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Date: 13.12.2023
Product: Nesis III, AETOS, Horis PFD, Emsis PFD, Indu ASI, Indu Combo
Subject: Airspeed offset check - dynamic pressure sensor check

Revision History

The following table shows the revision history of this document.

Rev.	Date	Description
A	24.11.2023	Initial release.
B	13.12.2023	Clarifications and Criteria.

Contents

1 Effectivity

All products delivered after 1.1.2023 shall be checked/adjusted for dynamic pressure offset at least twice every year.

2 Purpose & Background

We noticed some offset drift in the indication of dynamic sensors that we use for indicated airspeed measurements. Usually this offset is very stable and does not change much with time. However some of sensors in above mentioned products, which were delivered after start of 2023 are less stable and the offset may change erratically.

Although the offset changes, the sensor gain remains stable. This means that such sensor can still be used if its offset is monitored and corrected occasionally.

3 Compliance

Obligatory. All effected products must be monitored.

4 Instructions

Every product must be checked for the sensor offset at least twice per year and a note about the check shall be made in the aircraft logbook.

Make sure that pito-static system is not covered/blocked and that no wind is present. We recommend doing this in a closed hangar on a calm day.

Short instructions are given next, but please take a look at the appropriate user or installation manual for more details.

4.1 Nesis and Aetos

- Switch to `Options` page.
- Select the `Service` icon and enter password. If you do not know the password, select the `Info` icon and search for the `Service pass`. Number next to it is the password.
- Select the `Offset` icon and then the `Dynamic (airspeed)` option.
- Adjust the correction, so that dynamic pressure will show zero.
- Close all windows.

4.2 Horis

- Press and hold the knob to access the `Quick menu`.
- Select `Settings` from the list.
- Select `Pitostatic Offset`.
- Adjust the Airspeed pressure correction on the right, so that dynamic pressure will show zero.
- Close all windows.

4.3 Emsis

- Switch to the `Emsis Setup` page.
- Select the `Service` item and enter `314` as password.
- Search for the `Set alt & IAS offset` and select it.
- Adjust airspeed pressure so that the `Diff. press.` below will indicate zero.
- Close all windows.

4.4 Indu Airspeed & Indu Combo

In this case either Indu altimeter must be connected to the CAN bus together with the airspeed or a connection with `Blu` dongle shall be established with the help of `Kanja` Android app.

4.4.1 Adjustment Using Knob on Indu Altimeter

Please refer to the Indu Altimeter manual for details. Search for the `Airspeed Adjustment - Auto Zero` Section.

4.4.2 Adjustment With BLU

Please refer to the BLU and Kanja User Manual and search for the section `Offset -- Dynamic Pressure`.

5 Criteria

The easiest way is to check the dynamic pressure offset value on the instrument directly, but this is not always possible. In this case some reference instrument or pito-static equipment is needed.

5.1 Case A: Dynamic Offset Is Adjustable

This section covers the cases where the offset can be adjusted directly on the instrument or with the help of BLU dongle and Kanja app.

- If the offset change in last 6 months is less than 40 Pa (0.4 hPa) from the previous measurement - such change is considered as acceptable.
- if total offset correction is less then 80 Pa (0.8 hPa) - it is also acceptable.

If possible, maintain a long term records of dynamic sensor offsets, as this will give the best indication of the sensor health.
If the offset is not within the limits, contact `support@kanardia.eu` for more details.

5.2 Case B: Dynamic Offset Is Not Adjustable

This is the case for ASI and Combo indicator where BLU dongle is not available and sensor offsets can't be made. Here, a pito-static check with some reference (trusted) equipment shall be made. The results shall be compared with the table below. The table was constructed for the 80 Pa offset error:

V ref [km/h]	Difference [km/h]
70	10
100	8
150	6
200	5

If the difference is smaller than shown in the table and there is no means to adjust the offset in the instrument, a correction table shall be constructed and placed next to the instrument.

6 Persisting Problem

For the unlikely case of dynamic pressure offset changing a lot over time and where the total correction is more than 0.8 hPa (80 Pa), please contact us at `support@kanardia.eu`.

7 Additional Instructions

Weight and Balance: Not affected.

Manual: Not affected

Repetitive Inspections: Not required

Continuing Maintenance: Not required.