



TALOS AVIONICS

AEOLUS-SENSE INSTALLATION MANUAL

NOTE: Products AEOLUS-SENSE are collectively referred in the current document as AEOLUS-SENSE . If explicit reference to one of the products is needed, this is made by the actual product name.

ATTENTION: Installation of the AEOLUS-SENSE is supplemental only. It is not intended as a replacement for or modification to an existing, approved, or required system.

AEOLUS-SENSE is not a certified aviation instrument. Do not rely on AEOLUS-SENSE as your only navigation aid. Failure to comply to this warning may result in property damage, serious injury or death. You assume total responsibility and risk associated with using this device and associated app.

Congratulations on purchasing an AEOLUS-SENSE This device provides rich flight information as detailed below. Proper installation and maintenance of the device facilitates accurate performance and uninterrupted operation.

Please read the current manual prior to using AEOLUS-SENSE and keep it for future reference.

Correct operation of the AEOLUS-SENSE requires that one or more mobile smart device(s) (iOS or Android) are connected to the device.

ATTENTION

We update the application EFIS TA and the firmware of our units when necessary to ensure the best performance of our devices. This procedure is automatic. When you connect your mobile device to the internet, an update is automatically downloaded. If you are asked to give your consent, do so. After downloading the update, the first time you connect the tablet to one of our devices, you'll be asked to confirm the firmware update. Press confirm.

ATTENTION, during this process, don't power off the device for 3mins. Then reconnect it to the tablet for normal operation. Please ensure that the power supply is enough for the time required for the update operation.

If the device is turned off intentionally or because of poor power supply during this operation, the device could stop working and the only way to recover it is by sending back to the factory for complete reprogramming.

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1 AEOLUS-SENSE

The AEOLUS-SENSE is a portable device that comes with a GPS antenna and with a USB adaptor for cable connection to a smart mobile device (tablet or smartphone).

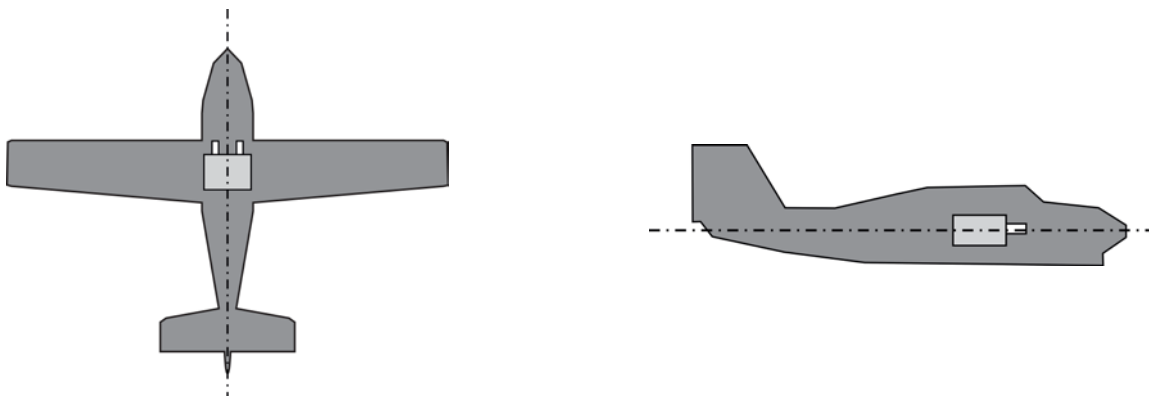
1.1 Mounting the AEOLUS-SENSE

The AEOLUS-SENSE should be mounted in a convenient dry place, as far away as possible from heat sources. A suitable mounting location is the top of the instrument panel. You can mount the unit by means of double sided adhesive tape or Velcro. Please ensure that the unit doesn't move during flight.

Must be connected to the native pitot/static using two 1/8in. BSP to your hoses adaptors.

The AEOLUS-SENSE comes with a GPS antenna. This antenna should be connected at the back panel of the device and mounted with double sided adhesive tape or Velcro, in a free-to-sky location for optimal signal reception.

It is important for the AEOLUS-SENSE to be mounted parallel and as close as possible to the symmetry axes of the airplane (see Fig. 2). The front side of the AEOLUS-SENSE is marked by a small airplane on the cover of the unit. After mounting the AEOLUS-SENSE the "AHRS leveling" procedure described in Section 1.5 of the current manual should be performed, in order to adjust for small inaccuracies during placement.



(a)

(b)

Fig. 2. AEOLUS-SENSE should be mounted parallel to the main axes of the airplane.

