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FAI AEROMODELLING COMMISSION (CIAM)
ELECTRONIC DEVICES IN COMPETITIONS WORKING GROUP (EDIC-WG)

To: CIAM web site under EDIC Approvals
CIAM Technical Secretary
F3 Sub Committee

Copy: Manufacturer Concerned

Date: 16 March 2026

CIAM APPROVAL FOR F3G ALTIMETER/MOTOR RUN TIMER/ENERGY (AMRTE)

Approval Reference:	**ATS004**
Manufacturer:	**Gliderkeeper**
Contact:	**support@gliderkeeper.com**
Device Names:	**Gliderkeeper v2 model 309-v2, Power Sensor model 313-01**

This document gives formal approval from the above date for the ATS equipment described below to be used for competitions under the Sporting Code Section 4:Aeromodelling – Class F3G – RC MULTI-TASK GLIDERS WITH ELECTRIC MOTOR.

(i)   This document is the initial approval for this type of AMRTE and only applies to the functions relevant to the F3G competition class rules.

(ii)   Tests undertaken by EDIC-WG (or such representative as it may appoint), are specifically concerned with the functions relevant to the F3G competition class rules. Other functions of the equipment are not part of this approval and the relevance of this document does not extend beyond the specific validation and certification purposes mentioned above.

(iii) This document does not constitute a guarantee of compatibility of the device listed above with any associated devices with which it may be interconnected.

(iv) This document does not constitute any guarantee and/or statement by EDIC-WG, CIAM and/or FAI as to the reliability of the device listed above.

(v)   This approval is not concerned with National and other regulations relating to electronic equipment and compliance with such regulations is not the responsibility of the FAI.

(vi) This approval is not concerned with, and the FAI has no responsibility for, matters related to: (a) intellectual property and intellectual property rights and/or, (b) relations of the manufacturer listed above with any other entities except with FAI and its agents or as they affect the FAI, its agents and this approval.

EQUIPMENT

1 HARDWARE

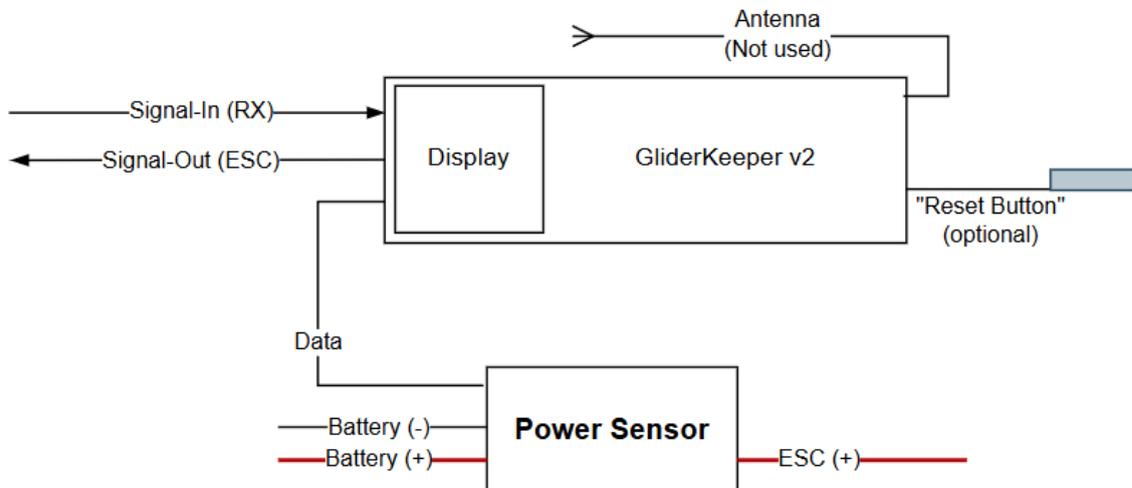#### 1.1 Equipment Name

Gliderkeeper v2

with power sensor

1.2 Hardware Version

Electronic   M309-v2

Power Sensor 313-01

1.3 Features

The ATS module as well as the power sensor are heat shrink encased circuit boards with direct attached cables. Gliderkeeper V2 is terminated in 3 pin JR style male and female connectors for connection to the receiver and ESC within a model.

The power sensor is using 2 thick red wires to connect to the ESC+ and BATT+. A black cable is used to sense battery voltage through BATT-.

Both devices are interconnected via a 4-wire data cable between the M309-v2 and the 313-1 sockets.

There is an optional connection on the 8-pin socket for a reset button.

