

# **Instructions for EFIS-D10 Magnetic Calibration**

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This document describes the procedure for in-plane magnetic calibration of the EFIS-D10. This procedure involves performing maneuvers both on the ground and in the air with the EFIS-D10 connected to a laptop PC running the EFIS-D10 Magnetic Calibration program. At the end of the maneuvers, the laptop calculates the calibration constants and uploads them to the EFIS-D10.

To perform the calibration, you will need the following:

- 1) EFIS-D10 installed in aircraft with PC connection to the EFIS-D10 available.
- 2) Laptop with the latest version of the EFIS Support Program installed (to input the magnetic dip angle into the EFIS.)
- 3) Magnetic Dip angle known. Refer to the EFIS-D10 Installation Guide or the EFIS Support Program help files for information about determining the magnetic dip angle and loading it into the EFIS-D10.
- 4) The EFIS-D10 Magnetic Calibration program downloaded from our web site and loaded on the laptop.
- 5) An accurate method of aligning the airplane with North on the ground. We have used a compass rose at the airport for this.
- 6) Appropriate cables to connect the laptop to the EFIS.

Once you have the installation completed and verified, a laptop connected to the EFIS-D10 with the EFIS-D10 Magnetic Calibration program, and a place to perform the calibration, perform the following steps:

- 1) Turn on the EFIS-D10 and allow it to warm up for at least 15 minutes before performing the calibration.
- 2) Start the EFIS-D10 Magnetic Calibration program on the laptop PC. On the EFIS-D10, navigate the menus to SETUP->MAGCAL. When you press the MAGCAL button, the program will indicate that it is receiving magnetic calibration data. If this message is not displayed, check if the data is available on one of the other available COMM ports using the pull down window in the EFIS-D10 Magnetic Calibration program window. If no data is available on any of the COMM ports, check your cabling to make sure it is correct.
- 3) Note that pushing the GNDNRT, AIRRGT, or AIRLFT buttons in the following steps will not result in any change on the EFIS display. However, the PC program's display will change with each button push.
- 4) With the plane in the normal flight state (engine running, all instruments and avionics on), align the plane to point as close as possible to magnetic North.

- Press the GNDNRT button and hold the plane still for 10 seconds. After the 10 seconds of holding still, maneuver the plane smoothly thru 540 degrees of heading change at a rate of 20 to 30 seconds per 90 degrees of change. At the end of the maneuver, the airplane will be pointing magnetic South. If at any time, you make a mistake, align the aircraft to point to magnetic North and repeat the process starting with pushing the GNDNRT button. When the 540 degree heading change maneuver has been completed, press the AIRRGT button.
- 5) Leave the PC connected to the EFIS with the MAGCAL program running and proceed to take off for the in-flight part of the calibration. After reaching a safe altitude, head the plane as close as possible to magnetic North. Press the AIRRGT button, continue holding a steady heading (North) for 10 seconds, and then make a 30 degree banked turn to the right for 540 degrees. The maneuver ends with the aircraft pointing South. Fly the maneuver as smooth as possible since this will give you better results. At the end of the maneuver, while still pointing South, press the AIRLFT button.
  - 6) Maneuver the aircraft to point to magnetic North again. Press the AIRLFT button a second time, continue holding a steady heading (North) for 10 seconds, and then make a 30 degree banked turn to the left for 540 degrees. The maneuver ends with the aircraft pointing South. Fly the maneuver as smooth as possible since this will give you better results. At the end of the maneuver, while still pointing South, press the END button.
  - 7) After pressing the END button, the PC will calculate the required magnetic calibration values and upload them into the EFIS-D10. This will result in the EFIS-D10 screen going dark (it may display LOADING on the screen) followed by the EFIS-D10 resetting back to normal flight.
  - 8) You can now exit the EFIS-D10 Magnetic Calibration program and shut down the PC.

At this point the calibration is complete. We suggest you evaluate the performance of the EFIS-D10 heading feature, preferably on a compass rose, and decide if the performance is acceptable to you. If the resultant compass accuracy is not acceptable, you can either repeat the calibration process attempting to fly the maneuvers more smoothly, or purchase, install, and calibrate the Dynon Avionics EDC-D10 Electronic Digital Compass.