1.2 Power Connection

AEOLUS-SENSE connects to a fused connection, which may be the cigarette lighter plug of the aircraft. Always make sure to connect with the proper polarity:

- The connections to the external DSUB25 connector are as in the below table:

PIN	CONNECTION
1	Main Power plus(+) (factory connected)
2	Autopilot
4	External USB(factory connected)
5	External USB(factory connected)
7	Horn red(FlySense only)
8	External LED(PRO only)
9	temperature probe blue or yellow(factory connected)
10	GND
11	External Switch(PRO only)
12	External Switch(PRO only)
13	GND
21	temperature probe black (factory connected)
22	temperature probe red (factory connected)
24	Horn Black(FlySense only)
25	Main Power Minus(-) (factory connected)

1.3 Software – EFIS TA app

AEOLUS-SENSE operates with the free EFIS TA app offered by TalosAvionics. EFIS TA app has been tested to comply with ASTM F3153 – 15 Standard Specification for Verification of Avionics Systems. EFIS TA app runs on smart mobile devices (tablets or smartphones) with iOS or Android operating systems.

EFIS TA app for Android can be downloaded from [Google Play Market](#).

EFIS TA app for iOS can be downloaded from [Apple's App Store](#).

EFIS TA software instructions can be downloaded from <https://www.talosavionics.com/support/>

PLEASE DO READ THE EFIS TA APP SOFTWARE INSTRUCTIONS!

EFIS TA app may operate in standalone mode, when the smart mobile device is not connected to an AEOLUS-SENSE or --preferably-- in connected mode, when the smart mobile device is connected to an AEOLUS-SENSE .

When EFIS TA app runs on a smart mobile device in standalone mode, it displays a relevant message informing the pilot about operation in standalone mode and runs by employing the internal sensors of the smart mobile device (assuming that the latter is equipped with the necessary sensors). When the smart mobile device is connected to an AEOLUS-SENSE via a cable-adaptor or via wifi, the EFIS TA app automatically recognizes AEOLUS-SENSE and the above message disappears. If, for any reason, connection to the AEOLUS-SENSE is lost (e.g. power is unplugged), EFIS TA app switches automatically to standalone mode and the message reappears. Accordingly, the pilot may continue using EFIS TA app with the internal sensors of the smart mobile device as a backup, even in case of power failure!

From the main screen of the EFIS TA app interface, you can tap on “MENU” button and navigate to “sensor status window” and check the status of the sensors, as depicted in Fig. 3 below.