- Measuring the altitude with a built-in barometric sensor
- Measuring the signal received from the receiver
- Measuring the motor run-time starting when the receiver signal indicates "Motor-On" (signal > 1.2ms)
- Sending the signal from the receiver to the ESC
- Sending the "Motor-Off" signal (1.2ms) to the ESC when the run-time of the motor (30 second) or the maximum amount of energy (350Wmin) has been reached
- Logging of the parameters using the built-in memory
- Integrated display to show firmware, serial number, used internal storage and F3G competition mode as well as the flight related values

  - Motor Runtime
  - Start Energy
  - Start (F5J) Altitude

- Connection to an optional "Reset Button"
- Providing WLAN connectivity for communication with WLAN capable devices (mobile phone, tablet, PC) to access the logger data and configuration via a browser.
- The GliderKeeper v2 has integrated flight time measuring components and capabilities as well as a transmitter to communicate flight data to a central display unit. These components and functionality have been integrated for use in F5J competitions. These are not used and are not necessary for F3G and have not been tested.
- The power sensor is measuring the voltage and current values and transmitting the data to the core logger.
- The "Reset Button" is provided by the manufacturer. This passive device (Reed Switch) enables a fast reset of the GliderKeeper v2 by the pilot/competitor during relaunch.

The logger has an integrated webserver with WLAN hotspot capabilities used to access the logger configuration, analyze and download flight data and update the firmware.

The Webserver and WLAN are disabled by default to avoid any interference with the other electronic equipment. It is activated bringing the logger into a nose-down position.
All required flight values are displayed on the integrated logger display. It's not necessary during competition to access the GliderKeeper v2 via WLAN or other means.
GliderKeeper is providing a dedicated F3G firmware (3.31.4) where all F3G related parameters are "hard-coded" and cannot be modified by the pilot.

1.4 Pressure Altitude Sensor

The pressure sensor module is manufactured by BOSCH is BMP388 with built in temperature compensation and is read with a 100Hz rate.

1.5 Out of scope

The measurement and results of the Gliderkeeper v2 Logger (core) to "Switch-Off" the motor after exactly 30 seconds has been briefly tested as a comprehensive test has already been performed for the homologation of this logger for F5J logger August 22, 2021.

Same applies for the measurement and display of the so-called "F5J altitude", as this has also been part of the EDIC F5J homologation of the Gliderkeeper v2 Logger (Core).

2 FIRMWARE

2.1 Firmware Version

Gliderkeeper V2	(M309-v2)	3.31.4 (26 February 2026)
Power Sensor	(313-1)	-

The firmware of the power sensor cannot be accessed or modified by the pilot.

2.2 Pressure to ISA Height Conversion

The firmware uses a polynomial series calculation to perform the pressure to ISA height calculation. This has a demonstrated accuracy consistent with the F3G competition application.

Calibration factors provided by the pressure sensor manufacturer are incorporated in the calculation.

2.3 Temperature Compensation

The firmware relies on temperature compensation provided in the pressure sensor.

2.4 Dynamic Response

Oversampling of pressure sensor data and subsequent processing does not contribute any significant degradation of dynamic response in the context of the F3G competition application.

2.5 Energy Calculation

The Energy is calculated by the Power Sensor firmware based on measured, calibrated battery voltage and current and transmitted to the Gliderkeeper V2 core.
The calculation has demonstrated accuracy consistent with the F3G competition application.

2.6 Energy Limiter

The Energy Limit is controlled by firmware. The Limiter calculating flight time, motor time and Wmin is triggered when the input signal reaches or exceeds 1.2ms.

2.7 Acceleration Detection

The Gliderkeeper v2 is using a 3-axis acceleration sensor (x-, y- and z-axis) measuring the acceleration in

each axis in 0.1 second intervals. The Gliderkeeper V2 calculates the SADA (Sum, Acceleration, Differentiated, Absolute) value based on the three differentiated signals eliminating negative values according to the formula: SADA = $0.0981 \times (|dx|+|dy|+|dz|)$ [m/s³]
Stillstand is detected when 20 seamless SADA values are < 4 m/s³.

3 CONDITIONS OF APPROVAL

3.1 This Approval is only applicable to devices of the type described and manufactured to the same production standards as the example evaluated. This Approval is not applicable to any device which has been subject to repair or modification by person(s) other than the original manufacturer or his authorized agent.

3.2 <u>Withdrawal of Approval</u>

If after this Approval has been issued, inconsistencies of performance are found in further examples of the device(s), Approval may be withdrawn upon notice to the manufacturer.

3.3 <u>Changes to F3G Class Rules</u>

If the F3G class rules are amended in any manner that affects the technical specification of the ATS, the validity of this approval will be subject to review.

3.4 <u>Accompanying documents</u>

 "EDIC - Homologation GliderKeeper V2 for F3G - V1.0 - FINAL.docx"

3.5 <u>Expiry of Approval</u>

This Approval remains active until it is either superseded or withdrawn. A list of all currently active Approvals can be obtained from the FAI CIAM website.

4 PRODUCTION STATUS

At the date of issue of this approval, the Gliderkeeper v2 and Power Sensor are in current production.

5 MANUFACTURER'S CHANGES

Notification of any changes to hardware and/or firmware must be made by the manufacturer to the Chairman of EDIC-WG so that a decision can be made on any further testing that might be required to maintain CIAM Approval of the ATS. This includes changes that are applicable to any additional functions of the device(s) that do not necessarily form part of the F3G requirements.

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