

**TEMPORARY REVISION NO. 13
TO PC-12/47E PILOT'S OPERATING HANDBOOK**

**AIR DATA AND HEADING REFERENCE SYSTEM –
HIGH AND LOW LATITUDE OPERATIONS**

This Temporary Revision is applicable to aircraft MSN 545, 1001-1180 that are Pre SB 34-022.

Record the incorporation of this Temporary Revision on the Log of Temporary Revisions.

SECTION 2 – LIMITATIONS

PRIMUS APEX – ADAHRS

The system accuracy in areas where the horizontal magnetic field strength is less than 80 mGauss does not allow VOR, VOR/DME and NDB non-precision approaches. The flight crew must use (GPS) VOR/DME or (GPS) NDB overlay approaches, LNAV or LNAV/VNAV approaches, RNAV (GPS/GNSS) approaches, RNAV (RNP) approaches or LPV and ILS precision approaches instead.

Dead reckoning mode of navigation based on AHRS is not available in the high latitude regions (measured horizontal magnetic field strength less than 80 mGauss) since the ADAHRS magnetometers do not provide accurate information near the pole.

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SECTION 7 – AIRPLANE AND SYSTEMS DESCRIPTION

PRIMUS APEX – ATTITUDE AND HEADING

HIGH AND LOW LATITUDE OPERATIONS

Aircraft equipped with the ADAHRS (Honeywell 065-00188-5102 (SW ID 0202), Pilatus P/N 985.99.12.192 automatically provides calculated magnetic track, when the measured horizontal magnetic field strength is less than 80 mGauss but still within the coverage of the Magnetic Variation look up table of the FMS, and true track when operating outside this coverage. When true track is displayed, the airplane symbol on the INAV and Charts display is removed. When flying from true track zone into magnetic track zone, magnetic mode needs to be manually selected on the Avionics window. The Weather Radar, Stormscope and TCAS data is always shown relative to the aircraft's nose and is therefore not corrected for Drift Angle in Track Mode.

The coverage of the Magnetic Variation look up table can be seen in the Section 7, Figure 7-25, Sheet 1. If desired, the crew can also manually select a true North reference before the automatic switch from mag to true occurs. As soon as the measured horizontal magnetic field strength is more than 95 mGauss, the system automatically switches back to the MAG HDG. This hysteresis can be seen in the figure below.

HORIZONTAL MAGNETIC FIELD STRENGTH

On the ground in geographical latitudes where the measured horizontal magnetic field strength is less than 80 mGauss and the aircraft speed is less than 9 kts, neither heading from the ADAHRS, nor track from the GPS is provided. Therefore heading flags (HDG FAIL) are shown on the HSI and (HDG) on the INAV. During the initial take-off roll track output is provided and the heading flags are removed.