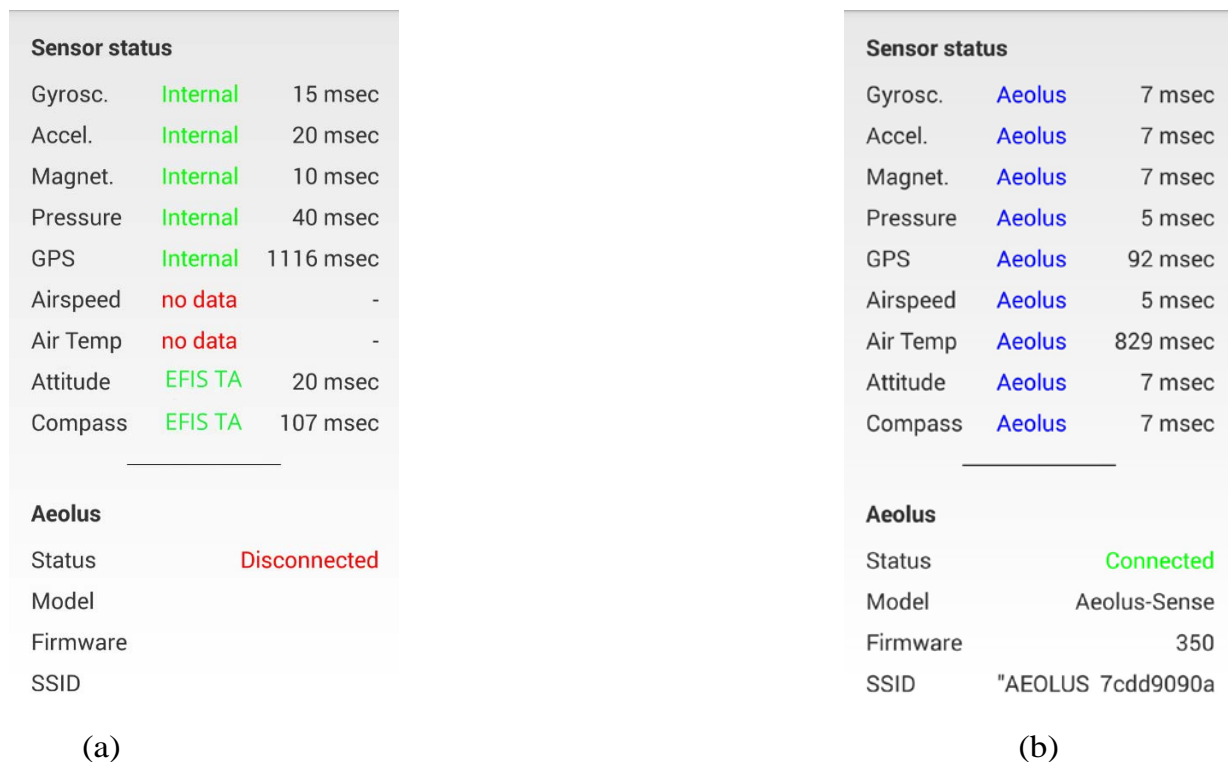


Figure 3: Sensor status window. (a) EFIS TA app working with internal sensors only, (b) EFIS TA app connected to an AEOLUS-SENSE

To test the connection, start the EFIS TA app and tap on “MENU” button and then “Sensor Status”. A screen as in Fig. 3b verifies connection to AEOLUS-SENSE 4(T). If a screen as in Fig. 3a comes up, no connection with an AEOLUS-SENSE is established. Connection of the smart mobile device to an AEOLUS-SENSE is achieved by two means: (a) wired connection via a USB cable-adaptor, (b) wireless connection via wifi.

USB Cable Connection

The Aeolus-Sense comes with a USB connector at the back panel of the device, which connects it to the smart mobile device that is used as display. USB cable connection confirms secure communication under any conditions and also facilitates charging of the smart mobile device.

Please note that in USB Cable connection, the smart mobile device is charged by the AEOLUS-SENSE.

After connection of AEOLUS-SENSE to the smart mobile device has been established, please follow the same steps as when connecting the latter device to a computer. You must permit the device to connect to unknown sources and press allow when asked, if you trust the connection to the AEOLUS-SENSE .

IMPORTANT: before connecting the smart mobile device with the cable-adaptor, you must turn off the WiFi connection to the AEOLUS-SENSE .

Wifi Connection

AEOLUS-SENSE creates a wifi network that is used to connect a smart mobile device. The SSID of AEOLUS-SENSE wifi network is “AEOLUS XXXXXXXXXX” where X is a unique alphanumeric string. Up to ten (10) smart mobile devices can be simultaneously connected via wifi to an AEOLUS-SENSE .

1.4 Compass Calibration

Before start using your AEOLUS-SENSE , the device’s compass should be calibrated. This only needs to be done once. For that, the AEOLUS-SENSE has to be powered up and the EFIS TA app must be running on a connected (see above) smart mobile device. Please note that compass calibration must be performed with the aircraft in a parking position on the ground, and never during a flight. Moreover, this calibration procedure must be performed with the AEOLUS-SENSE as close as possible to the final installation position in order to compensate for parasitic magnetic fields. The exact steps for compass calibration are outlined below:

- Power up your device
- Connect your smart mobile device (iOS or Android) to the AEOLUS-SENSE wifi Network (no password needed).
- Start the EFIS TA app on the smart mobile device.
- Tap on “MENU” button and then “Compass Calib”.
- A notification window will pop up, informing you that the calibration procedure is about to start. Press “Start” to continue.
- EFIS TA app will return back to the main screen and the calibration window, indicating the calibration progress will appear (Fig. 4). Start rotating your device slowly, until the indication on the screen becomes “Good” or “Strong”. To easily achieve the desired calibration result, start by rotating your device three times around each axis and then perform a sequence of “lazy eight” maneuvers (Fig. 5).
- Press “Close” or wait a few seconds until the calibration window closes automatically.



(a)

(b)

(c)

Figure 4: (a) Press “Start” to start compass calibration. (b) Calibration in progress. The calibration results are indicated as “Weak”; you should continue rotating your device until you have a “Good” or “Strong” indication. (c) Indication as “Strong” calibration signifies that the device’s compass has been properly calibrated.

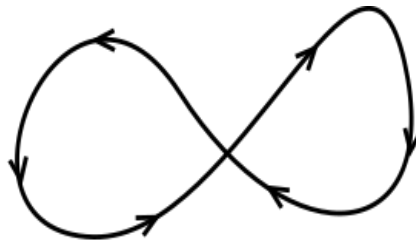


Fig. 5: To easily calibrate the Compass start by slowly rotating AEOLUS-SENSE three times around each axis and then perform a sequence of “lazy eight” maneuvers until you have a “Good” or a “Strong” indication on the EFIS TA app.

