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FAA-APPROVED

AIRPLANE FLIGHT MANUAL SUPPLEMENT

for the

uAvionix AV-30-C

as installed on

_____

Airplane Make and Model per AML

Registration Number: _____
Serial Number: _____

This supplement must be attached to the FAA-approved Airplane Flight Manual when the AV-30-C is installed in accordance with Approved Model List Supplemental Type Certificate SA00410BO

The information contained herein supplements the basic manual only in those areas listed. For limitations, procedures, performance and loading information not contained in this supplement, consult the FAA-approved Airplane Flight Manual, markings, or placards.

FAA Approved By: WILLIAM P WITZIG Digitally signed by WILLIAM P WITZIG Date: 2020.08.26 06:57:03 -04'00'

Northeast Flight Test Section, AIR-711
Federal Aviation Administration
Burlington, MA

Date: 8/26/2020

Log of Revisions

Revision No.	Pages Affected	Description	FAA Approved	Date
A	All	Initial release	Not FAA approved	4/24/2020
B	7	Added note regarding AoA operation.	Not FAA Approved	8/7/2020
C	1, 17	Changed FAA approval contact. Updated document revisions.	W. Witzig, FAA, AIR711	8/26/2020

Table of Contents

1 GENERAL

1.1 AV-30-C

The uAvionix AV-30-C is a fully digital multi-mode instrument that mounts in the legacy 3 1/8" round instrument panel. It can be field configured as either an Attitude Indicator (AI) or a Directional Gyro (DG) indicator, is fully self-contained with dual-precision inertial and pressure sensors and allows for a wide variety of pilot customization.

The AV-30-C performs the following functions:

Primary Functions:

- Primary Attitude (AI Mode)
- Primary Slip (AI Mode)
- Primary Direction of Flight Indication (DG Mode)

Supplemental Functions:

- Indicated Airspeed
- Altitude
- V-Speeds
- Angle Of Attack
- Vertical Trend
- Vertical Speed
- Set Altitude
- Non-Slaved Heading
- Bus Voltage
- G Load
- Outside Air Temp
- True Airspeed
- Density Altitude
- GPS Nav Waypoint Data
- Heading Bug

Audio and Visual Alerting Functions:

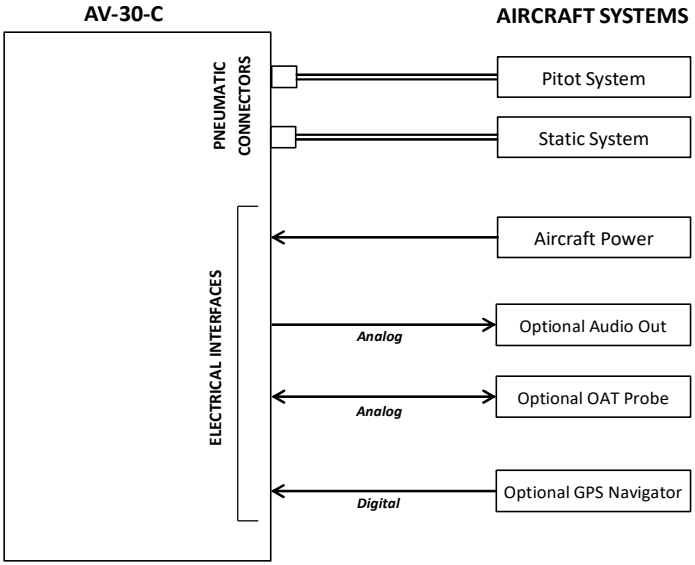
- AoA Alerting
- G Limit Alerting
- Excessive Roll Alerting

Misc. Functions:

