to the side of the fuselage.



- 5** Wiring the canopy side connector. Much the same as the fuselage connector, except you'll want to reduce the length of the wire to ensure there is no slack in the cable. Please measure this carefully as it will be tricky if you cut the cable too short. Again, connecting the wires to the connector block is much easier if the housing has not been adhered to the canopy.



- 6** Final fitting. Insert screws to affix both caps to the connector housings. Remove the VHB tape from the bases of both connector blocks. Using the masking tape guides that you applied earlier, and with both connectors connected (the magnets will hold them together), offer up both connectors to the hinge line. It is critical that the canopy connector block is flat and parallel with the shim. Press both connector blocks into position and hold firmly. The VHB tape will take upwards of 12 hours for a permanent bond.

6. Electrical Installation

6.1. Installation of a Dedicated 2A Fuse or Circuit Breaker

Initial alpha units required a 3.5A fuse. New units require a 2A fuse.

6.1.1. Panel Installation Instructions



The GlideWise control box consumes only 3.7mA in standby mode and is intended to be permanently connected to the main power switch. If it is your intention to connect to a battery changeover switch, then this is acceptable, but the control box will restart when a switchover occurs.

- Identify an appropriate location on the panel.
- Mount the fuse holder or circuit breaker securely.

6.1.2. Inline Fuse Holder Installation Instructions

- Connect the inline fuse holder to the power supply line.
- Ensure the fuse is correctly rated and seated.

6.2. Wiring Instructions

6.2.1. Connecting to the Power Source

- Use appropriate gauge wire for the connections.
- Connect the positive wire to the fuse or circuit breaker.
- Connect the ground wire securely to the ground terminal.

6.2.2. Connecting the Control Box and Head Unit

- Follow the wiring diagram provided in the appendix.
- Connect the head unit to the control box using the mini-XLR connector cable.
- Secure all connections to prevent loosening during flight.
- The mini-XLR connector must be underneath the instrument coaming. The control box end should be fixed to the fuselage using cable ties, while the head unit end should be free to release in case of canopy jettisoning.

6.2.3. Mounting the Control Box

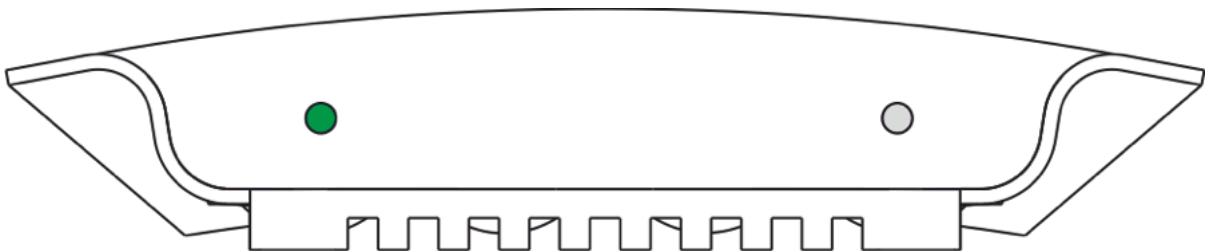
- Attach the control box to the back of the instrument panel using heavy-duty Velcro tape.
- Alternatively, use the provided VHB tape for a more permanent installation.




7. FLARM Integration

Attention: We supply IGC-standard cables with 1:1 pin assignment. Before using our cable, check your variometer, navigation system, or FLARM display manual.

7.1. Overview of FLARM System Integration

GlideWise integrates seamlessly with FLARM devices to change the intensity and frequency of the flasher based on the different alarm levels.



-  Flash paused (on ground or waiting for FLARM)
-  Flasher controlled by FLARM
-  Flasher not controlled by FLARM (or in auto mode due to FLARM failure)

7.2. Baud Rate Settings

- Default Baud Rate: 19200
- Supported Baud Rates: 2400, 4800, 9600, 19200, 38400, 57500, 115200

7.3. Using the GlideWise App for Configuration

- Download and install the GlideWise app on your device (Android only at the moment).
- Open the app and follow the instructions to connect to the canopy flasher.
- The app will guide you to check the RJ45 cable connection.
- Verify and select the correct baud rate using the app.

7.4. Built-in Unpowered FLARM Splitter

7.4.1. Description and Functionality

- The splitter allows connection of multiple FLARM devices.
- RJ45 Ports and Included Cable: ensure you use the correct RJ45 port for your FLARM device.
- RJ45-RJ45 Cable Option: contact GlideWise support if you need to buy an RJ45-RJ45 cable instead of the provided RJ45-RJ12 cable.

8. Temperature Monitoring and Power Management

8.1. Control Box Temperature Measurement

The control box constantly monitors the temperature of the head unit to prevent overheating.

8.2. Operating Temperature Range

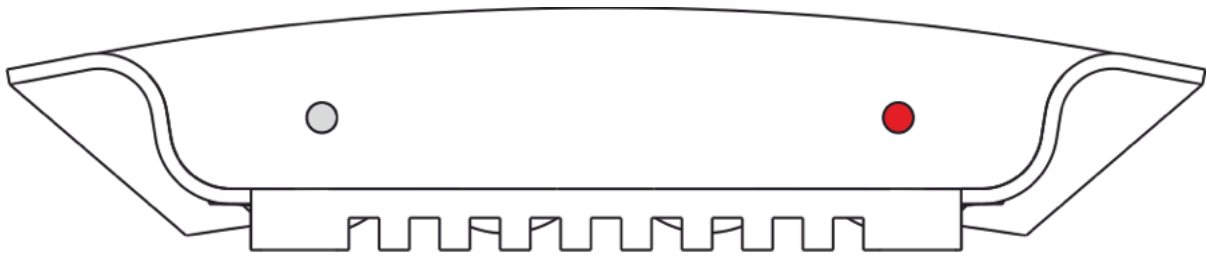
The head unit operates safely within a temperature range of -40 to 80 degrees Celsius.




8.3. Automatic Power Reduction ('De-Rating')

If the temperature exceeds safe limits, the unit will automatically reduce power to the LEDs to manage heat.

This function ensures continued operation even under high temperatures, except in the most severe FLARM alerts.

A temperature indicator can be found on the rear of the head unit:



-  Head-unit temperature within acceptable limits.
-  Head-unit temperature is high, flashing intensity is reduced.
-  Head-unit temperature is critical flashing intensity is significantly reduced.

9. Testing and Calibration

9.1. Powering Up the System

- Reconnect the battery or power source after completing the installation.
- Turn on the system and observe the startup sequence to ensure proper operation.

9.2. Initial System Checks

- Verify that the LEDs are functioning correctly.
- Use the GlideWise app to confirm successful FLARM integration.

9.3. Calibration Procedures

Follow the instructions provided in the GlideWise app to calibrate the system for optimal performance.

10. Maintenance and Troubleshooting

10.1. Common Issues and Solutions

- LED Not Working: Check power and connections. Ensure the fuse is not blown.
- FLARM Not Detected: Verify cable connection and baud rate settings. Use the GlideWise app to check for proper configuration. Even if there is no FLARM data or GPS signal, the flasher will still flash under its cruise mode.
- Overheating: Ensure the control box is properly ventilated and not exposed to excessive heat sources.