1.5 AHRS Leveling

As already stated above, the AEOLUS-SENSE should ideally be mounted parallel to the symmetry axes of the airplane. Since this cannot always be accurately performed, AHRS leveling is important in order to adjust for minor inaccuracies during placement.

The “AHRS leveling” procedure described below needs only to be done once, after you have mounted and fully connected your AEOLUS-SENSE . Please note that AHRS leveling must be performed with the aircraft in a parking position on the ground, and never during a flight.

- Power up your device.
- Connect your smart mobile device (iOS or Android) to the AEOLUS-SENSE wifi Network.
- Start the EFIS TA app on your mobile device.
- Tap on “MENU” button and then “Level AHRS”.
- EFIS TA app will return back to the main screen and the “AHRS leveling” window (Fig. 6) will appear.
- Press the “Auto” button for automatic AHRS leveling, and/or use the arrows to manually adjust the AHRS. Manual adjustment may be unavoidable if, for example, you are installing AEOLUS-SENSE in an aircraft with a tailwheel-type landing gear (a taildragger).
- When you are done with leveling the AHRS, press “Close” to save the changes and return to the main screen.

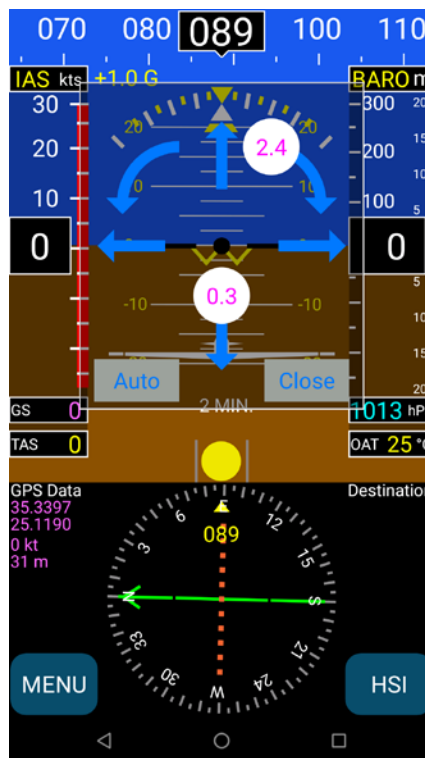


Fig. 6: AHRS leveling. Press “Auto” for automatic leveling, and/or use the arrows to manually adjust the AHRS and the compass.

1.6 Other Considerations Regarding the AEOLUS-SENSE

The AEOLUS-SENSE complies fully with applicable Electronic Emissions and Flame Resistance standards. More specifically:

- **Electronic Emissions:** The AEOLUS-SENSE deploys a WiFi network with transmitter power 9mW EIRP. Accordingly, it complies fully with the 10mW limit imposed by PS-ANM-25-13 and part 15 of FCC rules.
- **Flame Resistance:** Materials, design and construction of the AEOLUS-SENSE are flame resistant and in compliance with CAR regulation 3.

2 AEOLUS-SENSE Maintenance

AEOLUS-SENSE has been designed and manufactured for long and maintenance-free operation. Still, care must be applied for the following:

- **AEOLUS-SENSE Compass:** Any replacement and/or relocation of metallic items in the cockpit may require re-calibration of the Compass. Please follow the steps outlined in section 1.4 of the current document for Compass calibration.

3 Use Limitations and Abnormal Operation

The temperature and voltage operational ranges of AEOLUS-SENSE are as follows:

Temperature range: -20C to 65C or -4F to 149F

Operation Voltage: 10-32Vdc

Operation Current: 0.5A, and max 3A during tablet charging. Please use a fuse of 5A.

Inflight power reset: in case of inflight power reset or if you turn on the unit during the flight after losing your main systems, please note that there is **no limitation or constraint** of attitude for correct operation of the AEOLUS-SENSE . This means that the AEOLUS-SENSE will recover in any flight attitude, such as sharp turns, strong turbulence, etc. No constraint is imposed of straight and leveled flight for recovery, which sometimes, in IMC is impossible to know. In this case, if you don't have a visual reference, please wait for about 40 to 60 secs for full recovery of the Artificial Horizon.

Loss of GPS or Pitot/static: our system uses both GPS and pitot/static for correct attitude indication. In case of loss of one of them, correct operation relays on the other one. If you lose both, then operation is based on less attitude accurate information provided by other inertial sensors and, depending on the kind of flight, there will be a slight drift after 15 to 30 mins.

Support

For support via email, please contact:

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