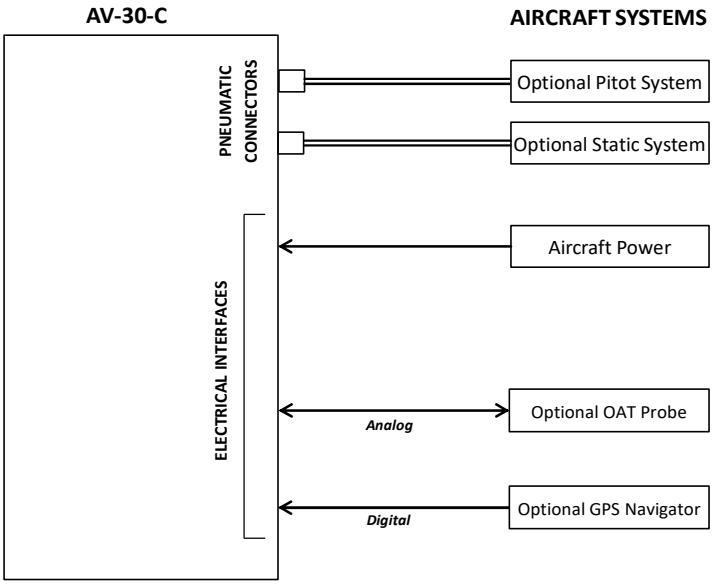
- Internal Battery Operation
- Auto / Manual Brightness

1.2 Required / Optional Equipment

The following describes each of the AV-30-C system interconnects for both the AI and DG installation configurations. Note that some interfaces are optional and may not be available in a given installation.



AV-30-C Aircraft Systems Interfaces – AI Mode



AV-30-C Aircraft Systems Interfaces – DG Mode

When installed as a DG, no audio outputs are supported, and temperature related air-data related parameters are only available when the optional OAT probe is equipped. Pitot and Static connections are also optional in the DG configuration.

1.3 Capabilities

The AV-30-C is approved for primary Attitude, Slip and Direction of Flight. All other functionality is supplemental in nature.

The internal battery capacity has been tested and verified to provide 30 minutes of operational capacity (with reserve), and meets the requirements defined in 14 CFR 23.1311(a)(5) and 23.1353(h), allowing independent operation from the primary electrical power system.

2 LIMITATIONS

2.1 Operational Limitations

The following operational limitations apply:

Operating Limits	
Attitude Rate Limit	±250 Degrees / Second
Attitude Operational Range	360° Roll, 180° Pitch
Attitude Accuracy	1° Static, 2.5° Dynamic
Airspeed Operational Range	40 to 300 Knots
Altitude Operational Range	-1,000 to +25,000 Feet

Note: For aircraft capable of acrobatic flight, the Angle Of Attack indication may become unreliable for operation in inverted flight and maneuvers exceeding ±8 G.

3 EMERGENCY PROCEDURES

No Change.

4 ABNORMAL PROCEDURES

4.1 Battery Transition – Attitude Indicator

In the event of an in-flight loss of electrical power when airspeed is over 40 kts, the unit will automatically transition to battery operation with no pilot action required.

4.2 Battery Transition – Direction Indicator

In the event of an in-flight loss of electrical power when airspeed is over 40 kts, the unit will automatically transition to battery only if the optional pitot and static connections have been made to the unit.

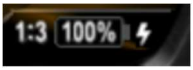
If pitot and static have not been supplied, or airspeed is 40 kts or below, the unit will initiate a timed shut-down sequence and prompt if the shutdown should be aborted. Pressing any knob or button will abort the shutdown and return to operation on battery.

4.3 On Battery Annunciation and Charge Status

An amber ON BATTERY annunciation will be presented when operating on battery, and a minimum of 30 minutes of unit operation will be available.

On Battery Operation

The battery charge state is shown in percentage. An internal battery charger will re-charge the battery if bus voltage is above approximately 10 VDC. The battery charge icon (presented adjacent to the battery charge state), will be illuminated during the charge cycle.



Battery Charge Status

5 NORMAL PROCEDURES

5.1 Pilot's Guide

Reference the AV-30-C Pilot's Guide for a full description of unit capabilities and configuration options.

5.2 Required Battery Charge Status for IFR Operations

The internal battery on the AI must show 95% or greater prior to departure into IFR, or planned IFR conditions.

5.3 AI Mode – Basic Components

The following figure shows the basic AI with all customizable data overlay fields turned off.

Basic AI Mode User Interface

Roll, Pitch and Slip cannot be disabled, but may be shown in various color and style formats depending on customization settings.

There are three independently customizable pages which are selected round-robin fashion by sequentially pressing the Page Selection button (shown as page 1 of 3 in the figures above). Each page can be configured to show various supplemental parameters as overlays.

A fourth, fully decluttered page allows all supplemental information to be hidden, leaving just attitude and slip displayed.

5.4 AI Mode – Initial Startup

On initial startup the red ALIGN flag will flash indicating that the attitude is still stabilizing.

AI Mode, Attitude Indicator Align Indication

When the ALIGN flag is displayed, the presented attitude may be incorrect.

5.5 DG Mode – Non-Slaved Heading Mode

The following figure shows the non-slaved DG heading mode (DG HDG). The heading must be manually adjusted to correspond with the magnetic heading as indicated by the wet compass on the aircraft.

This heading must be occasionally corrected as drift will occur.

Basic DG Mode User Interface

The current heading is adjusted by pressing the PUSH-SET button until the DG ADJ setting is shown. Rotating the knob will adjust the heading.

DG HDG Adjustment

Six textual fields are available for customization and can show various parameters depending on pilot preferences.

5.6 DG Mode – GPS HSI Mode

The display type can also be configured to show GPS nav data when connected to an external GPS navigator and presented in the traditional HSI format:

GPS HSI Mode

5.7 DG Mode – GPS ARC Mode

The display type can also be configured to show GPS track in an ARC mode, showing a map style presentation of the current waypoint and current navigational leg.

GPS ARC Mode

The entire programmed flight plan is not displayed, only the current nav leg and current waypoint.

When in the ARC display mode, the display scale is adjusted by rotating the rotary knob and represents the display distance from the own-ship icon to the outer compass ring.

If no GPS navigational data is available, the GPS track will be shown at 000, and either “NO GPS” or “NO DATA” will be displayed.

All GPS deviation data is limited to VFR operations only, as indicated by the Nav Mode indication (“VFR”).

The moving-map style GPS navigational data is to be utilized for VFR or IFR situational awareness only.

5.8 Push-Set Window

The Push-Set window is activated by pushing the main rotary knob in momentarily.

This will activate a window along the bottom of the display allowing various parameters to be adjusted with the rotary knob. Pushing the rotary knob after a value has been adjusted will accept the modified value.

The parameters that can be adjusted will vary based on the mode of the unit and the current configuration of the display. The following indicates how baro is adjusted when altitude has been configured for display:

Push-Set Example - Baro

Rotating the knob when this is displayed will change the baro setting. If however, the display is configured NOT to show altitude, the baro setting will not be presented as an option to adjust.

Push-Set Value	When Presented
Baro Setting	When altitude is configured for display
Direction Indication	When non-slaved heading is configured for display
Heading Bug	When non-slaved heading or GPS track is configured for display
Set Altitude	When set altitude is configured for display

Context Sensitive Push-Set Values

5.9 Additional Operational Aspects

- Air data and attitude will not be available when the red ALIGN flag is shown.

- If altitude configured for display, the initial baro setting will be reverse computed from the last known field elevation, reducing the amount of adjustment required. The baro field will be shown in gray while this is occurring.

- Non-Slaved Heading mode requires the pilot to set the initial heading and occasionally correct the heading based on the wet compass. The system will initialize to the last set heading on shutdown.

- GPS HSI and ARC modes are for VFR operations only. No vertical deviations are shown, and lateral deviations are not scaled for approach / IFR operations.

- The currently displayed GPS track may optionally be gyroscopically stabilized, allow smoother operation when in turns. This option is configured in the pilot accessible Setup Menu (GPS Track Stabilization).

- Air data / temperature related parameters (TAS, DALT, OAT) are only available if the DG has been connected to and OAT probe, otherwise they will not be selectable for display.

6 PERFORMANCE

No change.

7 WEIGHT AND BALANCE

No change.

8 RELATED DOCUMENTATION

The uAvionix AV-30-C documents, part numbers, and revisions listed below contain additional information regarding system operation installation and continued maintenance.

Part Number	Revision	Title
UAV-1003946-001	B (or subsequent)	AV-30-C Pilots Guide
UAV-1003947-001	C (or subsequent)	AV-30-C Installation Manual
UAV-1004045-001	A (or subsequent)	AV-30-C Instructions for Continued Airworthiness